

NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN ASIA  
(DIPTERA), LXII

By CHARLES P. ALEXANDER

*Amherst, Massachusetts*

Separate from  
THE PHILIPPINE JOURNAL OF SCIENCE

Published by the National Institute of Science and Technology  
Manila, Philippines

VOLUME 96, No. 1, MARCH, 1967

NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN  
ASIA (DIPTERA), LXII

By CHARLES P. ALEXANDER  
Amherst, Massachusetts

(Received for publication, October 5, 1966.)

SEVEN PLATES

This paper is devoted to a consideration of the Indian species of the Eriopterine genus *Gonomyia* Meigen and is based almost entirely on the very extensive collections that were made by Dr. Fernand Schmid, as discussed in several earlier parts of this series. *Gonomyia* is well developed in this area, there being known to me presently some 120 species distributed in 9 subgenera. It may be noted that in the earlier studies made by Enrico Brunetti (1911–1924)<sup>1</sup> only 8 species were known, pertaining to 4 subgenera. The most satisfactory account of the structure and interrelationships within the genus has been provided by Edwards.<sup>2</sup>

*Gonomyia* is one of the major genera in the Tipulidæ, including hundreds of species arranged in 15 subgeneric groups that are listed below. It may be noted that while certain of these groups are closely allied and may prove to be difficult to maintain, several are unusually distinct and on further study may prove to represent valid genera. On the basis of the presence or loss of the anterior arculus of the wings, the subgenera that have retained this element include *Protogonomyia*, *Ellipteroides*, *Idiocera*, and some smaller groups, whereas typical *Gonomyia* and *Lipophleps* have lost the anterior arculus. From the hypopygial structure, particularly the ædeagus and the nature of branching of the dististyle, it appears certain that *Protogonomyia*, *Ellipteroides* and some others are related to *Idiocera*, despite the very different general appearance. *Protogonomyia* in the local fauna

<sup>1</sup> Alexander, C. P. Classification and synonymy of the crane-flies described by Enrico Brunetti (Diptera: Families Ptychopteridæ, Trichoceridæ, and Tipulidæ). *Rec. Indian Mus.* 59 (1961) 19–34.

<sup>2</sup> Edwards, F. W. British short-palped crane-flies. Taxonomy of adults. *Trans. Soc. British Ent., Part 1* 5 (1938) 105–112.

includes about a score of species, virtually all being black or dark colored flies of large size, with vein  $R_2$  ( $r$  of some authors) lacking and with the small fleshy valves of the ovipositor setiferous virtually to their tips. The generally similar *Ellipteroides* is much like *Protogonomyia* except for the normal elongate sclerotized ovipositor. The newly proposed subgenus *Ramagonomyia* is the only one in the local fauna that has vein  $R_2$  ( $r$ , as above) preserved, as in the New World and Ethiopian group *Progonomyia*.

#### THE SUBGENERA OF GONOMYIA

- Electrogonomyia* ALEXANDER, Bernstein-Forschungen (Amber Studies) **2** (1931) 118, figs. 158, 159, as *gonomyia* (*Electrogonomyia*). Type, *pinetorum* Alexander. Fossil (Baltic Amber, Upper Eocene).
- Ellipteroides* BECKER, Zeits. Hym. Dipt. **7** (1907) 239. Type, *piceus* Becker (North Africa). Palæarctic, Oriental.
- Euptilostena* ALEXANDER, Philip. Jour. Sci. **66** (1938) 126-127, as *Gonomyia* (*Euptilostena*); name omitted through a typographical error, line 6 from bottom of page. Type, *reticulata* Alexander (Eastern Palæarctic) Holarctic, northern Neotropical.
- Gonomyia* MEIGEN, Syst. Besch. Eur. Dipt. **1** (1818) 146. Type, *tenella* Meigen (Europe). Virtually Cosmopolitan.
- Gonomyia* ALEXANDER, Almeida Commemorative **1** (1946) 5-6, as *Gonomyia* (*Gonomyia*). Type, *durabilis* Alexander (Brazil). Neotropical; Brazil.
- Idiocera* DALE, Ann. Mag. Nat. Hist. **8** (1842) 431, 433, as *Limnobia* (*Idiocera*). Type, *sexguttata* Dale. *Synonym-Ptilostena* BERGROTH, Ann. Mag. Nat. Hist. (8) **11** (1913) 575-576; type, *recurvinervis* Bergroth. Chiefly Holarctic and Oriental, fewer species in Australasian, Ethiopian and Oriental regions.
- Lipophleps* BERGROTH, Psyche **22** (1915) 55; renaming of *Leiponeura* Skuse (1889), preoccupied. Type, *skusei* Alexander (1913) new name for *gracilis* Skuse, preoccupied. Almost Cosmopolitan, including many of the remote Pacific islands.
- Neolipophleps* ALEXANDER, Rev. Entomol. **18** (1947) 98-99, as *Gonomyia* (*Neolipophleps*). Type, *cinerea* Doane. Entirely New World and chiefly Neotropical.
- Paralipophleps* ALEXANDER, Rev. Entomol. **18** (1947) 97-98, (as *Gonomyia* (*Paralipophleps*)). Type, *pleuralis* Williston. Chiefly Neotropical, a few in southeastern Neartic.
- Progonomyia* ALEXANDER, Cornell Univ. Agr. Expt. Sta. Mem. **38** (1921) 938, as *Gonomyia* (*Progonomyia*). Renaming of *Gonomyella* Alexander [Ann. South African Mus. **17** (1917) 152, preoccupied by *Gonomyella* MEUNIER (1899) 334, fig.]. Type, *slossonae*

Alexander (southern Neartic). Neotropical, Nearctic; southern Ethiopian.

*Protogonomyia* ALEXANDER, Philip. Jour. Sci. 55 (1934) 52-53, as *Gonomyia* (*Protogonomyia*). Type, *confluenta* Alexander (Formosa). Oriental.

*Ptilostenodes* ALEXANDER, Archiv für Hydrobiologie, Suppl.-Bd, "Tropische Binnengewässer" 2 (1931) 182, as *Gonomyia* (*Ptilostenodes*). Type, *ptilostenella* Alexander (Java). Oriental.

*Ramagonomyia* subgen. nov. Type, *protensa* sp. nov.

*Sivagonomyia* subgen. nov. Type, *discolophallos* sp. nov.

*Teuchogonomyia* subgen. nov. Type, *noveboracensis* Alexander.

*Palaeogonomyia* Meunier [(1899) 359] is now placed as a subgenus of *Rhabdomastix* Skuse [see Alexander, Bernstein-Forschungen 2 (1931) 111]. Fossil (Baltic Amber, Upper Eocene).

#### SUGENUS PROTOGONOMYIA Alexander

GONOMYIA (PROTOGONOMYIA) ACUSTYLATA Alexander.

Plate I, fig. 10.

*Gonomyia* (*Protogonomyia*) *acustylata* ALEXANDER, Jour. N. Y. Ent. Soc. 70 (1962) 11-12.

Type—male, Tung, Sikkim, altitude 4,500 feet, August 2, 1959. Male hypopygium (Plate 1, fig. 10).

GONOMYIA (PROTOGONOMYIA) APICULATA sp. nov.

Plate I, fig. 11.

Generally similar to *Gonomyia* (*Protogonomyia*) *nigripes* (Brunetti), differing especially in the structure of the hypopygium.

*Male*.—Length, about 6 millimeters; wing, 7 to 7.2; antenna, about 2.

*Female*.—Length, about 6 millimeters; wing, 7 to 7.2.

General coloration of the entire body, including also the antennæ, halteres and legs, black. Antennæ with flagellar segments long-oval, subequal to the longest verticils. Wings slightly blackened, stigma long and narrow, darker brown; veins brownish black. Venation: Sc relatively long, Sc<sub>1</sub> ending shortly before fork of Rs, Sc<sub>1</sub>, alone more than one-half Rs.

Male hypopygium (Plate 1, fig. 11) with outer lobe of basistyle, *b*, relatively slender, with a conspicuous glabrous sclerotized flange on mesal margin. Outer dististyle, *d*, at apex dilated into a subcircular head; intermediate style longest, beyond midlength very slender, the apex triangularly expanded, terminating in an appressed very slender spine, apical margin of blade microscopically notched to produce two very unequal divisions; inner style

stout, terminating in a slender spine, outer half with abundant strong spinoid setæ. Ædeagus relatively narrow, the setæ comparatively few in number.

*Habitat.*—India (Assam).

Holotype, male, Nongjrung, Mikir, altitude 2,700 feet, April 25, 1960 (*Schmid*). Allotopotype, female, pinned with type. Paratopotypes, 9 males and females, with the types.

GONOMYIA (PROTOGONOMYIA) APOCRYPHA sp. nov.

Plate 1, figs. 1, 12.

Size medium (wing of male about 7 millimeters); general coloration of body and appendages black; male hypopygium with flange of apical lobe of basistyle distinct; outer dististyle slender, intermediate style with terminal lobes very short, inner style a long-oval brownish yellow blade, its tip narrowly obtuse.

*Male.*—Length, about 6.5 to 6.6 millimeters; wing, 7 to 7.3; antenna, about 2.

Rostrum, palpi and antennæ black, the last relatively long. Head brownish black, sparsely pruinose.

Thorax dull black, sparsely pruinose, the præscutal stripes vaguely indicated. Halteres black, knobs large. Legs black. Wings (Plate 1, fig. 1) faintly darkened, the long narrow stigma darker brown; veins brownish black, delicate. Venation:  $Sc_1$  ending almost opposite the fork of  $R_s$ ,  $Sc_1$  subequal to  $R_{2+3+4}$ ; cell  $R_3$  deep, vein  $R_4$  decurved outwardly, widening cell  $R_3$ ; cell 2nd  $M_2$  about four times its petiole; m-cu close to fork of  $M$ .

Abdomen, including hypopygium, black, the central parts of the segments vaguely more cinnamon brown. Male hypopygium (Plate 1, fig. 12) with apical lobe of basistyle, *b*, stout, with a conspicuous semioval flange. Outer dististyle, *d*, slender, the apex only slightly wider than the stem, obtuse; intermediate style with surface conspicuously setiferous virtually to the base, apex very shallowly bifid, the lobes correspondingly shortened, inner blade a little broader, extended into a short point, lateral blade with apex obtuse to nearly truncate; inner style a long-oval brownish yellow blade, tip narrowly obtuse, outer half with relatively few delicate setæ.

*Habitat.*—India (Assam).

Holotype, male, Rupa, Kameng, Northeast Frontier Agency, altitude 5,200 feet, May 2, 1961 (*Schmid*). Paratopotypes, 2 males.

The present fly is quite distinct from other similar regional

species in hypopygial characters, especially the dististyles. The most similar species is *Gonomyia* (*Protogonomyia*) *megalomata* Alexander, which differs in the apical lobe of the basistyle and in all three dististyles.

GONOMYIA (PROTOGONOMYIA) CLISTA Alexander.

Plate 1, figs. 2, 13.

*Gonomyia* (*Protogonomyia*) *clista* ALEXANDER, Jour. N. Y. Ent. Soc. 70 (1962) 10–11.

Type—male, Dikchu, Sikkim, altitude 2,300 feet, May 9, 1959. Venation (Plate 1, fig. 2); male hypopygium (Plate 1, fig. 13).

GONOMYIA (PROTOGONOMYIA) CONTOSTYLA sp. nov.

Plate 2, fig. 14.

Size medium (wing of male about 6.5 millimeters); general coloration of body and appendages black; male hypopygium with apical lobe of basistyle very obtuse, without a flange; outer dististyle very small, the length only about three times the diameter; setæ of inner style spinoid.

*Male*.—Length, about 6.5 to 6.7 millimeters; wing, 6.5 to 6.8; antenna, about 1.5 to 1.6.

*Female*.—Length, about 7 to 7.5 millimeters; wing, 6.8 to 7.5.

Rostrum palpi and antennæ black; flagellar segments elongate, the more proximal ones shorter than their longest verticils. Head black.

Thorax entirely dull black with the exception of a small reddened area on the anterior pretergites; surface more or less pruinose, especially on pleura and the posterior mesonotum. Halteres brownish black, extreme base of stem reddened. Legs with coxæ gray pruinose; remainder of legs black. Wings moderately darkened, the very long and narrow stigmal area darker; veins dark brown, trichia black. Venation: Sc long, Sc<sub>1</sub> ending nearly opposite fork of Rs, Sc<sub>1</sub> alone from about one-half to nearly two-thirds as long as Rs; R<sub>2+3+4</sub> nearly three times the basal section of R<sub>5</sub>; cell 2nd M<sub>2</sub> about four times its petiole; m-cu at fork of M.

Abdomen, including hypopygium, black. Male hypopygium (Plate 2, fig. 14) with apical lobe of basistyle, *b*, very obtuse, without a flange, setæ long. Dististyles, *d*, with outer style very short, not extending beyond apex of basistyle, the length of stem only about three to four times the diameter, tip obtuse; intermediate style longest, terminating in a long spine, the subapical blade

triangular, with a small setuliferous lobe on inner margin; inner style simple, sausage-shaped, the obtuse tip narrow, outer third with relatively few but very long spinoid setæ, the more basal ones retrorse. Ædeagus relatively narrow, the setæ numerous, very small and delicate.

*Habitat*.—India (Assam).

Holotype, male, Shilliang, Myntang, Khasi-Jaintia, altitude 3,500 feet, April 21, 1960 (*Schmid*). Allotopotype, female, pinned with a paratype. Paratopotypes, 1 male, 2 females; paratypes, 2 females, Thangram, Khasi-Jaintia, altitude 3,000 feet, April 22, 1960 (*Schmid*).

*Gonomyia* (*Protogonomyia*) *contostyla* is readily told by the hypopygial structure, especially the unusually small outer dististyle. Other regional members of the subgenus that have conspicuous spinoid setæ on the inner dististyle include *G. (P.) acustylata* Alexander, *G. (P.) apiculata* sp. nov., *G. (P.) pakistanica* Alexander, and *G. (P.) pallax* sp. nov. Species having such setæ small and delicate include *G. (P.) atomata* Alexander, *G. (P.) megalomata* Alexander, *G. (P.) nigripes* (Brunetti), and several others.

**GONOMYIA (PROTOGONOMYIA) DISTIFURCA** Alexander. Plate 1, fig. 3; Plate 2, fig. 15.

*Gonomyia* (*Protogonomyia*) *distifurca* ALEXANDER, Jour. N.Y. Ent. Soc. 70 (1962) 13.

Type—male, Dikchu, Sikkim, altitude 2,300 feet, May 9, 1959. Venation (Plate 1, fig. 3); male hypopygium (Plate 2, fig. 15).

**GONOMYIA (PROTOGONOMYIA) GLABRISTYLA** sp. nov. Plate 1, fig. 4; Plate 2, fig. 16.

General coloration of body and appendages black; wings tinged with blackish, cells  $R_3$  and 2nd  $M_2$  deep; male hypopygium with apical lobe of basistyle short and stout, without a flange; intermediate dististyle with base short, the longer arms slender, glabrous, inner style with outer half a long-oval dusky blade.

*Male*.—Length, about 8 to 8.5 millimeters; wing, 8.5 to 9.5; antenna, about 2.3 to 2.5.

*Female*.—Length, about 7.5 to 8 millimeters; wing, 8.8. to 9.

Rostrum black, relatively long, with the labial palpi subequal to remainder of head; palpi black, terminal segment equal to the penultimate, slender. Antennæ black; proximal flagellar segments oval, the fourth and fifth cylindrical, terminal segment slightly longer than the penultimate. Head black.

