

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

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NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN
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TWO PLATES

The majority of the species discussed in the present report are from the Khasi Hills, Assam, where they were collected at Cherrapunji by Mr. S. Sircar. A few additional species are from southern Sumatra where they were secured by Mrs. M. E. Walsh. I am greatly indebted to Mrs. Walsh and Mr. Sircar for their appreciated interest in saving these usually neglected flies. The types of the novelties discussed herewith are preserved in my collection of the Tipulidæ.

TIPULINÆ

TIPULINI

TIPULA (SCHUMMELIA) MEDICA sp. nov. Plate 1, fig. 1.

General coloration brown, the præscutum obscure brownish yellow, with four darker brown stripes; antennæ bicolorous; pleura uniformly dark brown; legs black, the femoral bases yellow; wings with a weak brown tinge, with veins Cu and m-cu conspicuously seamed with dark brown; Rs short and straight, shorter than R_{2+3} ; cell 1st M_2 diamond-shaped, pointed at both ends; cell M_1 rather short-petiolate; abdomen brownish black, the tergites only restrictedly brightened on their sublateral portions.

Female.—Length, about 14 millimeters; wing, 11.

Frontal prolongation of head brownish black; nasus distinct; palpi black. Antennæ with the scape obscure yellow; pedicel pale yellow; flagellum bicolorous, yellow, the basal enlargement of the segments dark brown; basal enlargements only weakly developed; verticils subequal in length to the segments; terminal segment reduced to a tiny conical structure. Head light brown, the posterior orbits narrowly more grayish; a capillary,

¹ Contribution from the entomological laboratory, Massachusetts State College.

median, dark brown vitta extends from the summit of the entire vertical tubercle backward to the occiput.

Pronotum dark brown. Mesonotal præscutum obscure brownish yellow, with four darker brown stripes, the intermediate pair separated by a vague paler median line; scutal lobes extensively darkened; scutellum testaceous brown, darker brown on either side of the midline, this color including most of the parascutella; mediotergite yellowish brown, darker laterally, the entire surface with coarse, erect black setæ. Pleura almost uniformly dark brown. Halteres with extreme base of stem pale, the remainder broken. Legs with the coxæ infuscated; trochanters yellow; remainder of legs black, the femoral bases yellow, narrowest on the fore and middle legs, much more extensive on the posterior pair. Wings (Plate 1, fig. 1) with a weak brownish tinge; prearcular field more yellowish, cells C and Sc pale brown; stigma dark brown, preceded and followed by restricted cream-colored areas; narrow but complete dark brown seams on m-cu and the entire length of vein Cu; anterior cord and outer veins very narrowly and insensibly seamed with brown; outer radial field weakly darkened, especially in cell R_3 ; wing apex, as far caudad as vein Cu, together with the axilla, very narrowly darkened; veins brown; obliterative areas of moderate size. Venation: Sc_2 ending just beyond origin of R_s , the latter short and straight, much shorter than R_{2+3} ; veins R_{1+2} diverging strongly from R_3 , cell R_2 very wide at margin; cell 1st M_2 strongly pointed at both ends, nearly diamond-shaped by the shortening of m; cell M_1 more than three times the length of its petiole; m-cu a short distance before the fork of M.

Abdomen brownish black, variegated by obscure yellow, the tergites restrictedly so on the sublateral portions; sternites more extensively pale. Cerci long and slender.

Habitat.—Assam (Khasi Hills).

Holotype, female, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

Generally similar to *Tipula* (*Schummelia*) *klossi* Edwards (Malay Peninsula), differing most evidently in the details of coloration of the body and wings, the shorter trichia of the wing veins, and in the venation, as the even more basal position of m-cu. *Tipula* (*S.*) *pendleburyi* Edwards and *T.* (*S.*) *vitalisi* Edwards are likewise related to the present fly though more distantly so.

TIPULA (SCHUMMELIA) PERGRATA sp. nov. Plate 1, fig. 2; Plate 2, fig. 25.

Belongs to the *continuata* group; antennal flagellum black, only the basal segments feebly bicolorous; præscutum with three brown stripes that are confluent in front; scutum and scutellum with a median dark vitta; pleura yellow; femora obscure brownish yellow, the tips rather narrowly blackened; wings with a faint brownish tinge, restrictedly patterned with brown and variegated by more whitish areas; Rs a little longer than R_{2+3} ; m-cu shortly before the fork of M_{3+4} ; male hypopygium with the inner dististyle abruptly narrowed into a small blackened apical beak, subtended beneath by an acute blackened spine; notch of ninth sternite with a depressed subcircular lobule.

Male.—Length, about 10.5 millimeters; wing, 12; antenna, about 3.5.

Frontal prolongation of head, together with the conspicuous nasus, yellow, the sides of the prolongation brownish black; palpi black. Antennæ with the scape and pedicel yellow; first flagellar segment yellow basally, darkened at outer end; succeeding two or three segments darker basally than at outer ends, the outer segments uniformly blackened; verticils a little shorter than the segments; terminal segment about one-third as long as the penultimate. Front and anterior vertex yellow, the posterior portions of vertex a little more infumed; a narrow, darker brown median line on posterior vertex, extended caudad from a small median tubercle.

Pronotum brown on median portion, yellow on sides. Mesonotal præscutum with three brown stripes that are confluent in front though narrowly separated behind, leaving linear posterior interspaces of the ground color; præscutal stripes with the central portions a little paler than the borders; humeral and lateral portions of præscutum broadly yellow; scutum broadly yellow medially, the outer portions of lobes dark brown, this being a direct continuation of the lateral præscutal stripe, the median scutal area further divided by a capillary dark central vitta; scutellum yellow, with a median brown line; parascutella dark; mediotergite pale on central portion, the sides darkened. Pleura almost uniformly yellow, scarcely or not at all variegated by darker. Halteres darkened, the extreme base of stem and apex of knob a little brightened. Legs with the coxæ and trochanters yellow; femora obscure brownish yellow, the tips rather narrowly blackened, the amount subequal on all legs; tibiæ and

tarsi black. Wings (Plate 1, fig. 2) with a faint brownish tinge, the prearcular field and cells C and Sc more yellowish brown; stigma dark brown; brown seams along veins Cu and m-cu, interrupted at near three-fourths the length of vein Cu₁ by a large pale area in cell M; anterior cord and outer end of cell 1st M₂ narrowly seamed with brown; veins beyond cord very narrowly bordered by darker; outer ends of anal cells a little darker colored than the ground; cell 1st A with a whitish marginal spot adjoining veins 1st A and 2d A; veins dark, paler in the costal region. Venation: Rs a little longer than R₂₊₃; petiole of cell M₁ a little exceeding m; m-cu long, shortly before the fork of M₃₊₄.