Thorax, halteres and legs dull black. Wings (Plate 1, fig. 4) tinged with blackish, the costal border and narrow stigma slightly darker; veins brownish black. Venation: Sc long, Sc<sub>1</sub> ending shortly before fork of R<sub>s</sub>; cell R<sub>3</sub> deep, veins R<sub>3</sub> and R<sub>4</sub> only slightly divergent, cells R<sub>2</sub> and R<sub>3</sub> subequal in extent at margin; cell 2nd M<sub>2</sub> deep, about three times its petiole; m-cu close to fork of M.

Abdomen black. Male hypopygium (Plate 2, fig. 16) with apical lobe of basistyle, *b*, short and stout, without a flange, the setæ nearly as long as the lobe. Outer dististyle, *d*, a slender curved pale rod from a slightly expanded base; intermediate style longest, the base very short, the two unequal arms appressed to one another, longer than the base, especially the stouter axial arm, its tip obtuse; lateral arm about two-thirds as long, very slender, both arms glabrous, shiny, the relatively few short setæ of the style restricted to the stem before the fork; inner style yellow, its outer half a long-oval dusky blade with relatively few setæ. Aedeagus with abundant delicate setæ.

*Habitat*.—India (Assam).

Holotype, male, Jhum La, Kameng, Northeast Frontier Agency, altitude 7,800 feet, June 2, 1961 (*Schmid*). Allotype, female, Talung Dzong, Kameng, altitude 7,800 feet, June 6, 1961. Paratopotypes, 7 of both sexes, with the allotype.

*Gonomyia* (*Protogonomyia*) *glabristyla* is told from the numerous regional allies by the hypopygial structure, particularly the intermediate dististyle with its long slender glabrous branches.

**GONOMYIA (PROTOGONOMYIA) KHASIANA** Alexander.

Plate 2, fig. 17.

*Gonomyia* (*Protogonomyia*) *khasiana* ALEXANDER, Jour. N. Y. Ent. Soc. 70 (1962) 14.

Type—male, Cherrapunji, Khasi Hills, August 1935 (*S. Sircar*). Male hypopygium (Plate 2, fig. 17).

**GONOMYIA (PROTOGONOMYIA) LATEROMACULA** sp. nov. Plate 1, fig. 5; Plate 2, fig. 18.

Mesonotum brownish gray, median præscutal stripe blackened anteriorly; pleura brown, variegated with yellow and with a large intensely blackened spot on anepisternum; wings weakly tinged with brown, cell R<sub>3</sub> deep, veins R<sub>3</sub> and R<sub>4</sub> diverging very gradually; male hypopygium with the outer dististyle a broad-based spine.



*Male*.—Length, about 5.5 to 6 millimeters; wing, 6 to 6.5; antenna, about 1.4 to 1.6.

*Female*.—Length, about 5.5 millimeters; wing, 6.2 to 6.3.

Rostrum brown; palpi black. Antennæ brown; flagellar segments subequal to their verticles, the outer ones long and slender. Head brown, anterior vertex and orbits light gray pruinose; anterior vertex elevated.

Pronotum yellow, variegated with dark brown. Mesonotum brownish gray, præscutum with humeral and lateral regions yellowed, median stripe faintly indicated, widened and blackened anteriorly; posterior sclerites of notum brown, scutellum slightly more yellowed, postnotum more pruinose. Pleura brown, ventral pleurites paler brown, anepisternum with a large intensely blackened area, beneath it with a vague yellowed stripe extending from propleura to metapleura. Halteres brown. Legs with coxæ and trochanters testaceous yellow; remainder of legs obscure yellow, outer tarsal segments slightly darker. Wings (Plate 1, fig. 5) weakly tinged with brown, stigma scarcely differentiated; veins brown. Venation:  $Sc_1$  ending about opposite fork of  $R_s$ ,  $Sc_2$  retracted,  $Sc_1$  exceeding  $R_{2+3+4}$ ; veins  $R_3$  and  $R_4$  diverging very gradually; cell  $R_3$  long, vein  $R_4$  about four times  $R_{2+3+4}$ ,  $R_3$  about two and one-half times this vein; cell  $M_2$  open by atrophy of basal section of  $M_3$ ; m-cu at or close to fork of  $M$ .

Abdominal tergites and hypopygium dark brown, basal sternites obscure yellow, outer segments more darkened. Male hypopygium (Plate 2, fig. 18) with apical lobe of basistyle, *b*, short, without flange, apex obtuse. Outer dististyle, *d*, a simple pale rod, broad at base, narrowed gradually into a needlelike spine; intermediate style unequally bifid at apex, axial arm nearly three times the lateral branch; inner style outwardly gradually dilated into an obtuse head.

*Habitat*.—Thailand.

Holotype, male, Chiangmai, near Dr. Buker's Cabin, February 24, 1953 (*Deed C. Thurman*). Allotopotype, female, pinned with type. Paratopotypes, 6 of both sexes, with the type (*Thurman and Manop*).

*Gonomyia* (*Protogonomyia*) *lateromacula* is most similar to *G.* (*P.*) *namtokensis* Alexander, differing evidently in the coloration of the thoracic pleura and especially in hypopygial characters, including the outer dististyle,

## GONOMYIA (PROTOGONOMYIA) MEGALOMATA Alexander.

Plate 2, fig. 19.

*Gonomyia (Protogonomyia) megalomata* ALEXANDER, Jour. N. Y. Ent. Soc. 70 (1962) 14-15.

Type—male, Dikchu, Sikkim, altitude 2,300 feet, May 9, 1959. Male hypopygium (Plate 2, fig. 19).

## GONOMYIA (PROTOGONOMYIA) PELLAX sp. nov.

Plate 2, fig. 20.

Size relatively large (wing of male to 7 millimeters); body and appendages black; male hypopygium with outer dististyle small, slender, at apex dilated and twisted to appear foot-shaped; intermediate style very large, inner style at apex with a concentration of long yellow spinoid setæ; ædeagus with setæ relatively sparse and weak.

*Male*.—Length, about 6.5 millimeters, wing, 6.2 to 7; antenna, about 1.7 to 1.8.

*Female*.—Length, about 6 to 6.5 millimeters; wing, 7 to 8.

General coloration of the entire body dull black, sparsely pruinose to appear dark gray. Mouthparts, palpi, antennæ and legs uniformly black. Wings faintly darkened, stigma very narrow, brown; veins brownish black. Venation:  $Sc_1$  ending shortly before level of fork of Rs,  $Sc_2$  moderately removed,  $Sc_1$  alone from two-fifths to one-half Rs; position of m-cu variable, from shortly before the fork of M to about one-half its length beyond this fork (in the holotype and allotype).

Male hypopygium (Plate 2, fig. 20) with apex of lobe of basistyle broadly obtuse, with an ill-defined inner flange. Outer dististyle, *d*, small, slender, distal end slightly dilated and twisted to appear more or less foot-shaped; intermediate style very large and conspicuous, nearly as long as the basistyle, the outer half expanded and forking into a gently curved spinelike blade and a more triangular expanded inner section, the usual setæ of the stem and base of blade abundant but unusually small and weak; inner style a very gently arcuated simple arm that is longer than the outer style, with a concentration of about 12 long yellow spinoid setæ at and close to apex. Ædeagus small, only moderately expanded, the setæ relatively few and weak.

*Habitat*.—India (Assam).

Holotype, male, Nongjni, Khasi-Jaintia, altitude 3,750 feet, April 19, 1960 (*Schmid*). Allotopotype, female, pinned with type. Paratypes, 1 male, Jarain, Khasi-Jaintia, altitude 2,800

feet, April 13, 1960; 1 female, Umlangshor, Khasi-Jaintia, April 18, 1960.

Other regional members of the subgenus having conspicuous spinoid setæ on the inner dististyle of the hypopygium include *Gonomyia* (*Protogonomyia*) *acustylata* Alexander, *G. (P.) apiculata* sp. nov., *G. (P.) contostyla* sp. nov., *G. (P.) rejecta* sp. nov., and some others, all readily distinguished among themselves by the structure of the three dististyles.

**GONOMYIA (PROTOGONOMYIA) REJECTA** sp. nov.

Plate 2, fig. 21.

General coloration black, pruinose; antennæ, halteres and legs black; male hypopygium with both the inner and outer dististyles appearing as narrow flattened blades, at near three-fourths the length with a compact group of long spearlike spinoid setæ that are directed basad.

*Male*.—Length, about 6 millimeters; wing, 6.5; antenna, about 2.1.

*Female*.—Length, about 6 millimeters; wing, 6.5.

Rostrum and palpi black. Antennæ black; flagellar segments oval, the outer ones more elongate. Head dull brownish black, pruinose, especially on the genæ.

Pronotum dull black, scutellum obscure yellow. Mesonotum black, surface subnitidous by a sparse pruinosity, especially laterally; humeral region of præscutum, posterior callosities of scutal lobes and posterior border of scutellum obscure brownish yellow, less evident in the female. Pleura dull black, sparsely pruinose. Halteres brownish black, base of stem restrictedly yellowed. Legs black. Wings weakly darkened, stigma linear, pale brown; veins dark brown, macrotrichia black. Venation:  $Sc_1$  ending shortly before fork of Rs; m-cu close to fork of M.

Abdomen, including the genitalia of both sexes, black. Male hypopygium (Plate 2, fig. 21) with apex of basistyle, *b*, broad, almost truncate, the inner angle with indications of a low flange; face of basistyle with an oblique sclerotized ridge extending to base of the apical emargination. Outer dististyle, *d*, a slender yellow blade, gently curved, base greatly dilated, apex obtuse; intermediate style blackened, apex bifid, the outer arm a slender spine that lies across the face of the expanded inner blade; inner dististyle distinctive, appearing as a flattened blade that is subequal in length to the outer style and a little broader, the outer margin at near three-fourths the length with a concentration of about

a dozen long spearlike spinoid setæ in a compact group that is directed basad. Ædeagus narrow, with relatively sparse setæ.

*Habitat*.—India (Assam).

Holotype, male, Mynso, Khasi-Jaintia, altitude 3,500 feet, April 20, 1960 (*Schmid*). Allotopotype, female, pinned with type.

*Gonomyia* (*Protogonomyia*) *rejecta* is a very distinct fly that is readily told from other species by the armature of the inner dististyle of the hypopygium. Other regional forms that have modified spinoid setæ on this style include *G. (P.) acustylata* Alexander, *G. (P.) apiculata* sp. nov., *G. (P.) contostyla* sp. nov., *G. (P.) pakistanica* Alexander, *G. (P.) pella* sp. nov., and some others, all with distinctive hypopygia.

**GONOMYIA (PROTOGONOMYIA) SCOTEINA** sp. nov.

Plate 1, fig. 6; Plate 3, fig. 22.

Size large (wing of male over 8.5 millimeters); general coloration of body and appendages dull black; wings with cell  $R_3$  deep, the veins only slightly divergent; male hypopygium with apical lobe of basistyle short and stout, without a flange; outer dististyle narrowed to the subacute tip, intermediate style with the outer blades subequal in length.

*Male*.—Length, about 10 millimeters; wing, 8.7; antenna, about 2.

Rostrum slightly produced, about one-third the remainder of head, black, pruinose; palpi black. Antennæ black throughout; proximal flagellar segments oval, the outer ones more elongate, subequal to their verticils. Head black, gray pruinose.

Thorax dull black, the pretergites light brown; pseudosutural foveæ black; scutellum, mediotergite and pleura slightly more pruinose; membrane of the meral region restrictedly yellowed. Halteres and legs black. Wings (Plate 1, fig. 6) tinged with blackish, the prearcular and costal fields a trifle more saturated; stigma long and narrow, darker brown, virtually restricted to the costal cell; veins dark brown. Venation: Sc long,  $Sc_1$  ending shortly before fork of Rs; cell  $R_3$  deep, the veins only slightly divergent, cell  $R_3$  at margin about one-half more extensive than cell  $R_2$ ; anterior branch of Rs more than three times  $R_{2+3+4}$ ; cell 2nd  $M_2$  deep, more than three times its petiole.

Abdomen black throughout. Male hypopygium (Plate 3, fig. 22) with apical lobe of basistyle, *b*, short and stout, without a flange but with abundant long setæ. Outer dististyle, *d*, broad-based, gradually narrowed outwardly to the subacute tip; inter-

mediate style with the distal blades subequal in length, the inner more pointed, margin of outer blade with moderately long setæ; inner dististyle expanded on outer half.

*Habitat*.—India (Assam).

Holotype, male, Lifakpo, Kameng, Northeast Frontier Agency, altitude 3,100 feet, May 15, 1961 (*Schmid*).

*Gonomyia* (*Protogonomyia*) *scoteina* is one of the largest members of the subgenus. It is most similar to species such as *G. (P.) alomata* Alexander and *G. (P.) nigripes* (Brunetti), differing from these and others in the details of venation and hypopygial structure.

**GONOMYIA (PROTOGONOMYIA) THIORHOPALA** Alexander. Plate 1, fig. 7; Plate 3, fig. 23.

*Gonomyia* (*Protogonomyia*) *thiorhopala* ALEXANDER, *Jour. N. Y. Ent. Soc.* 70 (1962) 15–16.

Type—male, Singbeng, Sikkim, April 26, 1959 (*Schmid*).

Venation (Plate 1, fig. 7); male hypopygium (Plate 3, fig. 23).

#### Subgenus **SIVAGONOMYIA** novum

Characters generally as in *Progonomyia* and *Ramagonomyia* in the retention of vein  $R_2$  of the wings, with other features as in *Protogonomyia* and *Ellipteroides*. Ovipositor with cerci long and slender, sclerotized. Male hypopygium (Plate 3, fig. 24) with the phallosome distinctive, appearing as a broad central structure, the outer third divided into two slender spines that are directed caudad and lie generally parallel to one another.

Type of subgenus: *Gonomyia* (*Sivagonomyia*) *discolophallos* sp. nov. Oriental. The only species presently known. The subgeneric name is in allusion to the two-spined ædeagus, which is unique in the genus.

**GONOMYIA (SIVAGONOMYIA) DISCOLOPHALLOS** sp. nov. Plate 1, fig. 9; Plate 3, fig. 24.

General coloration of thorax polished black, conspicuously patterned with yellow; head light gray; halteres yellow; legs yellow, tips of femora and tibiæ broadly black; wings yellow, restrictedly patterned with pale brown; male hypopygium with the characters as described under the subgenus, the apex of the ædeagus being divided into two long parallel spines.

*Male*.—Length, about 5 millimeters; wing, 6; antenna, about 2.

*Female*.—Length, about 8 millimeters; wing, 7.

Rostrum brown; palpi brownish black. Antennæ of male relatively long, approximately one-third the wing; scape and pedicel brownish yellow, flagellum black, bases of the more proximal segments narrowly yellowed; verticils slightly longer than the segments. Head light gray; anterior vertex broad.

Pronotal scutum light yellow, the sides black, scutellum concolorous. Mesonotal præscutum with disk polished black, humeral region and a small median spot at suture yellow, the latter being confluent with a larger area at midregion of scutum, the lobes of the latter polished black; scutellum light yellow, base blackened, parascutella and postnotum black. Pleura intensely black on propleura, anepisternum, ventral sternopleurite and dorsal pteropleurite; dorsopleural region and a conspicuous ventral longitudinal stripe light yellow; the latter widened behind to include the meron. Halteres yellow, knob paler yellow. Legs with coxæ obscure yellow, bases blackened, broadly so on fore pair, very narrow on hind coxæ, trochanters yellow; femora light yellow basally, tips broadly black, on fore pair including the outer two-thirds, on the remaining legs the black tips narrower, involving the outer fifth to sixth; tibiæ yellow, tips broadly black, broadest on fore pair, including the outer third, extreme base similarly darkened, tarsi black. Vestiture of legs normal, inconspicuous. Wings (Plate 1, fig. 9) yellow, the prearcular and costal fields clear light yellow, the extreme base vaguely darkened; a narrow pale brown seam includes the stigma and cord, narrowly interrupted at  $M_{3+4}$ ; veins brownish yellow, darker along cord. Venation: Sc long,  $Sc_1$  ending about opposite three-fourths  $R_s$ ;  $R_2$  present, subequal to  $R_{1+2}$ ; cell  $M_2$  open by atrophy of basal section of  $M_3$ ; m-cu about its own length beyond the fork of M.

Abdomen dull black, ninth segment obscure yellow, the styli black. Ovipositor with cerci long and slender, sclerotized, gently upcurved to the acute tips. Male hypopygium (Plate 3, fig. 24) with the tergite, *t*, transverse, narrowed outwardly, posterior border truncate. Basistyle, *b*, unusually compact, suboval, the outer lateral angle produced into a stout spine that is directed inwardly. Three dististyles, *d*, all simple; outer style a slender blackened rod, the short terminal point recurved, the expanded base produced into a still smaller point with two strong spinoid setæ; intermediate style stoutest, the base broad, bearing a single strong seta on its lateral extension, the outer head blackened, its

shape as figured; inner style a narrow yellow blade, the tip obtuse. Phallosome, *p*, distinctive, ædeagus a broad central yellow structure, the outer third divided into two slender spines that lie generally parallel to one another, their tips slightly incurved; body of ædeagus before the fork with three pairs of long setæ.

*Habitat*.—India (Assam).

Holotype, male, Rupa, Kameng, Northeast Frontier Agency, altitude 5,200 feet, May 2, 1961 (*Schmid*). Allotopotype, female, pinned with type. Paratopotypes, 1 male, 1 female.

The present fly requires comparison with no other generally similar Eriopterine crane flies. The conspicuous polished body pattern and leg coloration separate it from other apparently related species in the subgenera *Progonomyia*. The genus *Dasy-mallomyia* Brunetti, with the legs conspicuously hairy, is more distantly related.

#### Subgenus **RAMAGONOMYIA novum**

Characters generally as in *Progonomyia* in the retention of the vein  $R_2$ , differing in other features of venation and especially in hypopygial structure. Wings (Plate 1, fig. 8) with the anterior arculus lacking or only vaguely preserved. Male hypopygium (Plate 3, figs. 25, 26) with the apex of basistyle produced into a flattened plate (*bisiculifera*) or slender spine (*protensa*). Two dististyles, the inner one complex, as figured. Ædeagus extended directly caudad into a point, not bent laterad or recurved as in *Progonomyia* or *Protogonomyia*.

Type of subgenus: *Gonomyia* (*Ramagonomyia*) *protensa* Alexander. Oriental. *G. (R.) bisiculifera* Alexander likewise belongs here, both species presently being known only from Sikkim. The male hypopygium of *protensa* is shown (Plate 3, fig. 26); *bisiculifera* (Plate 3, fig. 25).

*Progonomyia*, *Sivagonomyia* and *Ramagonomyia* are the only members of the genus that have vein  $R_2$  (*r* of some authors) preserved, the other close allies, *Ellipteroides* and *Protogonomyia*, having this element atrophied. *Progonomyia* is represented by numerous species in the Neotropical and southern Nearctic regions [Alexander, C. P., *Rev. Entomol.* **18** (1947) 83–84]. A small number of further species in South Africa that have been referred to *Progonomyia* may not belong here, as has been suggested by Edwards [Trans. Soc. British Ent., Part 1 **5** (1938) 106] and may be found to pertain to the present group. I lack ade-

quate materials of the African species to decide this question [Alexander, C. P., South African Animal Life, Lund University Expedition 1950–1951. Diptera (Nematocera) Tipulidæ 10 (1964) 381–387]. Such African species have both the anterior arculus and vein  $R_2$  distinctly preserved.

**GONOMYIA (RAMAGONOMYIA) BISICULIFERA** Alexander.

Plate 3, fig. 25.

*Gonomyia (Progonomyia) bisiculifera* ALEXANDER, Jour. N. Y. Ent. Soc. 71 (1963) 73–74.

Type—male, Yugang, Sikkim, altitude 5,700 feet, May 14, 1959.

Male hypopygium (Plate 3, fig. 25).

**GONOMYIA (RAMAGONOMYIA) PROTENSA** Alexander. Plate 1, fig. 8; Plate 3, fig. 26.

*Gonomyia (Progonomyia) protensa* ALEXANDER, Jour. N. Y. Ent. Soc. 71 (1963) 75.

Type—male, Manu, Sikkim, altitude 4,920 feet, May 10, 1959. Venation (Plate 1, fig. 8); male hypopygium (Plate 3, fig. 26).

#### Subgenus **IDIOCERA** Dale

**GONOMYIA (IDIOCERA) ACAENOPHALLOS** sp. nov. Plate 3, fig. 27; Plate 4, fig. 38.

General coloration of mesonotum gray, patterned with brown; proximal antennal segments yellow; femora obscure yellow; wings light yellow with a restricted but conspicuous brown spotted pattern; male hypopygium with the three dististyles of distinctive conformation; ædeagus stout, on the convex outer margin with a conspicuous blackened flange that is extended into a strong curved black spine.

*Male*.—Length, about 7.5 millimeters; wing, 6.5; antenna, about 1.4.

Rostrum dark brown; palpi black. Antennæ with scape and pedicel light yellow, flagellum brown; flagellar segments long-oval, the outer ones still more lengthened, with conspicuous verticles. Head brownish gray.

Pronotum brownish gray, yellowed laterally. Mesonotal præscutum gray, the lateral borders vaguely more yellowed, disk with vague indications of two diffuse brown stripes on posterior half, the lateral pair barely indicated, pseudosutural foveæ brownish black; scutum gray, lobes vaguely more darkened; scutellum brownish gray, posterior border more yellowed; mediotergite brownish gray, the lateral borders and pleurotergite obscure yel-



low. Pleura light brown, posterior sclerites yellow. Halteres with basal half of stem weakly infuscated, outwardly light yellow, including the knob. Legs with fore coxæ dark brown; trochanters brownish yellow, remaining coxæ and trochanters yellow; femora obscure yellow; tibiæ obscure yellow, tips very narrowly darkened; basitarsi yellowed, tips and remainder of tarsi brownish black. Wings (Plate 3, fig. 27) light yellow with a restricted but conspicuous brown spotted pattern, the stigma largest, oval; small isolated brown spots at origin of Rs, cord, fork of  $M^{1+2}$ , arculus, and at tips of all outer longitudinal veins excepting Sc and  $R_5$ ; veins yellow, conspicuously dark brown in the patterned parts. Venation: Sc short,  $Sc_1$  ending about opposite one-fifth to one-sixth Rs; tips of veins  $R_{1+2}$  and  $R_3$  at margin approximated but not contiguous; cell  $R_3$  large, cell 2nd  $M_2$  about one-half longer than its petiole; m-cu about one-half times its length before the fork of M.

Abdomen dark brown, the extreme posterior borders of the more proximal tergites vaguely paler, of the sternites more broadly so; hypopygium brown. Male hypopygium (Plate 4, fig. 38) with outer lobe of basistyle, *b*, pale, stout, tip obtuse, the inner apical angle produced into a microscopic blackened point. Three dististyles, *d*, the outer style with stem slender, bifid at apex, the longer slender blade produced into a point in the axil near base; intermediate style a somewhat shorter and stouter rod, at apex extended into a long black spine, with a smaller similar spine at its base that is directed backward, the two spines forming a straight angle; inner style subequal in length and diameter to the last, at its tip with a slightly recurved black spine, base with several strong setæ. Phallosome, *p*, unique; ædeagus long and conspicuous, appearing as a stout gently curved rod, on the convex upper surface at near midlength bearing a blackened flange that is extended into strong curved black spine, the flange more basally with the margin microscopically serrulate; apex of ædeagus beneath with two small acute points and a single very long pale seta.

*Habitat*.—India (Assam).

Holotype, male, Bhairabkunda, Kameng, Northeast Frontier Agency, altitude 700 to 1,000 feet, March 8, 1961 (*Schmid*).

*Gonomyia (Idiocera) acaenophallos* is entirely different from all other known members of the subgenus in the hypopygial structure, especially the somewhat remarkable ædeagus, as described, and which has suggested the specific name.

GONOMYIA (IDIOCERA) ACIFURCA Alexander.

Plate 3, fig. 29; Plate 4, fig. 41.

*Gonomyia (Idiocera) acifurca* ALEXANDER, Ann. Mag. Nat. Hist. (12)  
7 (1954) 899-901.

The types were from Nuristan, East Afghanistan. Other records include Pakistan, in the Northwest Frontier Province, Le Vallee, July 28, 1953 (*Schmid*) and Salf-ul-Maluk Sur, altitude 11,000 feet, July 2, 1953 (*Schmid*) and Kumaon, India, at Gangrea, Pauri Gahrwal, altitude 10,000 feet, June 15, 1958 (*Schmid*).

Venation (Plate 3, fig. 28). Male hypopygium (Plate 4, fig. 39) with the basistyle, *b*, short and compact, the outer apical lobe exceeding it in length, appearing as a dusky club with abundant setæ on outer third. Three dististyles, *d*; the outer with stem slender, unequally bifid into an elongate outer arm and a short stout inner one; intermediate style slightly shorter than the lobe of the basistyle, appearing as two long slender blackened spines from a short common base; inner style a little longer, a simple slender rod, tip acute, outer margin of apical fourth microscopically spiculate, lower edge of outer half with a row of long erect bristles. Ædeagus flattened, at apex produced into a slender beak, lower part of outer half with numerous setæ.

GONOMYIA (IDIOCERA) COHERIANA Alexander.

Plate 4, fig. 40.

*Gonomyia (Idiocera) coheriana* ALEXANDER, Jour. N. Y. Ent. Soc. 66  
(1958) 164-165.

Type—male, Parewavir, Nepal, March 26, 1957 (*E. I. Coher*).  
Male hypopygium (Plate 4, fig. 40).

GONOMYIA (IDIOCERA) FORCOSA sp. nov.

Plate 3, fig. 29; Plate 4, fig. 41.

General coloration of thorax gray, præscutum with two brownish gray stripes, posterior sclerites of notum and the pleura variegated gray and brown; proximal antennal segments yellow, remainder brown; legs yellow, outer tarsal segments brown; wings yellowed, restrictedly patterned with brown in the radial field, with further narrow brown seams along cord and elsewhere; abdomen brown, posterior borders of segments narrowly yellow; male hypopygium with outer lobe of basistyle elongate; three dististyles, all bifurcate, the outer style very deeply so, intermediate style unequally lobed, inner style bispinous; ædeagus slender, apex obtuse.

*Male*.—Length, about 6 to 6.5 millimeters; wing, 6.8 to 7; antenna, about 1.2 to 1.3.

*Female*.—Length, about 8 to 8.5 millimeters; wing, 7 to 8.

Rostrum brownish gray; palpi brownish black. Antennæ with proximal three or four segments light yellow, remainder brown; flagellar segments elongate, with a dense white pubescence and longer verticils. Head yellow, center of vertex light gray.

Cervical region dark brown. Pronotum chiefly clear light yellow. Mesonotal præscutum with disk gray, with two brownish gray intermediate stripes that are widened behind, humeral and lateral borders light yellow; posterior sclerites of notum brownish gray, scutal lobes patterned with darker brown, posterior border of scutellum dull orange, mediotergite bordered laterally with yellow, pleurotergite light yellow variegated by pale brown, especially on the ventral katapleurotergite. Pleura above gray, variegated with brown, ventrally pale brown with a broad light yellow longitudinal stripe that includes the fore coxæ, dorsal sternopleurite, ventral pteropleurite, meron and metapleura. Halteres with stem yellow, knob brown. Legs with coxæ yellow, bases of middle and hind pairs narrowly pale brown; trochanters yellow; remainder of legs yellow, terminal tarsal segments brown to brownish black. Wings (Plate 3, fig 29) yellowed, clearer yellow in the prearcular and costal fields; stigma dark brown; a paler brown area in outer half of cell  $R_3$  and more narrowly in cell  $R_5$ ; narrow brown seams at origin of  $R_s$ , cord and outer medial fork; veins yellow, brownish black in the darkened areas at cord and fork of  $M$ . Venation:  $Sc_1$  ending about opposite mid-length of  $R_s$ ; veins  $R_{1+2}$  and  $R_3$  strongly approximated to nearly contiguous at margin, virtually closing cell  $R_1$ .

Abdominal tergites dark brown, very sparsely pruinose, posterior borders narrowly light yellow; sternities paler brown with still narrower yellow outer margins; hypopygium obscure yellow. Male hypopygium (Plate 4, fig. 41) with outer lobe of basistyle,  $b$ , very long, about three-fourths the remainder. Three dististyles,  $d$ , all forked; outer style with base stout, before midlength deeply bifurcate, the outer arm a blackened ribbonlike blade that narrows very gradually into a long terminal spine, inner arm a trifle shorter, appearing as a slender gently curved black spine that narrows very gradually to the acute tip; intermediate style subequal in length, very unequally bifurcate, the outer arm a slender rod that is nearly as long as the base, tip weakly acute, inner arm very short and broad, tip emarginate, the angle a small point; inner style shortest, appearing chelate, base shorter, arms subequal, ap-

pearing as black spines, the mesal one with about six scattered long setæ. Phallosome, *p*, with ædeagus slender, slightly more constricted before the obtuse cuplike apex.

*Habitat*.—India (Assam).

Holotype, male, Shergaon, Kameng, Northeast Frontier Agency, altitude 6,400 feet, May 8, 1961 (*Schmid*). Allotopotype, female. Paratopotypes, 5 of both sexes, with the types; paratypes, 2 males, 2 females, Bilo La, Kameng, altitude 5,800 feet, June 9, 1961.

Other regional members of the subgenus having the wings patterned and with the inner dististyle of the male hypopygium bispinous include *Gonomyia* (*Idiocera*) *paleuma* Alexander, *G. (I.) kashongensis* sp. nov., *G. (I.) magra* Alexander, *G. (I.) maharajah* Alexander, *G. (I.) terribilis* sp. nov., and some others, all differing among themselves in hypopygial characters.

**GONOMYIA (IDIOCERA) KASHONGENSIS** sp. nov.      Plate 3, fig. 30; Plate 4, fig. 42.

Size medium (wing of male to 6 millimeters); mesonotum gray, præscutum with two brown intermediate stripes; basal segments of antennæ yellow; femora and tibiæ brownish yellow; wings yellow, conspicuously patterned with brown, including the costal border and most of cells  $R_3$  and  $R_4$ ; male hypopygium with the outer dististyle pale, irregular in outline; intermediate style profoundly bifid, the arms unequal, very long, tips pointed; inner style bifid, the inner arm a long slender spine.

*Male*.—Length, about 5 to 5.5 millimeters; wing, 5.5 to 6; antenna, about 1.2 to 1.3.

*Female*.—Length, about 6 to 6.5 millimeters; wing, 6.5 to 7.

Rostrum brownish black; palpi black. Antennæ with proximal three or four segments light yellow, succeeding segments black, oval, shorter than their verticils. Head light yellow, center of posterior vertex gray, posterior genæ brown.