Abdominal tergites obscure yellow, narrowly darkened sublaterally; sternites more uniformly yellow; hypopygium infuscated. Male hypopygium (Plate 2, fig. 25) with the caudal border of the ninth tergite, 9t, deeply and broadly emarginate, the dorsal surface rather strongly and convexly arched; border of emargination heavily blackened, without evident median tooth. Outer dististyle, *od*, long and slender, gradually narrowed outwardly, with very long outspreading setæ. Inner dististyle, *id*, with a small blackened beak, the apical point unusually slender, with an acute blackened point directed towards it. Ninth sternite, 9s, bearing at base of its median notch a small, depressed, semicircular or oval lobule, densely set with microscopic setulæ.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

The closest described allies of the present fly are *Tipula* (*Schummelia*) *continuata* Brunetti and *T. (S.) xanthopleura* Edwards, of northern India, which differ in the structure of the male hypopygium and in the venational details, as the long, more arcuated R₂₊₃ and differently shaped medial cells in *continuata*, and the longer Rs, which considerably exceeds R₂₊₃, in *xanthopleura*. Edwards has given descriptions of the hypopygial distinctions of the two species mentioned.²

TIPULA (VESTIPLEX) TUTA sp. nov. Plate 1, fig. 3.

Mesonotum yellow, the præscutum with four more olive-brown stripes that are very vaguely bordered by slightly darker brown; scutellum and postnotum with a narrow, darkened, median vitta; pleura obscure yellow; tips of femora narrowly blackened; wings

² Ann. & Mag. Nat. Hist. X 1 (1928) 698-699.

strongly suffused with brownish yellow, almost unpatterned; Rs long, subequal to vein R_3 ; petiole of cell M_1 very short; abdominal tergites yellow, narrowly trivittate with dark brown; sternites yellow, with a median brown line; cerci slender, each with about a dozen strong teeth.

Female.—Length, about 17 millimeters; wing, 14.2.

Frontal prolongation of head obscure yellow, narrowly lined with darker on sides; nasus stout; palpi black. Antennæ with the scape and pedicel obscure yellow, flagellum brown, the basal enlargements of the segments not or scarcely darkened; longest verticils a little shorter than the segments. Head obscure orange or orange-yellow, with a vague, median, darker line on vertex.

Mesonotal præscutum yellow, with four more olive-brown stripes that are vaguely bordered by slightly darker brown; anterior ends of intermediate stripes barely confluent; scutum obscure yellow, the lobes variegated by more olive-brown; scutellum olive-brown, narrowly darker medially; postnotum more golden-yellow pollinose, with a narrow dark median vitta that is narrowed behind and does not reach the posterior margin. Pleura obscure yellow, the anepisternum a little variegated by darker. Halteres brownish yellow, the knobs dark brown. Legs with the coxæ and trochanters obscure yellow; femora brownish yellow, the tips narrowly but conspicuously blackened, the amount subequal on all legs and involving about the distal seventh or eighth of the segment; tibiæ and basitarsi obscure yellow, the tips narrowly darkened; remainder of tarsi darkened. Wings (Plate 1, fig. 3) strongly suffused with brownish yellow, the stigma and a more or less evident cloud on anterior cord a little darker than the ground; no distinct dark pattern on wing, as is the case in all other species of the subgenus; obliterative areas across cell 1st M_2 conspicuous; veins brown. Venation: Rs relatively long, subequal to vein R_3 ; petiole of cell M_1 very short; M_{3+4} subequal to basal section of M_3 .

Abdominal tergites yellow, narrowly bordered sublaterally with dark brown, the lateral margins narrowly buffy; a continuous, dark brown, median stripe on tergites; sternites yellow, with a broad, nearly continuous, dark brown, median stripe. Ovipositor with cerci slender, each with about a dozen strong teeth along more than the distal half.

Habitat.—Assam (Khasi Hills).

Holotype, female, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

The nearest described ally of the present fly is *Tipula* (*Vestiplex*) *nigroapicalis* Brunetti, of the eastern Himalayas, readily distinguished by the different wing pattern and venation. A paratype of the latter species is before me and indicates a very different fly. The practically obsolete wing pattern of the present insect will serve to separate the species from all others so far known.

LIMONIINÆ

LIMONIINI

LIMONIA (GERANOMYIA) MERACULA sp. nov. Plate 1, fig. 4.

General color reddish, the præscutum with three narrow brown stripes; rostrum short, in the female only about one-third the length of the remainder of body, black, with a pale ring just before the very short tips of the labial palpi; legs yellow; wings whitish subhyaline, heavily patterned with brown, including a series of six major costal areas; areas two to four, inclusive, widened posteriorly and there inclosing pale centers; last dark costal area a complete subapical fascia; Sc long, Sc₁ ending just before the fork of Rs; abdominal tergites dark brown, the posterior borders of the segments narrowly pale; sternites pale.

Female.—Length, excluding rostrum, about 6 millimeters; wing, 6.5; rostrum, about 2.

Rostrum relatively short, in female only about one-third the remainder of body, black, narrowly paler just before the very short, divergent tips of the labial palpi. Antennæ short, black throughout; flagellar segments short-oval, with verticils that are subequal in length to the segments. Anterior vertex and front obscure silvery, the color continued caudad onto the posterior vertex as a silvery line of slightly greater width; posterior portion of head blackened.

Pronotum reddish brown above, more blackened on sides and as a narrow median line. Mesonotal præscutum reddish, with three very narrow brown stripes, the median one beginning on the pronotum, not attaining the suture behind; lateral stripes subequal in width to the median, reaching or passing the suture but vague and diffuse behind; scutellum, median region of scutum, and the posterior median portion of the præscutum more testaceous; postnotum reddish brown, more darkened on sides. Pleura almost uniformly reddish brown, the dorsal sclerites scarcely darker. Halteres dusky. Legs with the coxæ and trochanters yellowish testaceous; remainder of legs, yellow, only the terminal tarsal segments somewhat darker. Wings (Plate 1, fig. 4) whitish subhyaline, heavily patterned with brown, includ-

ing a series of about six major costal areas, arranged as follows: At arculus; at supernumerary crossvein in cell Sc; origin of Rs; tip of Sc₁; stigma; tip of vein R_{2,3}; of these areas the first is small and ill-defined, spreading distad in cell Sc and thence crossing cells R and M just beyond arculus; areas two to four widen out behind in cell R and here have the centers pale, the lateral darkenings appearing as pincer-shaped areas in cell R; stigmal area large and extensive, involving cell R₃; terminal area a complete subapical crossband extending from cell R₂ to cell M₄, sending a dark spur to wing apex along vein R_{4,5}; in addition to the six major areas, there are small paler areas in cells C and Sc only, lying between the major areas one and two, two and three, and three and four, respectively; narrow, solidly darkened seams along cord and outer end of cell 1st M₂; small brown spots at ends of veins Cu₁, 1st A, and 2d A, the last largest; a small darkened marginal spot at near midlength of cell 2d A; veins dark brown. Venation: Sc long, with Sc₁ ending nearly opposite the fork of Rs, Sc₂ at its tip; free tip of Sc₂ and R₂ both pale and in transverse alignment; m-cu close to fork of M; vein 2d A bent rather strongly to wing margin, the cell widest just before outer end.