Pronotum light yellow, with a narrow brown central area. Mesonotal præscutum light gray with two narrow brown intermediate stripes, paler to virtually obsolete on anterior half, lateral stripes barely indicated; scutum gray, each lobe with a darkened center, posterior callosities yellow, central area obscure orange with a median brown line that extends caudad onto the otherwise yellowish orange scutellum; mediotergite gray, lateral margins light yellow, pleurotergite yellow above, patterned with brown, ventrally with a circular pale spot. Pleura conspicuously patterned, including a broad pale yellow ventral stripe that is bor-

dered above and below by brown; dorsopleural membrane light yellow. Halteres dark brown, base of stem yellowed. Legs with coxæ yellow, anterior faces of fore and hind pairs infuscated; trochanters brownish yellow; femora and tibiæ brownish yellow, basitarsi brownish yellow, outer tarsal segments black. Wings (Plate 3, fig. 30) with the ground yellow, clearer basally, conspicuously patterned with brown, including cells C and Sc, with extensions into cells  $R_3$  and  $R_4$ ; stigma darker brown; more restricted brown clouds over cord, outer medial forks and outer wing margin from vein  $M_{1+2}$  to beyond 2nd A, including the outer ends of veins; veins light yellow, dark brown in the patterned parts. Longitudinal veins beyond general level of origin of Rs with conspicuous trichia, including also the outer ends of both anal veins. Venation: Sc relatively short,  $Sc_1$  ending about opposite one-fifth to one-third Rs,  $Sc_2$  close to the origin; veins  $R_{1+2}$  and  $R_3$  approximated at margin, the distance between them on costa less than one-fourth  $R_3$ ; m-cu about one and one-half times its length before the fork of M.

Abdomen dark brown, the posterior borders of intermediate tergites narrowly yellow, sternites paler brown; hypopygium brown to dark brown. Male hypopygium (Plate 4, fig. 42) distinctive. Basistyle, *b*, terminating in two fleshly lobes, the lateral one much shorter, the larger lobe more than one-half the length of the longest dististyle. Three dististyles, *d*, the outer a bifid yellow blade, its inner arm with a curved black spine and a smaller bidentate lobe; intermediate style longest, blackened, forking shortly beyond base into two flattened unequal blades, the outer arm extended into a long point, about one-half longer than the inner arm; inner style with a fleshy lobe, its outer margin with a long slender spine. Phallosome, *p*, with ædeagus unusually slender, straight, the apex bent at a right angle.

*Habitat*.—India (Assam).

Holotype, male, Sirhoi Kashong, Manipur, altitude 6,000 feet, June 7, 1960 (*Schmid*). Allotopotype, female, pinned with type. Paratopotypes, 7 of both sexes, with the types.

In the details of structure of the male hypopygium, *Gonomyia* (*Idiocera*) *kashongensis* is quite distinct from the other regional species having the inner style bifid, including *G. (I.) magra* Alexander, *G. (I.) maharajah* Alexander, *G. (I.) myriacantha* Alexander, *G. (I.) paleuma* Alexander, and others described in the present paper.

GONOMYIA (IDIOCERA) LAMIA sp. nov.

Plate 3, fig. 31; Plate 4, fig. 43.

General coloration of mesonotal præscutum and scutum brownish black, pruinose; pleura dark brown, striped longitudinally with whitish; femora brownish yellow; wings brownish yellow, very restrictedly patterned with brown; male hypopygium with three dististyles, the outer one very unequally bifid, intermediate style extended into a long straight spine; ædeagus with two small nearly apical points.

*Male*.—Length, about 5 millimeters; wings, 5.5.

Head broken. Pronotum and pretergites yellowed. Mesonotal præscutum and scutum brownish black, pruinose, lateral præscutal borders yellowed, pseudosutural foveæ reddish brown; scutellum brown basally, apex broadly yellow; mediotergite brown, the anterolateral angles yellow, pleurotergite yellow. Pleura dark brown, with a conspicuous whitened longitudinal stripe extending from behind the fore coxæ to base of abdomen, widened behind to include the posterior pleurites, dorsal pteropleurite more yellowed. Halteres yellow. Legs with coxæ darkened basally, apices yellowed; trochanters yellow; remainder of legs brownish yellow, tips of basitarsi and remaining tarsal segments brownish black. Wings (Plate 3, fig. 31) narrow, brownish yellow, base and costal region clearer yellow; stigma oval, brown; veins yellow, the cord, including m-cu, dark brown. Longitudinal veins beyond general level of origin of Rs with macrotrichia, lacking on  $R_3$ ; basad of ocrd trichia lacking on M and all but the tips of the anals. Venation: Sc relatively short,  $Sc_1$  ending about opposite one-fourth Rs,  $Sc_2$  very far retracted; vein  $R_3$  nearly erect, at margin separated from  $R_{1+2}$  by a distance about equal to two-thirds its length; cell 2nd  $M_2$  about one-third longer than its petiole; m-cu nearly twice its length before fork of M.

Abdominal segments brown, their posterior borders narrowly light yellow; hypopygium brownish yellow. Male hypopygium (Plate 4, fig. 43) with apical lobe of basistyle, *b*, about one-half the length of longest dististyle. Three dististyles, *d*; outer style glabrous, very unequally bifid, the long outer arm slender, inner blade only about one-fifth as long; intermediate style longest, appearing as a stout nearly straight rod from a more expanded base, outer fifth suddenly narrowed into a long acute spine, near outer end almost to tip of spine with several very long yellow setæ; inner style small, slender, in length exceeding one-fourth the intermediate style, with about eight setæ along margin. Ædeagus, *a*, re-

lately short but slender, terminating in two very small recurved teeth, the stem with a series of long delicate setæ over virtually the whole length.

*Habitat.*—India (West Bengal).

Holotype, male, Git Dabling, altitude 4,900 to 5,100 feet, September 13, 1959 (*Schmid*).

In its hypopygial structure, *Gonomyia (Idiocera) lamia* is very different from all other regional members of the typical subgenus, being more as a *Gonomyia (Euptilostena) moghalica* Alexander. In this latter species the dististyle and ædeagus are somewhat the same, differing in details, including the obtuse apex of the intermediate style.

GONOMYIA (IDIOCERA) LEDA sp. nov.

Plate 3, fig. 32; Plate 5, fig. 44.

General coloration of thorax gray, the præscutum with two intermediate brown stripes, pleura striped brown and yellow; legs obscure yellow; wings pale brown with a spotted darker brown pattern, the areas margined with whitish hyaline; Sc long; male hypopygium with a long basal spine on outer dististyle, inner style simple; ædeagus slender, apex decurved.

*Male.*—Length, about 5.5 millimeters; wing, 6.

Rostrum brownish black; palpi black. Antennæ brown, scape paler. Head grayish brown.

Pronotum brownish gray, scutum laterally and the scutellum whitened. Mesonotum brownish gray, præscutum with two intermediate brown stripes, scutal lobes similarly darkened. Pleura dark brown with a longitudinal yellow stripe extending from the fore coxæ across the dorsal sternopleurite, more expanded on posterior sclerites. Halteres with stem yellow, knob dark brown. Legs with coxæ yellow, darkened basally; trochanters yellow; remainder of legs obscure yellow, outer tarsal segments darker. Wings (Plate 3, fig. 32) very pale brown with a spotted darker brown pattern, the areas margined with whitish hyaline; darker markings include the stigma, arculus, origin of Rs and Sc<sub>2</sub>, cord, tip of Sc<sub>1</sub>, and m; more extensive paler brown marginal clouds in outer radial field, including tips of R<sub>4</sub> and R<sub>5</sub>, interconnected internally, leaving a small ground area in cell R<sub>4</sub>; costal cell virtually clear, on one wing of type with one or two very small spots at near midlength of cell C; no darkenings in cells Cu or the anals; veins light brown, darker brown in the patterned areas, more yel-

lowed in the costal interspaces. Venation: Sc long, Sc<sub>1</sub> ending about opposite two-thirds Rs, Sc<sub>2</sub> opposite origin of the long Rs; vein R<sub>3</sub> oblique, fused apically with R<sub>1+2</sub> closing cell R<sub>1</sub>; tip of R<sub>4</sub> bent very strongly cephalad at three-fourths the length; m transverse, at junction with free tip of M<sub>3</sub> with a short spur directed basad; m-cu about twice its length before fork of M.

Abdominal tergites dark brown, sternites and hypopygium slightly paler brown. Male hypopygium (Plate 5, fig. 44) with outer apical angle of basistyle, *b*, rounded, not produced into a lobe as in *similior*. Outer dististyle, *d*, appearing as a blackened hook with a long straight black spine at base, outer margin of the hook in cases produced into a low point; intermediate style glabrous, unequally bifid, the outer arm a long darkened ribbon, the tip acute, inner arm a short broad blackened subtriangular blade, its outer margin at near midlength produced into a long spine, the apex less acute; inner style a simple slender rod, narrowed gradually into a long gently curved spine, surface of style with long setæ. Phallosome, *p*, with ædeagus slender, tip decurved, the outer half with about four scattered delicate setæ.

*Habitat*.—Pakistan.

Holotype, male, Kaghan, Northwest Frontier Province, altitude 6,688 feet, June 27, 1953 (*Schmid*).

The most similar species is *Gonomyia (Idiocera) similior* Alexander, which likewise has the darkened areas of the wing narrowly bordered by whitish. This differs from the present fly in the wing pattern, including darkened areas in cell Sc and at end of vein 2nd A, and in all details of structure of the male hypopygium.

**GONOMYIA (IDIOCERA) PETILIS** Alexander.

Plate 5, fig. 45.

*Gonomyia (Idiocera) petilis* ALEXANDER, Philip. Jour. Sci. **86** (1957) 434—435.

Type—male, Amlekhgang, Nepal, altitude 1,690 feet, May 29, 1956 (*E. I. Coher*). A second male was taken at Nayagaon, Nepal, October 13, 1957, by Coher.

Male hypopygium (Plate 5, fig. 45).

**GONOMYIA (IDIOCERA) SERRATISTYLA** sp. nov.

Plate 5, fig. 46.

General coloration of mesonotum brown, including a central præscutal stripe; femora and tibiæ brownish yellow; wings brownish yellow, restrictedly patterned with darker; Sc short, Sc<sub>1</sub> opposite origin of Rs; male hypopygium with margin of outer disti-



style serrate, inner style simple, terminating in a long spine.

*Male*.—Length, about 5 millimeters; wing, 4.5; antenna, about 0.7.

Rostrum brownish black; palpi black. Antennæ with scape and pedicel whitened, flagellum brownish black; flagellar segments oval, shorter than the verticils. Head gray above, front and anterior vertex whitened, genæ more infuscated.

Pronotum brownish yellow above, darker on sides. Mesonotal præscutum brownish yellow with a median brown stripe that is expanded on posterior half, lateral stripes indistinct; posterior sclerites of notum dark brown, sparsely pruinose. Pleura dark brown dorsally, broadly reddish brown beneath, dorsopleural membrane pale. Halteres infuscated. Legs with coxæ reddish yellow, fore pair more darkened; trochanters yellow; femora and tibiæ brownish yellow, tarsi darker brown. Wings brownish yellow, clearer yellow in the prearcular and costal fields; a restricted darker pattern includes the pale brown stigma and narrow brownish black seams over the veins that comprise the cord, origin of  $R_s$ , and tip of vein  $R_4$ , outer end of all  $R_4$  weakly darkened; veins light brown, darker in the patterned parts. Venation:  $Sc$  short,  $Sc_1$  ending opposite origin of  $R_s$ ; distance on costa between veins  $R_{1+2}$  and  $R_3$  about one-third the latter vein; tip of vein  $R_4$  upcurved; cell 2nd  $M_2$  longer than its petiole, in cases nearly to twice the length;  $m-cu$  about one and one-half times its length before fork of  $M$ .

Abdominal tergites dark brown, the incisures pale, sternites somewhat lighter brown. Male hypopygium (Plate 5, fig. 46) with apical lobe of basistyle, *b*, stout, tip obtuse with numerous setæ. Outer dististyle, *d*, a simple rod, curved at basal third, the long terminal spine serrulate along lower face; intermediate style profoundly bifid, base short, the long outer arm a glabrous paddle-shaped structure, inner arm terminating in a pendant blackened blade with a slender curved spine on outer margin at its base; inner style a simple rod that narrows outwardly, terminating in a long straight spine, with a few strong setæ. Phallosome, *p*, with ædeagus yellow, elongate, near apex bent at about a right angle.

*Habitat*.—India (Assam).

Holotype, male, Sihai Khulen, Manipur, altitude 4,700 feet, June 25, 1960 (*Schmid*). Paratypes, 2 males, Nongjri, Manipur, altitude 350 feet, April 1, 1960 (*Schmid*).

The paratypes agree well with the type except that the inner arm of the intermediate dististyle of the hypopygium is serrulated. Other regional members of the subgenus that have the inner dististyle simple include *Gonomyia* (*Idiocera*) *absona* Alexander, *G. (I.) coheriana* Alexander, *G. (I.) pergracilis* Alexander, *G. (I.) phallostena* Alexander, *G. (I.) proxima* Brunetti, and others, all differing from the present fly in hypopygial structure, including the nonserrated outer dististyle.

**GONOMYIA (IDIOCERA) SITA** sp. nov.

Plate 3, fig. 33; Plate 5, fig. 47.

General coloration yellow, patterned with dark brown; rostrum and proximal antennal segments yellow; knob of halteres obscure yellow; legs yellowed; wings light yellow, unpatterned; male hypopygium with outer dististyle bifid, the others simple; ædeagus pale, generally parallel-sided, terminating in a slender point.

*Male*.—Length, about 6 millimeters; wing, 5.5.

Rostrum yellow, mouthparts and palpi black. Antennæ with scape and pedicel light yellow, basal segments of flagellum brownish yellow, the outer ones darker brown; verticils exceeding the segments, pubescence white, relatively long and conspicuous. Head light yellow, center of vertex slightly darkened.

Pronotal scutum yellow, narrowly brown medially, scutellum and pretergites light yellow. Mesonotal præscutum with disk covered by confluent light brown stripes, humeral and lateral borders narrowly yellowed; scutal lobes light brown, posterior callosities yellow; scutellum light brown, parascutella light yellow; postnotum brownish yellow, central region of mediotergite weakly darkened. Pleura light brown, with a diffuse pale yellow longitudinal stripe extending from behind the fore coxæ across the dorsal sternopleurite, widely expanded behind; dorsopleural region brown. Halteres with stem darkened, knob obscure yellow. Legs with coxæ and trochanters yellow, fore coxæ slightly darker; remainder of legs yellowed, tips of tibiæ and outer tarsal segments slightly darker. Wings (Plate 3, fig. 33) almost uniformly light yellow, prearcular and costal fields clearer yellow; stigma darker yellow, scarcely indicated; veins light brown, yellowed in the brightened fields. Venation: Sc short, Sc<sub>1</sub> ending about opposite one-fifth Rs, Sc<sub>2</sub> far retracted; R<sub>1+2</sub> and R<sub>3</sub> closely approximated at costa, virtually closing cell R<sub>1</sub>; vein R<sub>3</sub> strongly oblique, without trichia; vein R<sub>4</sub> long, gently arcuated; cell 2nd M<sub>2</sub> longer than its petiole

Abdomen elongate, tergites brown, sternites more yellowed. Male hypopygium (Plate 5, fig. 47) with outer lobe of basistyle, *b*, pale, terminating in a microscopic pale point. Outer dististyle, *d*, unequally bifid at tip, the lateral blade large, triangular, extended into an acute point, inner arm an oval blackened lobe; intermediate style shortest but stout, outer end blackened, with two or three small black spines; inner style a simple rod, its stem very slender, outer third slightly dilated, terminating in a small blackened point. Phallosome with aedeagus pale, the stem generally parallel-sided, the tip a slender point.

*Habitat*.—India (Assam).

Holotype male, Leimatak, Manipur, altitude 1,300 feet, May 30, 1960 (Schmid).

The most similar regional species include *Gonomyia* (*Idiocera*) *proxima* Brunetti and *G. (I.) vayu* sp. nov., all being very different among themselves in hypopygial structure.

**GONOMYIA (IDIOCERA) TERRIBILIS** sp. nov.

Plate 3, fig. 34; Plate 5, fig. 48.

General coloration of thorax gray, præscutum with two intermediate brown stripes, the lateral borders yellowed; pleura dark with a yellow longitudinal stripe; wings yellowed, outwardly patterned with brown; male hypopygium with apical lobes of basistyle; three dististyles, all produced into blackened spines, inner style bispinous; aedeagus long and slender, tip recurved.

*Male*.—Length, about 7.5 millimeters; wing 7.

Rostrum and palpi black. Antennæ with scape yellow, blackened beneath, pedicel clear yellow, proximal two flagellar segments pale brown, remainder black; segments elongate. Head gray, anterior orbits broadly light yellow.

Pronotum pale yellow, dorsum of scutum more obscured, pretergites yellow. Mesonotal præscutum with lateral borders and humeri yellow, disk gray with two brown stripes that are faintly indicated on anterior half, posteriorly darker and widened; scutum obscure yellow, lobes brownish gray; scutellum brown, posterior border obscure yellow; mediotergite gray, posterior half darker, antero-lateral areas yellow, confluent with an area on the dorsal pleurotergite, remainder of the latter brown, variegated with yellow. Pleura dark brown with a conspicuous longitudinal light yellow stripe that includes the central third of fore coxa, dorsal sternopleurite, widened behind on ventral pteropleurite, dorsal meron and metapleura; dorsopleural membrane yellowed. Halteres yellow.

low, base of stem weakly darkened, knob dark brown. Legs with fore coxæ brown, patterned as described; middle and hind coxæ dark brown basally, apices yellow, the middle pair extensively so; trochanters obscure yellow; femora yellow, tips vaguely brown; tibiæ yellow, tips narrowly brownish black; tarsi brown, darker outwardly. Wings (Plate 3, fig. 34) with the ground yellow, base clearer, disk conspicuously patterned with brown, including especially the darker stigma and broad tips of cells  $R_3$  and  $R_4$ ; narrow brown areas at arculus, origin of  $R_s$ , cord and very inconspicuously on veins  $M_3$ ,  $M_4$ ,  $Cu_1$  and 2nd A; veins yellow, dark brown in the patterned areas. Venation:  $Sc_1$  ending just before midlength of  $R_s$ ,  $Sc_2$  retracted; m-cu more than its length before the fork of M.

Abdomen dark brown. Male hypopygium (Plate 5, fig. 48) with the basistyle, *b*, terminating in two short lobes, the inner one somewhat more slender, with long yellow setæ throughout its length, the broader outer lobe with apex glabrous and more broadly obtuse. All three dististyles, *d*, bearing conspicuous black spines; outer style longest, the distal half slightly expanded into a yellow blade, narrowed at tip into an acute spine, inner margin with two subequal black spines, one at near one-fourth the length, the other about at two-thirds; intermediate style shorter, entirely blackened, narrowed gradually into a long terminal point, the inner margin with two spines, the outer one shorter than the terminal point, the basal spine at near midlength, very long and slender; inner style smallest, divided into two slightly unequal spines, near bases of these with several long yellow setæ. Phallosome, *p*, with the ædeagus a long slender rod, its tip slightly decurved; outer surface with numerous long yellow setæ extending from base almost to apex.

*Habitat*.—India (Assam).

Holotype, male, Shergaon, Kameng, Northeast Frontier Agency, altitude 6,300 feet, May 7, 1961 (*Schmid*).

The very conspicuous male hypopygium of this fly readily separates it from all other known members of the subgenus. The regional species having patterned wings and with the inner dististyle of the hypopygium bispinous include *Gonomyia* (*Idiocera*) *acifurca* Alexander, *G. (I.) furcosa* sp. nov., *G. (I.) kashongensis* sp. nov., *G. (I.) magra* Alexander, *G. (I.) maharajah* Alexander, *G. (I.) myriacantha* Alexander, and a few others, all quite distinct among themselves in hypopygial characters.

GONOMYIA (IDIOCERA) VAYU : nov.

Plate 4, fig. 35; Plate 5, fig. 50.

General coloration of mesonotum brownish gray, pleura and pleurotergite light yellow; rostrum brownish black; antennæ with basal segments yellow; femora yellow; wings yellowed, costal and prearcular fields clear light yellow, Sc relatively short; male hypopygium with apex of outer lobe of basistyle terminating in a microscopic black spine; outer dististyle bifid; ædegeus stout, parallel-sided, apex gently emarginate.

*Male*.—Length, about 5 millimeters; wing, 4.8.

Rostrum and palpi brownish black. Antennæ with scape and pedicel yellow; flagellum broken. Head light yellow, center of vertex pale brown.

Pronotal scutum obscure yellow, indistinctly patterned with pale brown, including central and lateral areas; scutellum and pretergites light yellow. Mesonotal præscutum brownish gray with vaguely indicated darker brown intermediate stripes, pseudosutural foveæ reddish brown; posterior sclerites of notum brown, sparsely pruinose. Pleura and pleurotergite light yellow, dorso-pleural region slightly darker. Halteres with stem light brown; knob broken. Legs with coxæ and trochanters yellow; femora yellow; remainder of legs broken. Wings (Plate 4, fig. 35) yellowed, prearcular and costal fields clear light yellow; veins very pale brown, yellow in the brightened fields. Venation: Sc relatively short, Sc<sub>1</sub> ending about opposite one-seventh Rs, Sc<sub>2</sub> far retracted; veins R<sub>1+2</sub> and R<sub>3</sub> slightly separated at costa, cell R<sub>3</sub> large; cell 2nd M<sub>2</sub> a little longer than its petiole; m-cu about twice its length before fork of M.

Abdominal tergites brown, sternites and hypopygium more yellowed. Male hypopygium (Plate 5, fig. 50) with outer lobe of basistyle, *b*, terminating in a microscopic blackened spine, inner lobe very slender, with about three long setæ. Outer dististyle, *d*, with outer half expanded into two oval blades, tips obtuse, apical angle of outer blade farther extended into a narrow hyaline lobe; intermediate style simple, smooth, gently curved, the blackened apex narrowed into an acute spine; inner style longest, simple, a long slender rod with tip narrowed into a long black spine, inner margin of rod with about ten scattered erect setæ. Phallosome, *p*, with ædeagus stout, parallel-sided, apex gently emarginate.

*Habitat*.—India (Assam).

Holotype, male, Bhairabkunda, Kameng, Northeast Frontier Agency, altitude 700 feet, March 3, 1961 (*Schmid*).

Other generally similar regional species include *Gonomyia* (*Idiocera*) *displosa* Alexander, *G. (I.) petilis* Alexander, *G. (I.) phallostena* Alexander, *G. (I.) myriacantha* Alexander, and some others, all quite distinct in the structure of the male hypopygium.

#### Subgenus PTILOSTENODES Alexander

GONOMYIA (PTILOSTENODES) CAPITULA sp. nov. Plate 4, fig. 36; Plate 5, fig. 49.

General coloration black, variegated with yellow on head and especially on the thoracic pleura; antennæ, halteres and legs black; wings whitish hyaline;  $Sc_1$  ending opposite origin of Rs,  $Sc_1$  very long, subequal to Rs, cell 2nd  $M_2$  less than one-half its petiole, cell 2nd A relatively long; male hypopygium with inner apical lobe of basistyle dilated at outer end.

*Male*.—Length, about 4.3 millimeters; wings, 5.2; antenna, about 1.

Rostrum dark brown; palpi black. Antennæ black throughout; flagellar segments oval, the outer segments gradually smaller, slightly exceeding the verticils. Head black, the anterior vertex and broad anterior orbits light yellow.

Pronotum black, the enlarged pretergal region light yellow. Mesonotal præscutum with disk dark gray, humeral and lateral regions blackened; scutum dark gray, median region yellowed; scutellum gray basally, variegated with yellow behind; postnotum dark gray. Pleura polished black on anepisternum and ventral sternopleurite, the remainder, including pleurotergite, light yellow. Halteres blackened. Legs with coxæ dark gray; trochanters grayish black; remainder of legs black. Wings (Plate 4, fig. 36) whitish hyaline; veins brown. Venation:  $Sc_1$  ending opposite origin of Rs,  $Sc_2$  far retracted,  $Sc_1$  alone subequal to Rs; outer section of vein  $R_5$  long, more than twice Rs; cell 2nd  $M_2$  less than one-half its petiole; m-cu more than its own length before fork of M; vein  $Cu_2$  virtually lacking, indicated only by a vague fold near base; cell 2nd A relatively long. Macrotrichia on outermost radial and medial veins, including also the outer third of  $Cu_1$ .

Abdominal tergites, including hypopygium, dull black, sternites paler. Male hypopygium (Plate 5, fig. 49) with outer apical lobe

of basistyle, *b*, broadly obtuse, with dense long curved setæ continued along mesal face of lobe. What is construed as being an inner apical lobe of the basistyle is an elongate rod, apex dilated, outer margin of rod with about eight strong bristles. Outer dististyle, *d*, longest, deeply forked beyond midlength, outer branch about one-half longer than the inner; inner style smallest, appearing as a gently curved horn that narrows to the acute tip. Phallosome, *p*, with ædeagus terminating in a small apiculate point, outer end with relatively few setæ.

*Habitat*.—India (Sikkim).

Holotype, male, Chateng, altitude 8,700 feet, June 12, 1959 (Schmid).

*Gonomyia* (*Ptilostenodes*) *capitula* is most readily told from *G. (P.) stenomera* sp. nov., by the hypopygial structure, particularly the dilated apex of the inner lobe of the basistyle. *G. (P.) pakistanensis* Alexander, the most westerly known member of the subgenus, has the venational details distinct.

**GONOMYIA (PTILOSTENODES) STENOMERA** sp. nov. Plate 4, fig. 37; Plate 5, fig. 51.

Generally as in *capitula*, differing chiefly in hypopygial characters, particularly the basistyles.

*Male*.—Length, about 4 millimeters; wing, 5; antenna, about 1.

*Female*.—Length, about 4.5 millimeters; wing, 5 to 5.2.

Rostrum brown, palpi and antennæ black, the latter relatively long. Head brownish black, anterior vertex and orbits yellow.

Pronotum chiefly yellow. Mesonotum black on anterior border of præscutum, the remainder sparsely gray pruinose, patterned with yellow at midregion of scutum, posterior scutal callosities, and the scutellum. Pleura chiefly light yellow, conspicuously patterned with black on propleura and anepisternum, vaguely extended to the wing root; ventral sternopleurite black, gray pruinose, midsternal region yellow. Halteres and legs brownish black to black, coxæ pruinose. Wings (Plate 4, fig. 37) whitish hyaline; veins brown. Venation:  $Sc_1$  ending shortly before origin of  $Rs$ ,  $Sc_2$  far retracted; petiole of cell 2nd  $M_2$  approximately three times the cell.

Abdomen dull brownish black, dorsopleural membrane and adjoining margins of sclerites yellow. Male hypopygium (Plate 5, fig. 51) generally as in *capitula*, differing evidently in the conformation of the inner lobe of basistyle, *b*, which is slender, tapering very gradually to the narrowly obtuse apex, at and near tip

with about eight setæ, with more numerous pale punctures that lack setæ almost to base of lobe. Other minor differences in the basistyle and dististyles, as the fewer setæ at apex of the outer lobe of the former.

*Habitat.*—India (Sikkim).

Holotype, male, Shingbo, altitude 10,400 feet, June 30, 1959 (*Schmid*). Allotopotype female, pinned with type. Paratopotypes, several of both sexes, mostly in poor condition and mounted on a single microscope slide with the types. The entire series had been seriously damaged by fungus action.

#### Subgenus LIPOPHLEPS Bergroth

GONOMYIA (LIPOPHLEPS) AMBLYSTYLA sp. nov.

Plate 5, figs. 52, 64.

Allied to *incompleta*; mesonotal præscutum and scutal lobes brownish gray, pleura yellow, patterned with brown; antennæ with scape and pedicel yellow, flagellum black; legs dark brown; wings pale brown, prearcular and costal regions slightly more yellowed, Sc<sub>1</sub> ending some distance before origin of Rs, branches of latter strongly divergent, cell R<sub>4</sub> very extensive at margin; male hypopygium with a single dististyle, its apex obtuse and unblackened, with a strong black spine at near midlength; phallosome large and conspicuous, apex bilobed.

*Male.*—Length, about 3 to 3.2 millimeters; wing, 3.5 to 3.8.

*Female.*—Length, about 4 millimeters; wing, 4.

Rostrum brownish yellow, palpi black. Antennæ with scape and pedicel yellow, flagellum black; flagellar segments long-cylindrical, with abundant very long erect white setæ. Front yellowed, vertex gray.

Pronotum and pretergites yellow. Mesonotal præscutum and scutal lobes brownish gray; median region of scutum and posterior borders of scutal lobes yellowed; scutellum yellow, parascutela more obscure; mediotergite dark brown, yellowed laterally, pleurotergite yellow. Pleura, including the dorsopleural membrane, yellow, the mesepisternum and meron more infuscated. Halteres pale brown, base of stem yellowed. Lgs with coxæ and trochanters pale yellow, remainder of legs dark brown. Wings (Plate 6, fig. 52) pale brown, stigma scarcely indicated, prearcular and costal fields slightly more yellowed; veins very pale brown. Venation: Sc<sub>1</sub> ending a distance before origin of Rs about equal to three-fourths Rs, branches of the latter strongly diver-



gent, cell  $R_4$  at margin very extensive, the basal section of  $R_5$  reduced (as shown) or longer; cell 1st  $M_2$  strongly narrowed at base, m-cu at fork of M.

Abdomen light brown above, paler on sternites, hypopygium yellowed. Male hypopygium (Plate 6, fig. 64) with apical lobe of basistyle, *b*, long, subequal to or longer than the dististyle, *d*, which are slightly asymmetrical on the two sides; tip obtuse, on outer margin at or just beyond midlength with a blackened spine that is stouter on one style than on the other. Phallosome, *p*, very large and conspicuous, pale, stem stout, outwardly expanded into broad blades, terminating in two needlelike black spines.

*Habitat*.—India (West Bengal).

Holotype, male, Lingsoka, altitude 3,930 feet, September 7, 1959 (*Schmid*). Allotopotype, female. Paratopotypes, 2 males, pinned with allotype; 1 separate female.

Although it is generally similar to *Gonomyia* (*Lipophleps*) *incompleta* (Brunetti)—synonyms, *G. (L.) insulensis* Alexander; *L. (G.) pusilla* [Lackschewitz (1964) 726], the present fly is distinct in hypopygial characters, especially the pale obtuse apex of the dististyle that bears the usual two fasciculate setæ. In *incompleta* the apex of the dististyle is a slender black spine.

GONOMYIA (LIPOPHLEPS) CURVISTYLA Alexander.

Plate 6, figs. 53, 65.

*Gonomyia* (*Lipophleps*) *curvistyla* ALEXANDER, Jour. N. Y. Ent. Soc. 69 (1961) 126–127.

Type—male, Teri, Teri Garhwal, Kumaon, altitude 2,500 to 5,000 feet, April 16, 1958 (*Schmid*).

Venation (Plate 6, fig. 53); male hypopygium (Plate 6, fig. 65).

GONOMYIA (LIPOPHLEPS) HESTICA sp. nov.

Plate 6, figs. 54, 66.

Size small (wing of male 4 millimeters); rostrum, palpi and antennæ black; mesonotum brown, posterior border of scutellum obscure yellow; legs yellowish brown; wings pale brown, costal border light yellow; male hypopygium generally as in *bicolorata* but with the details distinct.