Abdominal tergites dark brown, the posterior borders of the segments narrowly pale; sternites obscure yellow; genital shield chiefly pale; bases of hypovalvæ blackened.

Habitat.—Assam (Khasi Hills).

Holotype, female, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

Limonia (Geranomyia) meracula is quite distinct from the other described regional species of the subgenus, especially in the wing pattern which is very different from that of the other Indian and Malayan species. The most similar forms are *L. (G.) avocetta* (Alexander) and *L. (G.) semistriata* (Brunetti), but the resemblance is not particularly close.

LIMONIA (GERANOMYIA) FUMIMARGINATA sp. nov. Plate 2, fig. 26.

Allied to *pictorum*; size large (wing, male, 7 millimeters); general coloration of præscutum reddish brown, with three narrow darker brown stripes; pleura yellowish, the dorsal portion a little more darkened; knobs of halteres infuscated; legs yellow; wings pale yellow, with a heavy dark pattern, including six major costal areas that are pale brown, narrowly bordered by darker brown; posterior cells of wing with numerous small brown dots; Sc₁ ending opposite or shortly beyond midlength of

Rs; male hypopygium with the median notch of the tergite shallow; ventral dististyle large; rostral spines two, arising from a common tubercle.

Male.—Length, excluding rostrum, about 7 millimeters; wing, 7; rostrum, about 3.

Rostrum relatively long, nearly one-half the length of the remainder of body, black throughout; free tips of labial palpi slender. Antennæ black throughout; flagellar segments oval, with inconspicuous verticils. Head with the narrow anterior vertex gray, the color produced caudad onto the posterior vertex almost to occiput; remainder of vertex black.

Pronotum pale yellow, narrowly darkened medially above and on sides. Mesonotal præscutum reddish brown, the humeral and lateral portions paling to light yellow; disk of præscutum with three narrow darker brown stripes, the median one wider in front, narrowed behind and reaching the suture; lateral stripes subequal in width to the interspaces; scutal lobes reddish brown, their mesal portions variegated with darker brown; scutellum chiefly pale, with a narrow, darker, median vitta, the parascutella darker; mediotergite dark brown. Pleura yellowish, the dorsal portion a little more darkened, the color a little more expanded on the pleurotergite. Halteres pale, the knobs infuscated. Legs with the coxæ and trochanters tinged with green; remainder of legs yellow, the terminal tarsal segments darkened. Wings with a pale yellow tinge, the prearcular and costal regions a very little more saturated yellow; a heavy brown pattern, chiefly costal in distribution, including six major areas, arranged as follows: First at arculus; second at the supernumerary crossvein in cell Sc; third and fourth at origin of Rs and fork of Sc, respectively, in cases united with one another along Rs; fifth area stigmal; sixth at outer end of R_{2+3} ; a smaller marking at outer end of cell R_3 ; major costal areas with their central portions paler brown than the narrow dark margins; cord and outer end of cell 1st M_2 narrowly seamed with brown; small scattered brown dots in most of the cells of the wing, including R, M, Cu, 1st A, 2d A, and, usually, in some of the cells beyond the cord; veins pale, darker in the infuscated areas. Venation: Sc_1 ending opposite or shortly beyond midlength of Rs, Sc_2 at its tip; m-cu at fork of M.

Abdominal tergites brown; sternites light yellow; hypopygium a little brightened. Male hypopygium (Plate 2, fig. 26) much as in *pictorum*. Ninth tergite, 9t, with the median notch shallow. Ventral dististyle, *vd*, larger, the rostral prolongation

small but stout; rostral spines two, slightly unequal in size, arising from a common tubercle. Dorsal dististyle at apex produced into a long, slender, darkened spine.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Paratopotype, male.

The most similar described species is *Limonia (Geranomyia) pictorum* Alexander,³ which differs conspicuously in the smaller size and very different wing pattern, the dark costal areas being solidly infuscated, not pale in the centers with narrow darker borders, as is the case in the present species. Correlated with the above are minor differences in venation and in the structure of the male hypopygium.

LIMONIA (GERANOMYIA) OFFIRMATA sp. nov. Plate 1, fig. 5.

General coloration reddish yellow, the præscutal disk chiefly covered by three dull black, confluent stripes; femora yellow; wings grayish yellow, with a very restricted, darker brown pattern, including small spots at the supernumerary crossvein in cell Sc, origin of Rs and tip of Sc; stigma darkened; Sc₁ ending opposite two-thirds the length of Rs.

Female.—Length, excluding rostrum, about 5.5 millimeters; wing, 6.4; rostrum, about 1.7.

Rostrum unusually short, less than a third the length of the remainder of body, black throughout; divergent tips of labial palpi very short. Antennæ with the scape dark brown, the remainder of organ black; flagellar segments oval, with short inconspicuous verticils. Anterior vertex silvery, the posterior portion of head darkened.

Pronotum pale brown above, more blackened laterally. Mesonotal præscutum reddish yellow on sides and humeral portion, the disk chiefly covered by three, dull black, confluent stripes; scutal lobes dull black, the median area somewhat paler, traversed by a narrow, more blackened, median vitta; scutellum pale brown; postnotum dull black. Pleura almost uniformly yellow. Halteres with the stem yellow, the knob infuscated. Legs with the coxæ, trochanters, and femora yellow; tibiæ and tarsi darker brown, the terminal tarsal segments even darker. Wings (Plate 1, fig. 5) with an almost uniform grayish yellow suffusion, very restrictedly patterned with darker, distributed as fol-

³ *Limonia (Geranomyia) pictorum* Alexander, Philip. Journ. Sci. 40 (1929) 247; new name for *L. (G.) pulchripennis* (Brunetti), Fauna Brit. India, Dipt. Nematocera (1912) 393; preoccupied.

lows: Three very small spots, at the supernumerary crossvein in cell Sc, origin of Rs and tip of Sc, respectively; stigmal area larger, oval; cord and outer end of cell 1st M_2 not, or at most only narrowly, seamed with darker; veins yellow, darker in the infuscated portions. Venation: Sc of moderate length, Sc_1 ending about opposite two-thirds the length of Rs, Sc_2 at its tip; supernumerary crossvein in cell Sc at near midlength of the distance between arculus and origin of Rs; free tip of Sc_2 lying a little proximad of R_2 , the latter curved gently into vein R_1 to form a composite arcuated vein; m-cu close to fork of M.