*Male*.—Length, about 4.5 millimeters; wing, 4; antenna, about 0.9.

Rostrum and palpi black. Antennæ blackened; flagellar segments elongate, the more proximal ones with exceedingly long verticals. Head light yellow, central area of posterior vertex darkened.

Pronotum and pretergites light yellow, sides of notum dark brown. Mesonotal præscutum light brown, vaguely more darkened medially, scutum darker brown; scutellum brown basally, posterior margin obscure yellow; mediotergite pale brown, sides of anterior half yellow. Pleura obscure yellow, patterned with brown and apparently with a narrow whitened longitudinal stripe. Halteres with stem yellow, knob light brown. Legs with coxæ and trochanters yellow, remainder pale yellowish brown, the extreme tip of femur vaguely paler. Wings (Plate 6, fig. 54) pale brown, costal border narrowly pale yellow, interrupted by the slightly darker brown stigma; veins pale brown, more yellowed in the brightened field. Costal fringe long. Venation: Branches of  $R_s$  divergent,  $R_5$  deflected strongly toward the wing tip, cell  $R_4$  at margin very extensive; m-cu shortly before fork of M.

Abdominal tergites and hypopygium brown, sternites more yellowed. Male hypopygium (Plate 6, fig. 66) with dististyles,  $d$ , terminal; outer style a long slender nearly straight blackened rod, the tip obtuse, on mesal face at base with an elongate setiferous cushion; inner style about one-third as long, blackened, the body elongate, with several strong setæ at apex and along lower margin, the more basal of these subtended by a strong point or tooth; outer margin of style at near midlength with a strong spinelike lobe, near tip with two strong setæ. Phallosome,  $p$ , entirely pale, the two outer blades or apophyses subhyaline, tips obtuse, entirely glabrous.

*Habitat*.—India (Assam).

Holotype, male, Chapai, Kameng, Northeast Frontier Agency, altitude 700 feet, February 26, 1961 (*Schmid*).

Other regional species of the subgenus *Lipophleps* that have two radial branches and the male hypopygium of this general type include *Gonomyia* (*Lipophleps*) *ambiens* Alexander, *G. (L.) bicolorata* Alexander and *G. (L.) pallicostata* Alexander, all having the hypopygial details distinct. It is possible that *ambiens* and *pallicostata* may prove to be identical. I have not been able to study an authentic male specimen of *G. (L.) flavomarginata* Brunetti but from the description of color characters of the type it appears to be distinct from the present fly.

**GONOMYIA (LIPOPHLEPS) KAMA** Alexander. Plate 6, figs. 55, 56, 67; Plate 7, fig. 68.

*Gonomyia* (*Lipophleps*) *kama* ALEXANDER, Jour. N. Y. Ent. Soc. 71 (1963) 76–77.

Type—male, Sutol, Pauri Garhwal, Kumaon, altitude 7,250 feet, August 18, 1958 (*Schmid*).

Venation (Plate 6, figs. 55, 56; male hypopygium Plate 6, fig. 67; Plate 7, fig. 68).

**GONOMYIA (LIPOPHLEPS) MIZOENSIS** Alexander. Plate 6, fig. 57; Plate 7, fig. 69.

*Gonomyia (Lipophleps) mizoensis* ALEXANDER, Jour. N. Y. Ent. Soc. 71 (1963) 77–79.

Type—male, Thingsat, Lushai Hills, Mizo District, Assam, altitude 2,000 feet, September 9, 1960 (*Schmid*).

Venation (Plate 6, fig. 57); male hypopygium (Plate 7, fig. 69).

**GONOMYIA (LIPOPHLEPS) NILGIRIANA** Alexander. Plate 6, fig. 58; Plate 7, fig. 70.

*Gonomyia (Lipophleps) nilgiriana* ALEXANDER, Jour. N. Y. Ent. Soc. 69 (1961) 128–129.

Type—Perumalmalai, Madras, South India, altitude 4,000 to 4,500 feet, December 6, 1958 (*Schmid*).

Venation (Plate 6, fig. 58); male hypopygium (Plate 7, fig. 70).

**GONOMYIA (LIPOPHLEPS) SPERATINA** sp. nov. Plate 6, fig. 59; Plate 7, fig. 71.

Size small (wing of male less than 4 millimeters); mesonotal præscutum brownish gray, posterior sclerites of notum yellowed; pleura dark brown with a broad silvery yellow longitudinal stripe; wings very light brown, stigma scarcely differentiated, Sc<sub>1</sub> ending a short distance before origin of Rs; male hypopygium with dististyles terminal in position, outer style a powerful yellow rod that is extended into a long black spine, at near midlength of inner margin with a similar appressed spine; phallosome including three further strong spines.

*Male*.—Length, about 3.5 millimeters; wing, 3.8.

Rostrum and palpi black. Antennæ black, scape and pedicel yellowed above; flagellar verticils very long. Head above extensively yellowed.

Pronotum and pretergites chiefly yellow. Mesonotal præscutum, scutum and base of scutellum brownish gray, posterior scutal callosities and broad margin of scutellum yellow; postnotum chiefly brownish yellow, posterior border of mediotergite narrowly dark brown. Pleura dark brown with a broad silvery yellow longitudinal stripe extending from behind the fore coxæ to the base of abdomen. Halteres yellow, basal half of knob light brown. Legs with coxæ and trochanters obscure yellow; remainder of legs

broken. (Wings (Plate 6, fig. 59) very light brown, prearcular and costal fields light yellow; stigma scarcely differentiated, very pale brown; veins light brown, more yellowed in the brightened fields. Venation:  $Sc_1$  ending a distance before origin of Rs about equal to basal section of vein  $R_5$ ,  $Sc_2$  at its extreme tip; branches of Rs strongly divergent, cell  $R_4$  at margin very extensive, fully three times cell  $R_2$ ; m-cu about one-fifth its length beyond fork of M.

Abdominal tergites and hypopygium brown, sternites paler. Male hypopygium (Plate 7, fig. 71) unusually complex in structure. What appears to represent the tergite, *t*, includes two widely separated fingerlike lobes, their mesal parts with unusually long setæ. Dististyles, *d*, terminal; outer style a powerful yellow rod, strongly curved on outer third, extended into a long black spine, on inner margin at near midlength with a smaller more appressed black spine; inner style elongate, with several long setæ, the two fasciculate bristles terminal. Phallosome, *p*, complex, including a Y-shaped structure about as figured, each arm extended into a strong black-tipped spine; on inner margin with a slender curved arm, toward tip slightly expanded and with delicate setæ; additional to the above structure the phallosome includes some others, the most conspicuous being a further powerful blackened spine.

*Habitat*.—India (Assam).

Holotype, male, Khanggai, Manipur, altitude 4,428 feet, July 16, 1960 (Schmid).

*Gonomyia (Lipophleps) speratina* is quite distinct from all other members of the subgenus in the hypopygial structure, especially the outer dististyle and phallosome, together with the furcate structure that is believed to represent the tergite.

GONOMYIA (LIPOPHLEPS) TURRITELLA Alexander.

Plate 7, fig. 72.

*Gonomyia (Lipophleps) turritella* ALEXANDER, Jour. N. Y. Ent. Soc. 66 (1958) 165–166.

Type—Parewavir, Nepal, March 26, 1957 (Coher).

Male hypopygium (Plate 7, fig. 72).

GONOMYIA (LIPOPHLEPS) VARSHA Alexander.

Plate 6, fig. 60; Plate 7, fig. 73.

*Gonomyia (Lipophleps) varsha* ALEXANDER, Jour. N. Y. Ent. Soc. 71 (1963) 79–80.

Type—Pagna Malla, Pauri Garhwal, Kumaon, altitude 5,995 feet, August 11, 1958 (*Schmid*).

Venation (Plate 6, fig. 60); male hypopygium (Plate 7, fig. 73).

#### Subgenus GONOMYIA Meigen

GONOMYIA (GONOMYIA) FULVIPENNIS sp. nov.

Plate 6, fig. 61.

Size very large (wing of female 8 millimeters or more); rostrum light yellow, antennæ black; mesonotal præscutum with dark brown stripes, scutal lobes extensively darkened, pleura yellow, striped with brown; halteres yellow; legs brown; wings strongly light fulvous, prearcular and costal regions clearer yellow, stigma pale brown; veins Sc and R<sub>4</sub> long.

*Female*.—Length, about 6.5 to 7 millimeters; wing, 8 to 8.5.

Rostrum light yellow; palpi black. Antennæ relatively long, black throughout. Head light yellow on front and anterior vertex, behind extensively dark brownish gray.

Pronotum light yellow. Mesonotal præscutum with sides broadly yellow, disk brownish gray with three dark stripes that are divided vaguely behind, in cases the lateral stripes lacking; scutum yellow, each lobe with a large triangular brown area that is narrowed behind, confluent across the suture with the lateral præscutal darkening; scutellum yellow; mediotergite yellow, posterior half with two large brown spots, anterior border faintly darkened, in cases with a more evident central infuscation. Pleura and pleurotergite whitish yellow with a narrow brown longitudinal stripe from the cervical region across the propleura, ending on the ventral anepisternum; ventral sternopleurite paler grayish brown. Halteres light yellow. Legs with coxæ whitish yellow; trochanters yellow; femora brown, obscure yellow basally, becoming darker brown outwardly; remainder of legs brown. Wing (Plate 6, fig. 61) strongly light fulvous, the prearcular and costal regions clear yellow, stigma pale brown; veins brownish yellow, clearer yellow in the brightened parts. Venation: Sc long, Sc<sub>1</sub> ending about opposite midlength of R<sub>5</sub>; R<sub>2+3+4</sub> arcuated, subequal to R<sub>3</sub>; vein R<sub>4</sub> long, decurved, ending shortly before the wing tip, basal section of R<sub>5</sub> short; m-cu at from about one-fourth to nearly one-half M<sub>3+4</sub>.

Abdominal tergites dark brown, sides narrowly paler; pleural membrane and sternites paler brown, posterior borders of the latter narrowly yellow.

*Habitat.*—India (Sikkim).

Holotype, female, Kalep, in *Rhododendron* association, altitude 12,000 feet, June 18, 1959 (*Schmid*). Paratypes, several females, Yagtang, in *Rhododendron* association, altitude 11,600 to 11,650 feet, June 17, 1959 (*Schmid*).

*Gonomyia* (*Gonomyia*) *fulvipennis* is the largest regional member of the subgenus, being readily told from others by the unusual size and strongly fulvous wings.

**GONOMYIA (GONOMYIA) HIRSUTISTYLA OBTUSISTYLA subsp. nov.**

Differs from typical *hirsutistyla* in slight details of the male hypopygium. Outer lobe of basistyle not prolonged, the apical half subobtuse, with very long setæ. Outer dististyle slender, outer half only slightly widened, tip subobtuse. *Ædeagus* with outer spine or apophysis small.

*Habitat.*—India (Sikkim).

Holotype, male, Yedang, in *Rhododendron* association, altitude 10,600 feet, June 9, 1959 (*Schmid*). Allotopotype, female, pinned with type.

**GONOMYIA (GONOMYIA) SUBAFFINIS sp. nov.**

Plate 6, fig. 62; Plate 7, fig. 74.

Allied to *affinis*; general coloration of mesonotum medium brown, variegated with yellow, pleura light yellow; wings subhyaline, without a stigmal darkening; *Sc* relatively long, *Sc*<sub>1</sub> ending about opposite one-fourth *Rs*; male hypopygium with apical flange of outer dististyle very low; inner style with two unequal blackened spines, the outer one angularly bent; phallosome with apophyses blackened, very unequal, one long and ribbonlike; *ædeagus* elongate, pale, apex suborbicular.

*Male.*—Length, about 4.5 millimeters; wing, 5.3.

Rostrum light yellow; palpi brown. Antennæ with scape yellowed, the remainder brown; flagellar segments long, the intermediate ones with long verticils. Front yellowed, vertex brownish gray.

Pronotal scutum light yellow, scutellum brown. Mesonotal præscutum and scutal lobes almost uniformly medium brown, central area of scutum, posterior borders of scutal callosities and the scutellum light yellow; mediotergite light brown, anterolateral angles, pleurotergite and pleura light yellow. Halteres with stem light yellow, knob very slightly darker. Legs with coxæ yellow, fore pair darkened anteriorly; trochanters yellow; remainder of

legs light brown. Wings (Plate 6, fig. 62) subhyaline, unpatterned, stigma lacking; veins pale brown. Veins beyond the cord with abundant long trichia. Venation: Sc relatively long, Sc<sub>1</sub> ending about opposite one-fourth Rs, Sc<sub>2</sub> nearly obsolete; R<sub>2+3+4</sub> only moderately arcuated, nearly twice R<sub>3</sub>; cell 1st M<sub>2</sub> gently widened outwardly, subequal in length to vein M<sub>4</sub>.

Abdomen light brown, sternites paler. Male hypopygium (Plate 7, fig. 74) with apical lobe of basistyle, *b*, small, about one-third as long as the outer dististyle, *d*, the latter virtually simple, with a very low apical flange on mesal face; inner style united basally with the outer, distally with two blackened spines, the outer one more angularly bent, with a single strong seta in the axil. Phallosome, *p*, with apophyses very unequal, one an elongate blackened ribbon, slightly expanded before the acute tip; second apophysis a very small spine at base of the longer one; ædeagus pale, elongate, the suborbicular apex slightly expanded.

*Habitat*.—India (Assam).

Holotype, male, Shergaon, Kameng, Northeast Frontier Agency, altitude 6,400 feet, May 8, 1961 (*Schmid*).

The closest ally of this species appears to be *Gonomyia* (*Gonomyia* *affinis* Brunetti, described from the Darjiling district in the eastern Himalayas. Of this I have a female paratype received from Brunetti by exchange of materials, this agreeing fairly well with his species description, including the darkened wing stigma. The type of the species is a male but Brunetti provided no account of the genitalic structures.

GONOMYIA (GONOMYIA) TANAOCANTHA Alexander. Plate 6, fig. 63; Plate 7, fig. 75.

*Gonomyia* (*Gonomyia*) *tanaocantha* ALEXANDER, Jour. N. Y. Ent. Soc. 71 (1963) 75–76.

Type—Chumtang, Sikkim, altitude 5,120 feet, July 18, 1959 (*Schmid*).

Venation (Plate 6, fig. 63); male hypopygium (Plate 7, fig. 75).

#### Sugenus TEUCHOGONOMYIA novum

Characters generally as in typical *Gonomyia*. Antennæ with proximal two or three flagellar segments partially united to form an incomplete elongate fusion-segment; outer flagellar segments long, with relatively short verticils. Wings with Rs relatively long, from about one-half to two-thirds the long straight R<sub>2+3+4</sub>;

cell  $R_3$  small, vein  $R_3$  suberect,  $R_4$  nearly straight; cell 1st  $M_2$  generally closed, in *percomplexa* open by atrophy of basal section of  $M_3$ ; anterior arculus lacking. Male hypopygium with basistyle not produced into apical lobes; three terminal dististyles, all simple; outer style long and slender with microscopic apical points, intermediate style with outer and triangularly expanded. Phallosome distinctive, symmetrical, very large, complicated by branching of the gonapophyses.

Type of subgenus: *Gonomyia* (*Teuchogonomyia*) *noveboracensis* Alexander (1916) Eastern Nearctic.

Other species include *G. (T.) aciculifera* Alexander (1919), *G. (T.) percomplexa* Alexander (1946), *G. (T.) sevierensis* Alexander (1948) and *G. (T.) tetonensis* Alexander (1946), of the western Nearctic region; *G. (T.) horribilis* Alexander (1941), eastern Palaearctic (Japan), and *G. (T.) edwardsi* Lackschewitz (1925) and *G. (T.) ithyphallus* Lackschewitz (1935), western Palaearctic (Europe).