Abdominal tergites dark brown, the caudal borders scarcely paler; sternites obscure yellow, with broad paler posterior margins. Ovipositor with the genital shield pale; cerci and hypovalvæ short and slender, horn-colored.

Habitat.—Assam (Khasi Hills).

Holotype, female, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

The most similar described species in the Oriental fauna are *Limonia* (*Geranomyia*) *atrostriata* (Edwards), of Formosa, and *L. (G.) notatipennis* (Brunetti), of the Abor district of northern Assam, both of which have the dark pattern of the wings restricted in a manner somewhat similar to that in the present fly. The latter species differs evidently in the coloration of the thoracic dorsum, the legs, and the wings.

ANTOCHA (ANTOCHA) PLUMBEA sp. nov. Plate 1, fig. 6.

Belongs to the *vitripennis* group; general coloration gray, the præscutal stripes poorly indicated; posterior portions of mediotergite and the ventral sternopleurite more blackened; antennæ black throughout, the terminal segment elongate; halteres pale yellow; legs black, the femoral bases restrictedly obscure yellow; wings whitish, the prearcular region more milky white; stigma oval, pale brown; veins brown, conspicuous against the ground; Rs unusually long; R_2 lying a short distance beyond level of r-m; m-cu about one-third its length before the fork of M; abdomen brownish black.

Female.—Length, about 5 millimeters; wing, 5.

Rostrum light brown; palpi black. Antennæ short, black throughout; basal flagellar segments subglobular to short-oval; intermediate segments oval; outer segments more elongate, the terminal one longest, about one-half longer than the penultimate; verticils exceeding the segments in length, except on the outer ones. Head dark gray.

Mesonotum gray, the præscutum with the usual stripes only a trifle darker and more infuscated than the ground color; scutal lobes darkened; mediotergite more blackened on posterior half. Pleura black, the surface strongly pruinose, the ventral sternopleurite more polished black; dorsopleural region darkened. Halteres pale yellow throughout. Legs with the coxæ black, pruinose; trochanters testaceous-yellow; remainder of legs black, only the femoral bases narrowly obscure yellow, the amount subequal on all legs. Wings (Plate 1, fig. 6) whitish, the prearcular region clearer milky white; cells C and Sc a trifle more yellow; stigma oval, pale brown; veins brown, distinct against the ground, pale in the prearcular and costal areas. Vein R_3 with trichia only on about the distal fourth. Venation: Rs unusually long, approximately twice R alone; R_2 relatively short and pale, traversing the outer end of stigma, subequal in length to R_{1+2} and lying distinctly beyond the level of r-m; cell 1st M_2 small; m-cu about one-third its length before the fork of M.

Abdomen brownish black; valves of ovipositor brownish horn-color.

Habitat.—Sumatra (south).

Holotype, female, Tandjong Sakti, Benkoelen, altitude 1,650 to 2,000 feet, June 1 to 10, 1935 (*Walsh*).

Antocha (*Antocha*) *plumbea* is most generally similar to *A.* (*A.*) *javanensis* Alexander, of western Java, differing especially in the dark plumbeous-gray coloration, black antennæ and legs, and the slightly longer Rs.

ANTOCHA (ANTOCHA) BASIVENA sp. nov. Plate 1, fig. 7; Plate 2, fig. 27.

Belongs to the *nigribasis* group; general coloration pale yellow, the thorax unmarked; vertex darkened medially; legs pale brown; wings tinged with pale cream-color; stigma brown; R_{2+3} short; cell 1st M_2 small, shorter than any of the veins issuing from it; m-cu far before the fork of M; male hypopygium with the inner gonapophysis appearing as very flattened, long-oval spatulas; outer apophysis a pale sinuous rod, its distal end slightly expanded, the tip acute.

Male.—Length, about 2.6 to 3 millimeters; wing, 3 to 3.5.

Rostrum obscure yellow; palpi brown. Antennæ brown throughout; flagellar segment oval, with short verticils. Head yellow, the vertex darkened medially.

Entire thorax very pale yellow, unmarked. Halteres pale yellow. Legs with the coxæ and trochanters yellow; remainder of legs uniformly pale brown, the terminal tarsal segments scarcely

darkened. Wings (Plate 1, fig. 7) tinged with pale cream-color, the radial field more whitened; stigma oval, brown, relatively conspicuous against the ground; veins pale brown. Venation: Sc ending at near three-fourths the length of the long Rs; R_2 subequal to R_{1+2} and a little shorter than R_{2+3} ; cell 1st M_2 small, shorter than any of the veins issuing from it; m-cu unusually far basad, more than its own length before the fork of M.

Abdomen uniformly yellow. Male hypopygium (Plate 2, fig. 27) with the outer dististyle, *od*, a gently curved pale blade, the apex narrowly rounded. Inner dististyle, *id*, pale, a little longer than the outer, with conspicuous pale setæ on outer half. Inner gonapophysis, *ig*, a very broadly flattened, long-oval spatula; outer apophysis, *og*, a slender, sinuous, pale rod, a little widened towards outer end, the long-produced apex acute.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Paratopotype, male.

Antocha (Antocha) basivena is readily told from the other Indian species of the *nigribasis* group by the small size, unmarked wings, venation, and structure of the gonapophyses of the male hypopygium.

All of the species of *Antocha* described from British India (Himalayan Region) by Brunetti belong to the *vitripennis* group, having vein R_2 in approximate transverse alignment with r-m and with m-cu close to the fork of M. These species include *Antocha (Antocha) indica* Brunetti, A. (A.) *triangularis* (Brunetti), and A. (A.) *unilineata* Brunetti. Four additional members of the genus recently taken in the Khasi Hills, Assam, by Mr. Sircar belong to the *nigribasis* group, distinguished by having vein R_2 lying somewhat proximad of the level of r-m, so that vein R_{2+3} is short to very short, and with m-cu placed at a considerable distance before the fork of M. Except for the closed cell 1st M_2 , the venation of the various members of this group is almost exactly like that of members of the subgenus *Orimargula* Mik.