Illustrations of the male hypopygium include the following:

- G. (T.) edwardsi* LACKSCHEWITZ, Arbeit Naturforsch. Vereins Riga (n.f.) **16** (1925) 7–8, fig. 4; TJEDER, Bo-Opuscula entomologica **6** (1941) 60–61, fig. 2.
- G. (T.) horribilis* ALEXANDER, Philip. Jour. Sci. **76** (1941) 60–62, fig. 44.
- G. (T.) ithyphallus* LACKSCHEWITZ, Naturhist. Maandblad (Limburg, Maastricht) **24** (1935) 14, pl. 3, fig. 8.
- G. (T.) noveboracensis* ALEXANDER, Proc. Acad. Nat. Sci. Philadelphia for 1916 (1916) 523, pl. 30, figs. 79, 80.



# ILLUSTRATIONS

[Legend: *b*, basistyle; *d*, dististyle; *p*, phallosome.]

## PLATE 1

- FIG. 1. *Gonomyia* (*Protogonomyia*) *apocrypha* sp.nov.; venation.  
2. *Gonomyia* (*Protogonomyia*) *clista* Alexander; venation.  
3. *Gonomyia* (*Protogonomyia*) *distifurca* Alexander; venation.  
4. *Gonomyia* (*Protogonomyia*) *glabristyla* sp.nov.; venation.  
5. *Gonomyia* (*Protogonomyia*) *lateromacula* sp.nov.; venation.  
6. *Gonomyia* (*Protogonomyia*) *scoteina* sp.nov.; venation.  
7. *Gonomyia* (*Protogonomyia*) *thiorhopala* Alexander; venation.  
8. *Gonomyia* (*Ramagonomyia*) *protensa* Alexander; venation.  
9. *Gonomyia* (*Sivagonomyia*) *discolophallos* sp.nov.; venation.  
10. *Gonomyia* (*Protogonomyia*) *acustylata* Alexander; male hypopygium.  
11. *Gonomyia* (*Protogonomyia*) *apiculata* sp.nov.; male hypopygium.  
12. *Gonomyia* (*Protogonomyia*) *apocrypha* sp.nov.; male hypopygium.  
13. *Gonomyia* (*Protogonomyia*) *clista* Alexander; male hypopygium.

## PLATE 2

- FIG. 14. *Gonomyia* (*Protogonomyia*) *contostyla* sp.nov.; male hypopygium.  
15. *Gonomyia* (*Protogonomyia*) *distifurca* Alexander; male hypopygium.  
16. *Gonomyia* (*Protogonomyia*) *glabristyla* sp.nov.; male hypopygium.  
17. *Gonomyia* (*Protogonomyia*) *khasiana* ALEXANDER; male hypopygium.  
18. *Gonomyia* (*Protogonomyia*) *lateromacula* sp.nov.; male hypopygium.  
19. *Gonomyia* (*Protogonomyia*) *megalomata* Alexander; male hypopygium.  
20. *Gonomyia* (*Protogonomyia*) *pellax* sp.nov.; male hypopygium.  
21. *Gonomyia* (*Protogonomyia*) *rejecta* sp.nov.; male hypopygium.

## PLATE 3

- FIG. 22. *Gonomyia* (*Protogonomyia*) *scoteina* sp.nov.; male hypopygium.  
23. *Gonomyia* (*Protogonomyia*) *thiorhopala* Alexander; male hypopygium.  
24. *Gonomyia* (*Sivagonomyia*) *discolophallos* sp.nov.; male hypopygium.  
25. *Gonomyia* (*Ramagonomyia*) *bisiculifera* Alexander; male hypopygium.  
26. *Gonomyia* (*Ramagonomyia*) *protensa* Alexander; male hypopygium.

27. *Gonomyia* (*Idiocera*) *acaenophallos* sp.nov.; venation.
28. *Gonomyia* (*Idiocera*) *acifurca* Alexander; venation.
29. *Gonomyia* (*Idiocera*) *furcosa* sp.nov.; venation.
30. *Gonomyia* (*Idiocera*) *kashongensis* sp.nov.; venation.
31. *Gonomyia* (*Idiocera*) *lamia* sp.nov.; venation.
32. *Gonomyia* (*Idiocera*) *leda* sp.nov.; venation.
33. *Gonomyia* (*Idiocera*) *sita* sp.nov.; venation.
34. *Gonomyia* (*Idiocera*) *terribilis* sp.nov.; venation.

## PLATE 4

- FIG. 35. *Gonomyia* (*Idiocera*) *vayu* sp.nov.; venation.
36. *Gonomyia* (*Ptilostenodes*) *capitula* sp.nov.; venation.
  37. *Gonomyia* (*Ptilostenodes*) *stenomera* sp.nov.; venation.
  38. *Gonomyia* (*Idiocera*) *acaenophallos* sp.nov.; male hypopygium.
  39. *Gonomyia* (*Idiocera*) *acifurca* Alexander; male hypopygium.
  40. *Gonomyia* (*Idiocera*) *coheriana* Alexander; male hypopygium.
  41. *Gonomyia* (*Idiocera*) *furcosa* sp.nov.; male hypopygium.
  42. *Gonomyia* (*Idiocera*) *kashongensis* sp.nov.; male hypopygium.
  43. *Gonomyia* (*Idiocera*) *lamia* sp.nov.; male hypopygium.

## PLATE 5

- FIG. 44. *Gonomyia* (*Idiocera*) *leda* sp.nov.; male hypopygium.
45. *Gonomyia* (*Idiocera*) *petilis* Alexander; male hypopygium.
  46. *Gonomyia* (*Idiocera*) *serratistyla* sp.nov.; male hypopygium.
  47. *Gonomyia* (*Idiocera*) *sita* sp.nov.; male hypopygium.
  48. *Gonomyia* (*Ptilostenodes*) *capitula* sp.nov.; male hypopygium.
  49. *Gonomyia* (*Ptilostenodes*) *capitula* sp.nov.; male hypopygium.
  50. *Gonomyia* (*Idiocera*) *vayu* sp.nov.; male hypopygium.
  51. *Gonomyia* (*Ptilostenodes*) *stenomera* sp.nov.; male hypopygium.

## PLATE 6

- FIG. 52. *Gonomyia* (*Lipophleps*) *amblystyla* sp.nov.; venation.
53. *Gonomyia* (*Lipophleps*) *curvistyla* Alexander; venation.
  54. *Gonomyia* (*Lipophleps*) *hestica* sp.nov.; venation.
  - 55, 56. *Gonomyia* (*Lipophleps*) *kama* Alexander; venation.
  57. *Gonomyia* (*Lipophleps*) *mizoensis* Alexander; venation.
  58. *Gonomyia* (*Lipophleps*) *nilgiriana* Alexander; venation.
  59. *Gonomyia* (*Lipophleps*) *speratina* sp.nov.; venation.
  60. *Gonomyia* (*Lipophleps*) *varsha* Alexander; venation.
  61. *Gonomyia* (*Gonomyia*) *fulvipennis* sp.nov.; venation.
  62. *Gonomyia* (*Gonomyia*) *subaffinis* sp.nov.; venation.
  63. *Gonomyia* (*Gonomyia*) *tanaocantha* Alexander; venation.
  64. *Gonomyia* (*Lipophleps*) *amblystyla* sp.nov.; male hypopygium.
  65. *Gonomyia* (*Lipophleps*) *curvistyla* Alexander; male hypopygium.
  66. *Gonomyia* (*Lipophleps*) *hestica* sp.nov.; male hypopygium.
  67. *Gonomyia* (*Lipophleps*) *kama* Alexander; male hypopygium.

## PLATE 7

- FIG. 68. *Gonomyia* (*Lipophleps*) *kama* Alexander; male hypopygium.  
69. *Gonomyia* (*Lipophleps*) *mizoensis* Alexander; male hypopygium.  
70. *Gonomyia* (*Lipophleps*) *nilgiriana* Alexander; male hypopygium.  
71. *Gonomyia* (*Lipophleps*) *speratina* sp.nov.; male hypopygium.  
72. *Gonomyia* (*Lipophleps*) *turritella* Alexander; male hypopygium.  
73. *Gonomyia* (*Lipophleps*) *varsha* Alexander; male hypopygium.  
74. *Gonomyia* (*Gonomyia*) *subaffinis* sp.nov.; male hypopygium.  
75. *Gonomyia* (*Gonomyia*) *tanaocantha* Alexander; male hypopygium.

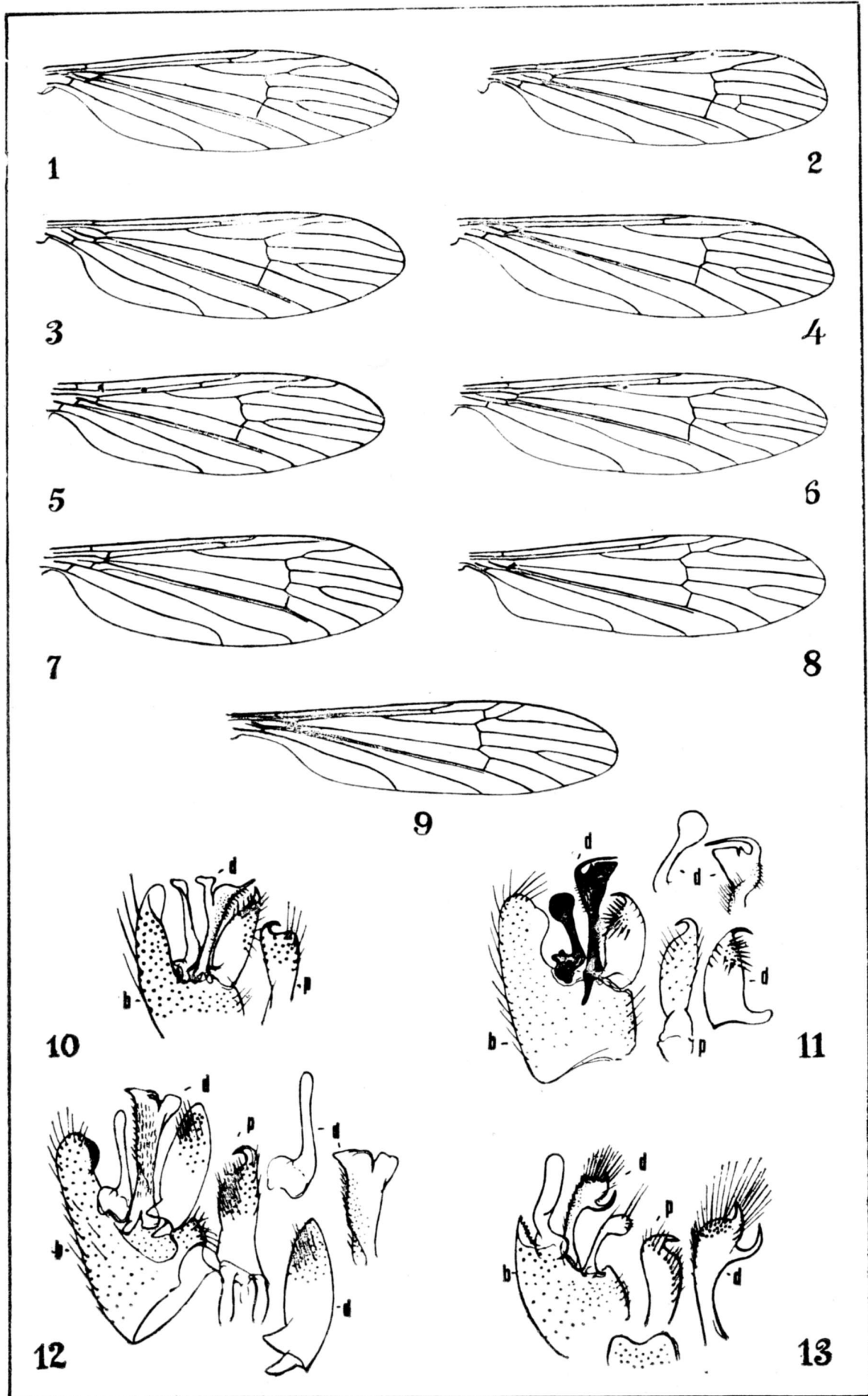


PLATE 1.

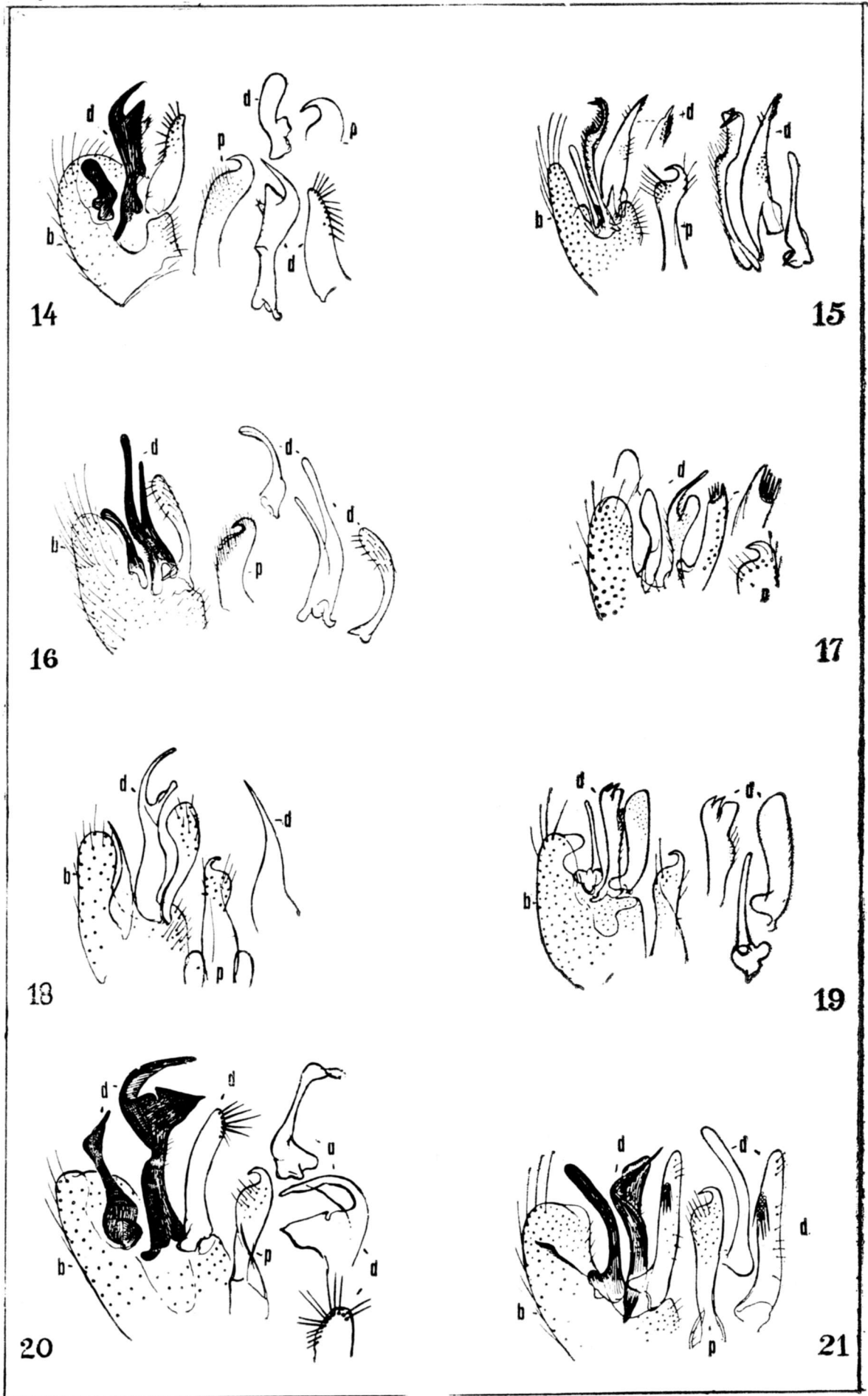


PLATE 2.

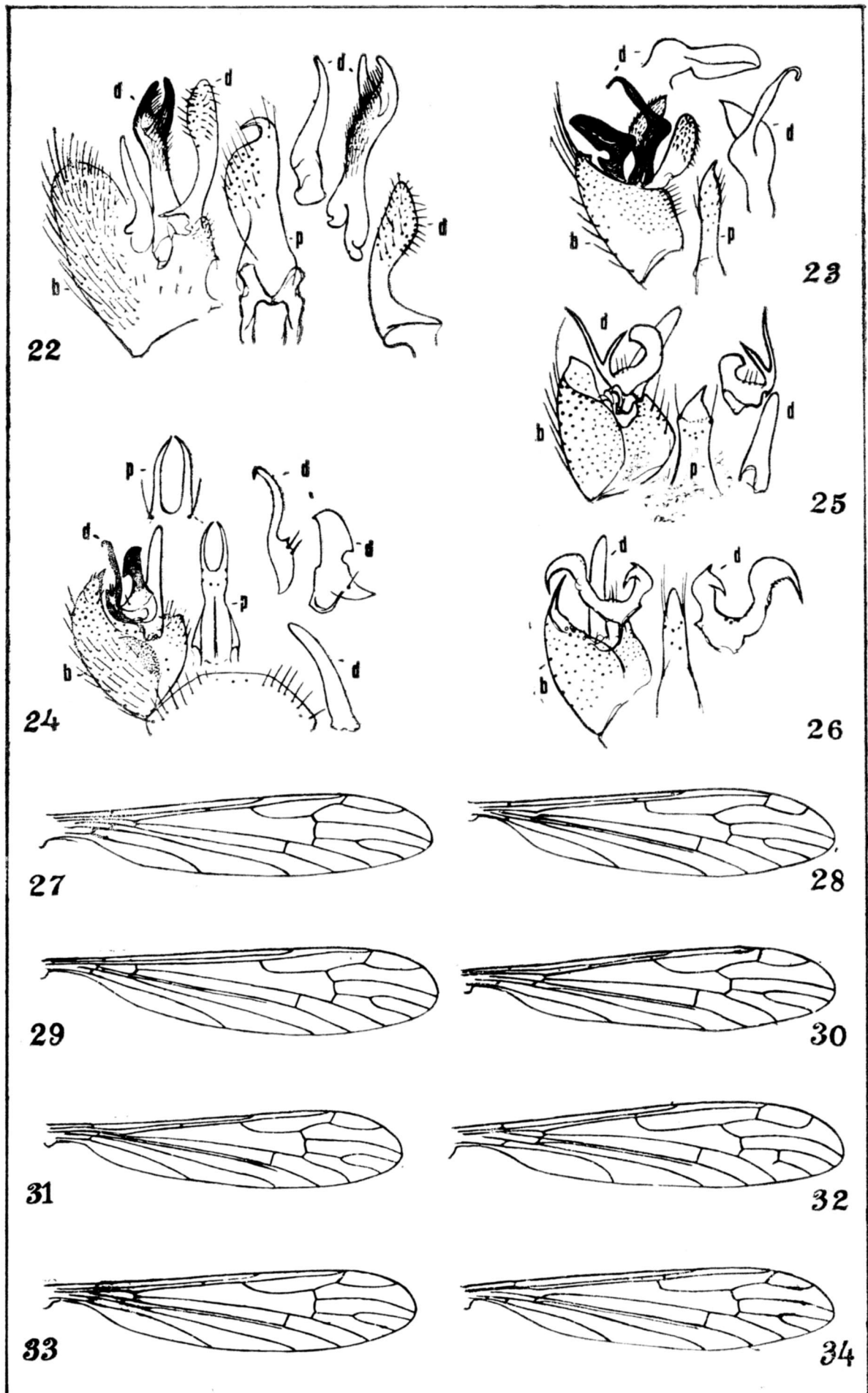


PLATE 3.

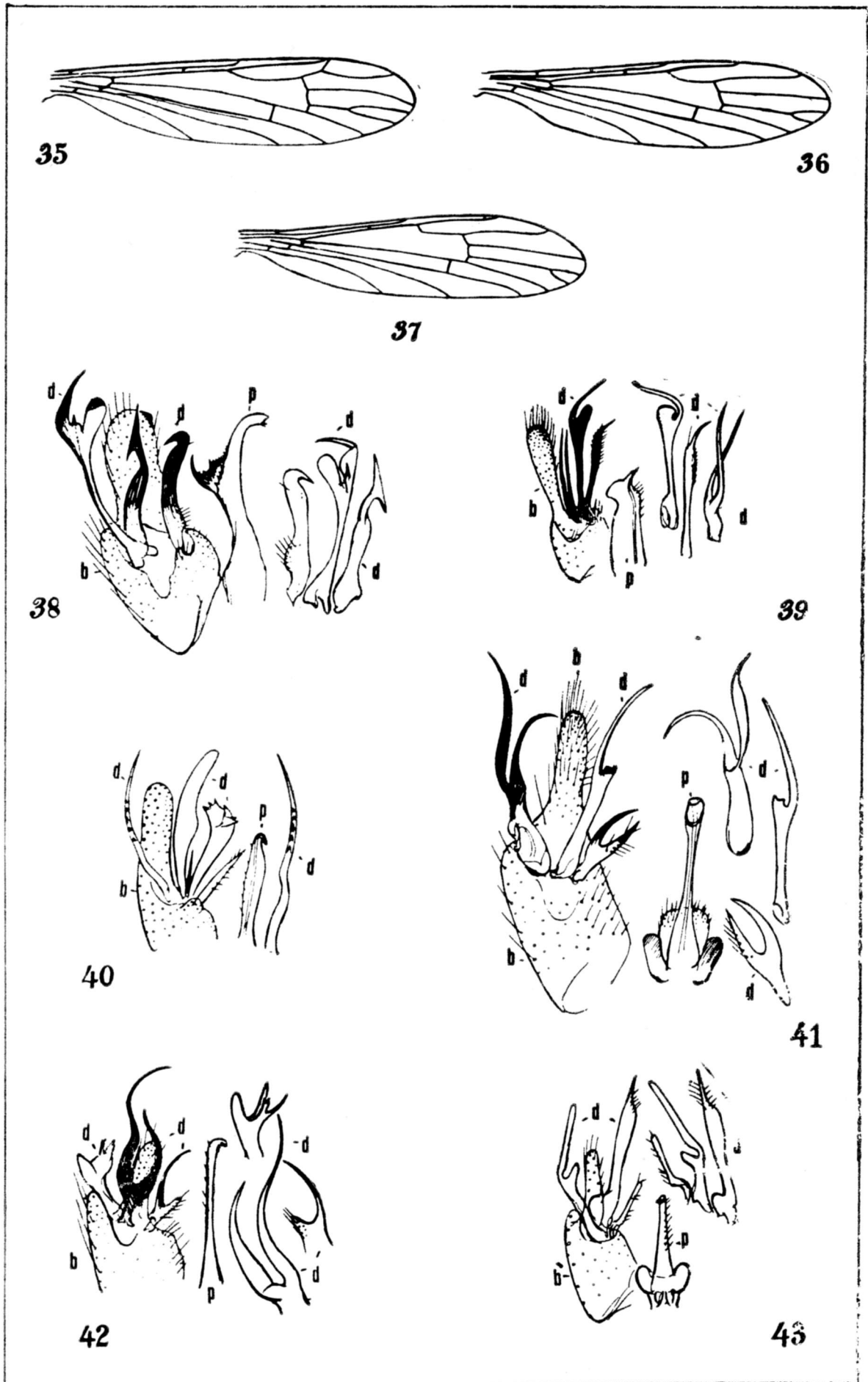


PLATE 4.

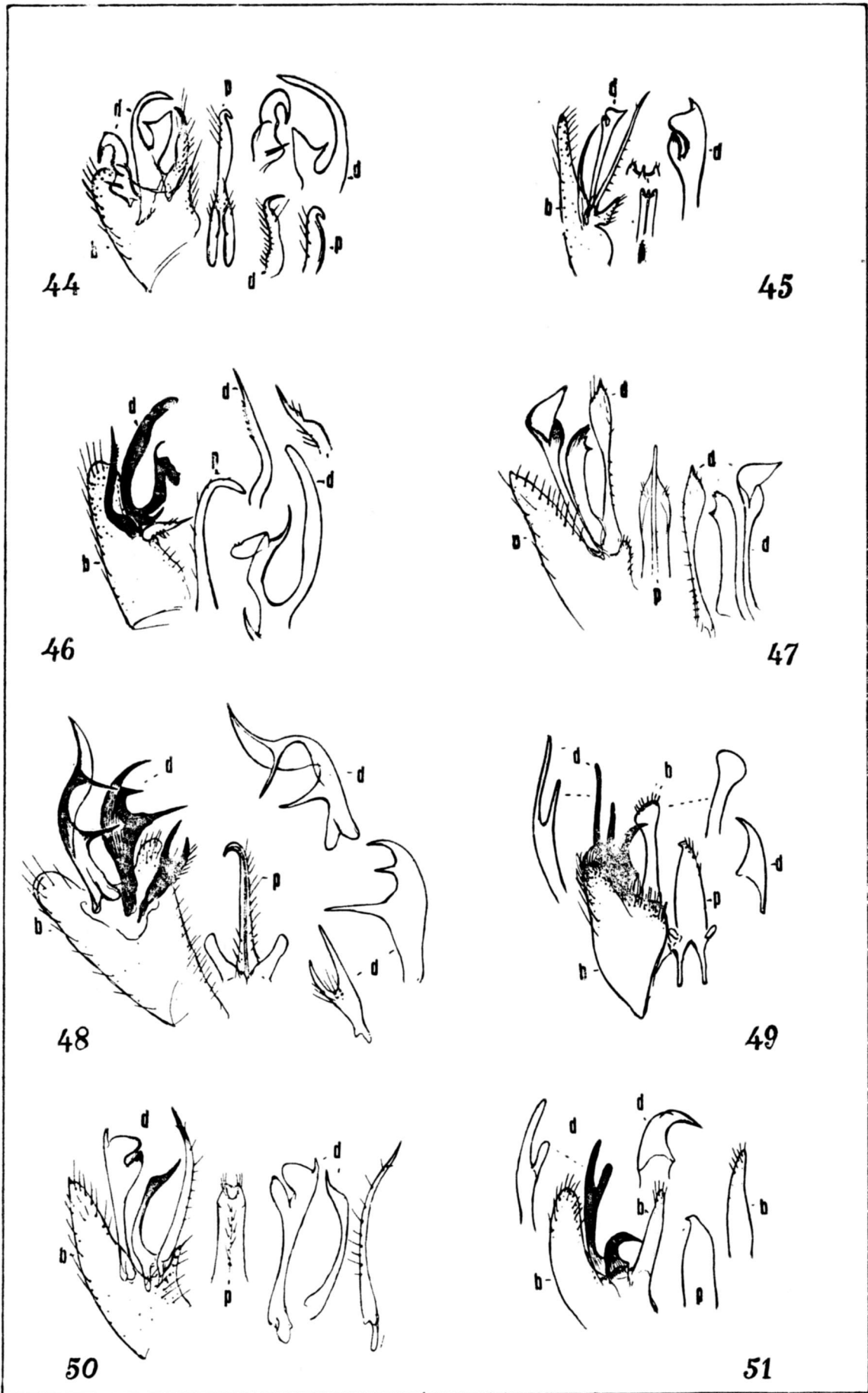


PLATE 5.



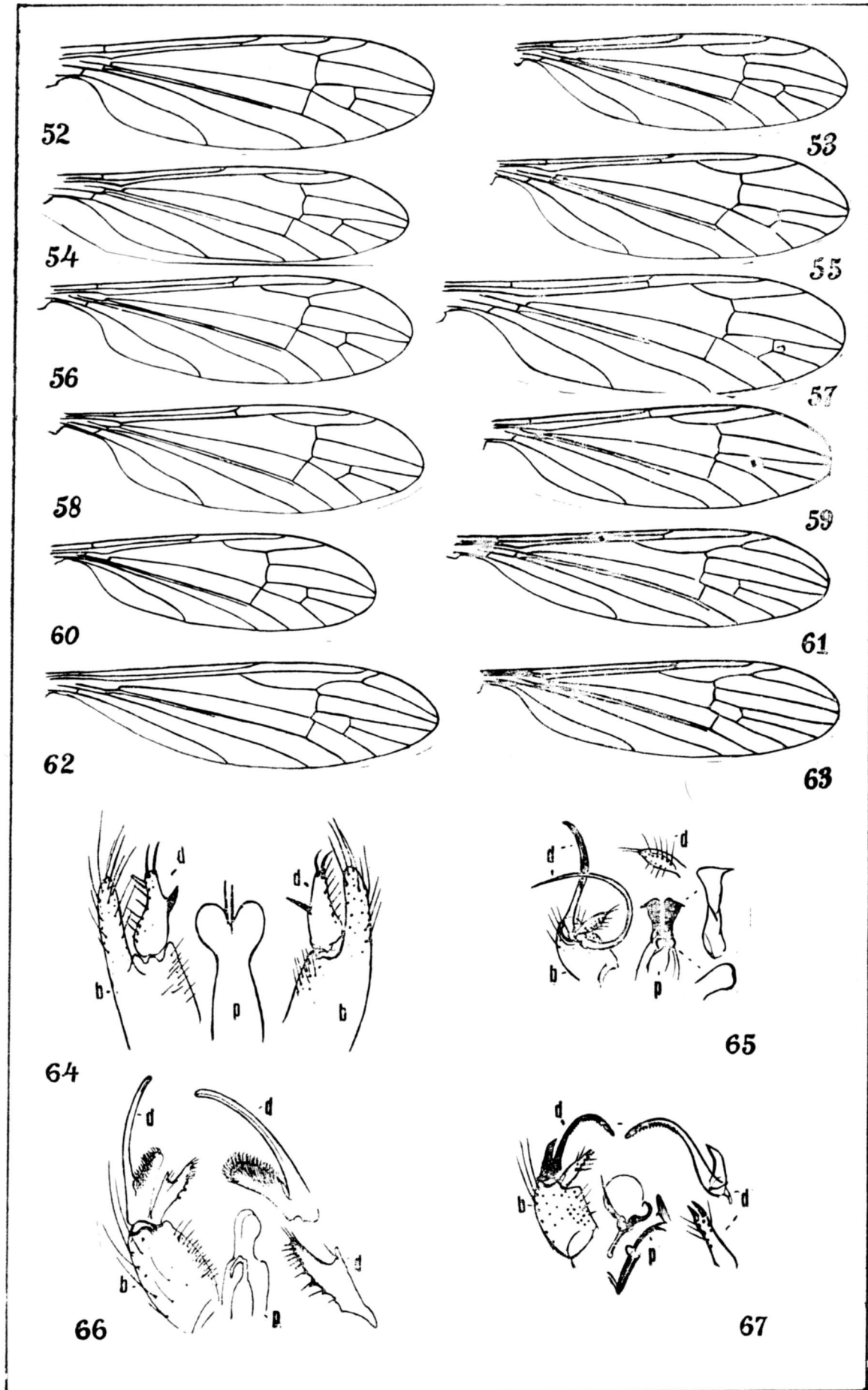


PLATE 6.



68



69



70



71



72



73



74



75