The four species mentioned may be distinguished by means of the accompanying key.

1. Femora pale yellow, the tips narrowly and abruptly blackened; wings with a restricted dark pattern, in addition to the stigmal darkening, best evidenced by narrow seams along the cord..... 2.
- Femora uniformly pale brown or with the tips only insensibly darkened; wings unmarked except for the small stigmal area..... 3.

2. Prearcular field of wing and cell Sc to opposite the origin of Rs blackened A. (A.) *khasiensis* Alexander.
 Prearcular field of wing and cell Sc entirely clear.
 A. (A.) *sparsipunctata* sp. nov.
3. Thorax entirely pale yellow, immaculate; cell 1st M_2 small, shorter than any of the veins issuing from it..... A. (A.) *basivena* sp. nov.
 Thorax yellow, the præscutum with a brown median stripe; cell 1st M_2 larger, subequal in length to vein M_1 beyond it.
 A. (A.) *scelesta* sp. nov.

ANTOCHA (ANTOCHA) SCELESTA sp. nov. Plate 1, fig. 8; Plate 2, fig. 28.

Belongs to the *nigrbasis* group; general coloration obscure brownish yellow, the præscutum with a conspicuous, dark brown, median stripe; pleura with ventral anepisternum and ventral sternopleurite weakly darkened; wings milky white, unmarked except for the small, irregular, pale brown stigma; m-cu approximately its own length before the fork of M; male hypopygium with the outer dististyle at apex produced into a spikelike point; outer gonapophysis slender, nearly parallel-sided on distal portion, the tip acute.

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

Female.—Length, about 4.5 millimeters; wing, 4.

Rostrum obscure yellow; palpi dark brown. Antennæ short; scape obscure yellow; flagellum brownish black; flagellar segments oval. Head reddish brown, the front, anterior vertex, and posterior orbits more buffy.

Pronotum dark brown medially, paling to yellow on the sides. Mesonotum obscure brownish yellow, the præscutum with a conspicuous, dark brown, median stripe, widest in front, suddenly narrowed behind, becoming obsolete before the suture; no trace of lateral stripes; mediotergite a little darkened, especially behind. Pleura obscure yellow, the ventral anepisternum and ventral sternopleurite slightly darkened. Halteres pale yellow throughout. Legs with the coxæ and trochanters yellow; femora obscure yellow, the tips narrowly and very insensibly darkened; tibiæ a little darker than the yellow tarsi. Wings (Plate 1, fig. 8) with the ground color milky white, the prearcular and costal portions a trifle more cream-colored; veins pale brown, even lighter colored in the creamy areas; stigma small and irregular in outline, pale brown. Venation: R_{2+3} short, as in the group, only about one-third of the basal section of R_{4+5} ; cell 1st M_2 of moderate size, about as long as vein M_4 beyond it; m-cu approximately its own length before the fork of M.

Abdomen pale brown, the sternites and hypopygium a trifle more yellow. Male hypopygium (Plate 2, fig. 28) with the outer dististyle, *od*, rather strongly curved, at apex produced into a long, spikelike point. Outer gonapophysis, *og*, slender, very gently curved, beyond the slightly dilated basal portion nearly parallel-sided for its entire length, the tip narrowed to an acute point.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Allotopotype, female.

The closest ally is *Antocha* (*Antocha*) *basivena* sp. nov., which differs especially in the uniformly pale yellow coloration, the details of venation, and the structure of the male hypopygium, notably of the outer dististyle and gonapophyses. The other related regional species may best be separated by the key given under the account of the preceding species.

ANTOCHA (ANTOCHA) SPARSIPUNCTATA sp. nov. Plate 1, fig. 9.

Belongs to the *nigrbasis* group; general coloration pale yellow, including the entire thorax and abdomen; tips of femora and tibiae narrowly darkened; wings pale yellow, the prearcular, costal, and subcostal areas pale; a restricted dark pattern at origin of R_s , stigma, cord, and outer end of cell 1st M_2 ; R_{2+3} short, m-cu more than its length before the fork of M ; male hypopygium with the outer dististyle slender, the tip subacute.

Male.—Length, about 4 millimeters; wing, 4.5.

Rostrum yellow; palpi dark brown. Antennae brown throughout; flagellar segments oval. Head darkened above.

Entire thorax pale yellow, unmarked. Halteres pale yellow. Legs yellow, femoral tips narrowly dark brown, the amount of color subequal on all legs; tibiae yellow, tips more narrowly darkened; tarsi yellow, the outer segments infuscated. Wings (Plate 1, fig. 9) almost uniformly suffused with pale yellow, the prearcular and costal portions a very little more brightened; a restricted dark pattern, distributed as follows: Origin of R_s ; cord and outer end of cell 1st M_2 ; veins pale, darkened in the infuscated portions; veins beyond cord somewhat darker in color than most of the more basal veins. Venation: R_2 lying far before level of r-m; R_{2+3} shortened; m-cu more than its own length before the fork of M .

Abdomen, including hypopygium, entirely pale yellow. Male hypopygium much as in *khasiensis*, the outer dististyle somewhat more slender, with the apex subacute.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Paratopotype, male.

Antocha (*Antocha*) *sparsipunctata* finds its closest relative in *A. (A.) khasiensis* Alexander, which differs in the darkened wing base and cell Sc, slightly different body coloration, and the short and broad outer dististyle of the male hypopygium, with the apex obtusely rounded.

ANTOCHA (ORIMARGULA) PRÆSCUTALIS sp. nov. Plate 1, fig. 10.

General coloration of thorax reddish brown, the præscutum dark brown on median portion in front; lateral margin of præscutum behind the humeral region with a large velvety-black spot; thoracic pleura pruinose, with very large velvety-black areas covering most of the anepisternum and pleurotergite; halteres yellow; legs with the femora brown, the tibiæ light brown with the tips narrowly darkened; wings pale gray, the prearcular area paler; stigma darker; veins brown; abdomen brown, the bases of the individual sternite paler.

Male.—Length, about 4.5 to 5 millimeters; wing, 5 to 5.3.

Female.—Length, about 5 millimeters; wing, 6 to 6.2.

Rostrum brown; palpi black. Antennæ black, the basal segment more pruinose; flagellar segments oval, with a dense white pubescence and short verticils; terminal segment a trifle longer than the penultimate. Front and anterior vertex light gray pruinose; remainder of head dark gray.

Cervical sclerites dark brown, paler laterally. Pronotum yellow. Mesonotal præscutum reddish brown, broadly darker brown on median portion in front, this color paling to the ground color before midlength of the sclerite; lateral border of præscutum behind the humeral region with a large velvety-black spot; scutum and scutellum grayish brown, the latter brightened on caudal portion; mediotergite chiefly dark brown. Pleura reddish, heavily pruinose, with two large velvety-black areas, one occupying most of the anepisternum, the other most of the pleurotergite. Halteres pale yellow throughout. Legs with the coxæ brownish yellow; trochanters yellow; femora brown; tibiæ light brown, the tips narrowly darker brown, the amount subequal on all legs; tarsi brownish yellow to pale brown. Wings (Plate 1, fig. 10) with a pale grayish tinge, the prearcular area paler; stigma long-oval, pale brown; veins brown, the anterior branch of Rs and R₂ paler. Venation: Rs a little longer than R alone, gently convex; R₂ a little shorter than the slightly

more arcuated R_{2+3} ; petiole of cell M_3 about one-half m-cu, the latter a little more than its own length before the fork of M .

Abdomen brown, the bases of the sternites a little more yellowish brown; hypopygium light yellow.

Habitat.—Sumatra (south).

Holotype, male, Moeara Tenam, Benkoelen, June 16 to 23, 1935 (*Walsh*). Allotopotype, female, with the type. Paratopotypes, 2 males, July 4 to 14, 1935. Paratypes, 2 females, Tandjong Sakti, Benkoelen, altitude 1,650 to 2,000 feet, June 1 to 10, 1935 (*Walsh*).

Antocha (Orimargula) præscutalis is most nearly allied to *A. (O.) maculipleura* Edwards, of Mount Kinabalu, northern Borneo, which has similar velvety-black spots on the thoracic pleura. The present fly is distinguished by its smaller size and the presence of a third conspicuous velvety-black area on the lateral margin of the præscutum.

HELIUS (HELIUS) LECTUS sp. nov. Plate 1, fig. 11.

General coloration pale yellow, without conspicuous markings; antennæ brownish black throughout; head gray; legs brownish yellow to pale brown; wings strongly tinged with yellow, the stigma pale, barely indicated; anterior branch of R_s sinuous, bent gently caudad opposite the stigma; cell 1st M_2 elongate, subrectangular, a little longer than vein M_4 beyond it; abdomen yellow, the tergal incisures and pleural membrane a little darkened.

Female.—Length, including rostrum, about 6.5 millimeters; wing, 6.

Rostrum a little longer than the remainder of head, obscure yellow; palpi pale brown. Antennæ brownish black throughout; flagellar segments short-oval, with inconspicuous verticils. Head gray; anterior vertex narrow, subequal to the diameter of the scape.

Cervical sclerites elongate, light brown. Pronotum and mesonotum uniform yellow to testaceous-yellow, without markings. Pleura testaceous-yellow. Halteres pale, the knobs a little darkened. Legs with the coxæ and trochanters testaceous-yellow; remainder of legs long and slender; femora brownish yellow, the tips scarcely darkened; tibiæ pale brown; tarsi obscure yellow. Wings (Plate 1, fig. 11) with a strong yellow tinge, the prearcular and costal portions a little brighter; stigma pale, barely indicated against the ground; veins brownish yellow. Macrotrichia on vein R_{1+2} , R_3 , R_5 , M_{1+2} and outer portions of M_3 . Venation: Sc_2 ending opposite r-m, much longer than Sc_1 which is

very short to virtually lacking; anterior branch of Rs sinuous, bent gently caudad opposite the stigma, the distal end more or less parallel to vein R_{1+2} , cell R_2 narrow at margin; cell 1st M_2 elongate, subrectangular, slightly exceeding vein M_4 beyond it; m-cu nearly one-half its length beyond the fork of M.

Abdomen yellow, the lateral region and incisures of the tergites restrictedly darkened; sternites more uniformly pale yellow. Ovipositor with valves elongate, horn-colored.

Habitat.—Assam (Khasi Hills).

Holotype, female, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

The most similar regional species is the much larger *Helius* (*Helius*) *ferruginosus* (Brunetti), which differs in the dark body coloration and in the venation, such as the more elongate Rs and uniformly arched anterior branch of Rs, with cell R_2 at margin less than one-third as extensive as cell R_3 . I am basing the above statements on a comparison of the type of *lectus* with metatypical specimens of *ferruginosus*. The latter are from lower altitudes of the Darjiling district, eastern Himalayas, altitude 2,000 to 4,500 feet, and may not be conspecific with the actual type of *ferruginosus*, which was from the Dawna Hills, Lower Burma. I believe the material is correctly named, since the venation agrees closely with that of the type as figured by Bagchi.⁴

HELIUS (HELIUS) SELECTUS sp. nov. Plate 1, fig. 12.

General coloration black, the præscutum with four more reddish brown stripes; rostrum black; antennæ black throughout; halteres and legs black, the femoral bases and outer tarsal segments paler; wings weakly suffused with brown, the stigma and costal border darker; cell 1st M_2 shorter than any of the veins issuing from it; abdominal tergites black, sternites yellow, the subterminal segments obscure.

Female.—Length, including rostrum, about 8 millimeters; wing, 7.5.

Rostrum black, a little longer than the remainder of head. Antennæ black throughout; flagellar segments oval, the outer segments more elongate; verticils subequal in length to the segments. Head black.

Cervical region and pronotum black. Mesonotal præscutum brownish black, with four more reddish brown stripes, the in-

⁴ Brunetti, Fauna Brit. India, Diptera Nematocera (1912) pl. 8, fig. 8.

intermediate pair only narrowly separated by a capillary dark vitta; scutal lobes dark brown, the median area obscure yellow; scutellum brownish black; mediotergite dark liver brown. Pleura with the dorsal sclerites and the pleural membrane brownish black; the ventral portion, including the outer half of the fore coxæ, ventral sternopleurite, and meron, obscure yellow. Halteres black. Legs obscure yellow, the fore coxæ darkened on proximal half; trochanters obscure yellow; legs black, the femoral bases restrictedly brightened, the outer tarsal segments paling to obscure brownish yellow. Wings (Plate 1, fig. 12) with a weak brown suffusion, the stigma long-oval, darker brown; cell C brownish yellow, cell Sc a little more darkened; veins dark brown. Costal fringe (female) dense but relatively short; virtually complete series of trichia on Rs and branches, and on outer sections of all medial veins. Venation: Sc₁ with distal end atrophied, Sc₂ close to its tip; Rs long and nearly straight; anterior branch of Rs gently but evenly arcuated, narrowing cell R₂ opposite the stigma, the tip of the vein very gently upcurved; cell R₃ at margin a little less than three times cell R₂; cell 1st M₂ relatively small, short-rectangular, its lower face (M_{3,4}) shorter than any of the veins issuing from the cell; m-cu a short distance before the fork of M.

Abdominal tergites black, the sternites yellow, with the subterminal segments more obscure. Genital shield of ovipositor darkened; valves yellowish horn-colored.

Habitat.—Assam (Khasi Hills).

Holotype, female, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935 (*Sircar*).

Allied to *Helius* (*Helius*) *nigriceps* Edwards and related forms, differing in the large size, body coloration, and wing venation.

ORIMARGA (ORIMARGA) DISTIVENULA sp. nov. Plate 1, fig. 13.

General coloration brown, the pleura more brownish yellow; wings relatively broad, faintly tinged with brown, the entire costal border narrowly more yellowish; no macrotrichia on anterior branch of Rs; Sc₁ ending almost opposite fork of Rs; free tip of Sc₂ lying distad of R₂; m-cu just beyond midlength of Rs.

Male.—Length, about 4.5 millimeters; wing, 4.4.

Rostrum brown; palpi black. Antennæ black throughout; flagellar segments oval. Head dark brown, the front and anterior vertex a little brighter; anterior vertex relatively wide.

Pronotum dark brown. Mesonotum uniformly brown, without stripes, the lateral portions of præscutum a little brightened.

Pleura brownish yellow. Halteres white, the knobs infuscated. Legs with the coxæ and trochanters yellow; remainder of legs dark brown, the tarsi a little brightened. Wings (Plate 1, fig. 13) relatively broad, faintly tinged with brown, the entire costal border narrowly more yellowish; veins pale brown, a trifle more yellowish in the costal field. Costal fringe relatively short; no macrotrichia on anterior branch of Rs; a series of about fifteen on distal section of vein R_{4+5} ; sparse, scattered trichia on outer ends of veins M_{1+2} and M_3 ; remaining veins beyond cord without trichia. Venation: Sc long, Sc_1 ending almost opposite the fork of Rs, Sc_2 a short distance from its tip; free tip of Sc_2 lying distad of level of R_2 ; Rs long, nearly twice the basal section of R_{4+5} ; R_{2+3} shorter than the basal section of R_{4+5} , subequal to R_{1+2} ; m-cu just beyond midlength of Rs; vein 2d A long.

Abdominal tergites dark brown; sternites more testaceous-yellow; hypopygium broken.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935 (*Sircar*).

Orimarga (Orimarga) distivenula is very distinct from the other species of the genus in eastern Asia, the chief characters being its broad wings with vein Sc of unusual length and the distal position of the free tip of Sc_2 . In all other species of the genus the latter element is either atrophied or lies opposite to some distance before the level of R_2 . The present instance is of unusual interest in that it parallels the condition found in the allied genus *Limonia*, where numerous species are known that have the free tip of Sc_2 migrated distad beyond the level of R_2 .⁵

ORIMARGA (ORIMARGA) SUBBASALIS sp. nov. Plate 1, fig. 14.

Closely allied to *basalis*; general coloration of mesonotum gray pruinose; knobs of halteres weakly darkened; legs brownish black; wings narrow, weakly suffused with gray, the prearcular field restrictedly brightened; numerous macrotrichia on veins beyond cord; Sc long, free tip of Sc_2 faint; R_{2+3} long, exceeding the strongly arcuated Rs.

Female.—Length, about 7 to 7.5 millimeters; wing, 6.

⁵ Alexander, C. P., The interpretation of the radial field of the wing in the nematoceros Diptera, with special reference to the Tipulidæ, Proc. Linn. Soc. New South Wales 52 (1927) 42-72, 92 figs.—A comparison of the systems of nomenclature that have been applied to the radial field of the wing in the Diptera, IVth Internat. Cong. Ent., Trans. 2 (1929) 700-707, 3 pls.—In Curran, C. H., The families and genera of North American Diptera (1934) 38-39, figs.

Rostrum obscure yellow; palpi black. Antennæ black throughout; flagellar segments oval, with a short, dense, white pubescence; terminal segment shorter than the penultimate. Head dark gray, more silvery on the front; anterior vertex relatively narrow, slightly blackened.

General coloration of mesonotum gray pruinose, the central portion of præscutum a little darker; median region of scutum slightly paler gray. Pleura brown, the extensive sternopleurite much paler, sparsely pruinose. Halteres white, the knobs weakly darkened. Legs with the coxæ reddish yellow, the fore coxæ slightly darker; trochanters yellowish brown; femora brownish black, the bases narrowly and vaguely brightened; tibiæ and tarsi brownish black. Wings (Plate 1, fig. 14) narrow, weakly suffused with gray, the prearcular field restrictedly whitened; veins pale brown. Macrotrichia abundant on veins beyond cord, there being more than fifty-five on distal section of R_{4+5} , more crowded towards outer end of vein. Venation: Sc long, Sc_1 ending a short distance before fork of Rs, Sc_2 close to its tip; free tip of Sc_2 faint, a distance before R_2 about equal to the length of vein R_{1+2} ; R_{2+3} long, exceeding the strongly arcuated Rs; R_{1+2} a little less than one-half R_{2+3} ; cell M_3 longer than its petiole; m-cu placed unusually far basad, opposite the origin of Rs or nearly so.

Abdominal tergites dark brown; sternites obscure yellow to reddish yellow. Ovipositor with tergal shield pale; valves darker.

Habitat.—Assam (Khasi Hills).

Holotype, female, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Paratopotypes, 2 females.

Orimarga (Orimarga) subbasalis is most closely allied to *O. (O.) basalis* Alexander (Kashmir), agreeing closely in the venation and trichiation of the veins, differing most evidently in the darkened knobs of the halteres, brownish black femora, and gray wings with more evidently darkened veins. In *basalis* the halteres are whitish throughout, the femora are pale with a poorly indicated darker subterminal ring, and the wings are pale yellow, with yellow veins.

PEDICINI

NIPPONOMYIA KHASIANA sp. nov. Plate 1, fig. 15; Plate 2, fig. 29.

General coloration yellow, the præscutum and scutum with a pattern of eight black spots arranged in a circle; femora entirely yellow; tibiæ yellow, the tips narrowly blackened; wings whitish hyaline, with a clear yellow submarginal stripe extending from

the wing base to near apex; costal cell with four brown spots, the outermost at tip of vein Sc_1 ; no continuous dark seam on cord; cell M_2 open by atrophy of m.

Male.—Length, about 9 millimeters; wing, 8.5.

Female.—Length, about 10 to 11 millimeters; wing, 8.

Rostrum and palpi yellow. Antennæ yellow, only the terminal flagellar segments a very little more infuscated; flagellar segments short and crowded. Head uniformly pale yellow.

Mesonotal præscutum yellow, with three more polished yellow stripes and a transverse series of four circular black spots, the intermediate pair placed just behind midlength of the sclerite, the lateral pair a little nearer the suture, gently curving the row; scutum with lobes deep yellow, variegated on cephalic-lateral portion and again on posterior-median area of each lobe by a circular black spot; the eight marks on the præscutum and scutum thus form a short-oval figure but with no additional darkened sutural area, as in *novempunctata*; posterior sclerites of notum uniformly yellow. Pleura pale yellow throughout. Halteres yellow. Legs yellow, the femora entirely unvariegated; tips of all tibiæ narrowly but conspicuously blackened, the amount subequal on all legs; tarsi yellow, the tips of the individual basal segments narrowly darkened; outer tarsal segments uniformly infuscated. Wings (Plate 1, fig. 15) whitish hyaline, with the usual clear yellow submarginal stripe extending from the wing base to near apex, bordered both above and below by a narrow brown streak; clear portion of costal cell without black dashes but with four brown extensions, the last at tip of Sc_1 ; extreme wing tip clear; cord virtually undarkened, with a narrow seam on m-cu; vein Cu narrowly bordered with brown on basal portion; veins pale, darker in the clouded areas. Venation: As in the genus; basal section of R_5 very short to virtually lacking; cell M_2 open by atrophy of m; m-cu at or close to fork of M.

Abdomen obscure yellow, the tergites very vaguely darkened at bases. Male hypopygium (Plate 2, fig. 29) with the dististyle, *d*, trispinous. Interbase, *i*, as figured, expanded on basal portion.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Allotopotype, female. Paratopotypes, 2 females.

Nipponomyia khasiana is very different from the only species of the genus hitherto discovered in India, *N. novempunctata*

(Senior-White)⁶ likewise from the Khasi Hills. By my key to the known species of *Nipponomyia*,⁷ the present fly runs to couplet 6, including *trispinosa* (Alexander), of Japan, and *sumatрана* (de Meijere), of Sumatra. It is readily told by the pattern of the thorax, legs, and wings, and by the open cell M_2 . The fly is one of the smallest species of the genus so far discovered.

HEXATOMINI

ADELPHOMYIA (ADELPHOMYIA) DISCALIS sp. nov. Plate 1, fig. 16; Plate 2, fig. 30.

General coloration pale yellow; antennæ 16-segmented, the scape and pedicel brownish black, the flagellum obscure yellow; halteres and legs yellow; wings pale yellow, the anterior cord restrictedly darkened, the color including the veins; no trichia in cells of wing; Rs long, arcuated at origin; R_{2+3+4} short; R_{2+3} subequal to R_2 ; cell M_1 present; male hypopygium with the basistyle produced apically into a subacute spine; outer dististyle trispinous at apex.

Male.—Length, about 4.8 to 5.2 millimeters; wing, 5.5 to 6.

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

Rostrum dark; palpi black. Antennæ 16-segmented; scape and pedicel brownish black, flagellum obscure yellow; flagellar segments gradually becoming more slender and elongate outwardly, the longest verticils of the outer segments subequal in length to the segments themselves. Head obscure yellow; eyes (male) large, restricting the anterior vertex.

Entire thorax uniformly pale yellow. Halteres pale yellow throughout. Legs yellow, the terminal two tarsal segments darker. Wings (Plate 1, fig. 16) uniformly pale yellow, variegated only by a restricted dark cloud on the anterior cord, most evident in the dark brown veins of the area; remaining veins yellow. Wing widest just basad of end of vein 2d A; no macrotrichia in outer cells of wing. Venation: Sc_1 ending nearly opposite fork of Rs, Sc_2 removed a short distance from its tip; Rs long, arcuated at origin; R_{2+3+4} relatively short, nearly twice the length of R_{2+3} , the latter subequal to or longer than R_2 ; r-m relatively long, arcuated; cell M_1 small, less than one-half its petiole; m-cu at near midlength of lower face of cell 1st M_2 ; vein 2d A long, ending beyond the level of origin of Rs.

Abdomen, including hypopygium, yellow. Male hypopygium (Plate 2, fig. 30) with the basistyle, *b*, produced caudad beyond

⁶ Senior-White, Mem. Dept. Agr. India, Ent. Ser. 8 (1922) 138-139.

⁷ Alexander, C. P., Philip. Journ. Sci. 56 (1935) 551-552.

the point of insertion of the dististyles, the apex subspinous, with long coarse setæ almost to the tip. Outer dististyle, *od*, trispinous at apex. Inner dististyle, *id*, broad at base, narrowed to the obtuse tip.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Allotopotype, female. Paratopotypes, 3 males.

Adelphomyia (Adelphomyia) discalis is very distinct from the other known Asiatic species of the genus in the pale yellow wings with a single restricted darkened cloud on disk, and in the lack of macrotrichia in the cells of the wing. All other species of the genus so far made known have at least a few trichia in the outer radial of medial fields. The structure of the male hypopygium of the present fly is entirely as in the genus, and there can be no question as to the systematic position of the species.

ADELPHOMYIA (ADELPHOMYIA) SUBNEBULOSA sp. nov. Plate 1, fig. 17; Plate 2, fig. 31.

Allied to *nebulosa*; general coloration brownish black; antennæ with basal five segments yellow, the remainder black; femora blackened outwardly, with a narrow, pale yellow, subterminal ring; tibiæ dark brown, the extreme base and tip pale; tarsi brownish yellow; wings cream-yellow, with a heavy clouded brown pattern, including three virtually complete crossbands on the basal third; all veins at wing margin with large clouds; R_2 some distance before fork of R_{3+4} ; cell M_1 longer than its petiole; anal veins strongly curved to margin; male hypopygium with basistyle terminating in a slender blackened spine.

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

Rostrum and palpi black. Antennæ 16-segmented; scape, pedicel, and basal three flagellar segments light yellow, the remainder of flagellum black; flagellar segments becoming long-cylindrical, with long conspicuous verticils that exceed the segments in length. Head brownish black, the anterior vertex paler.

Mesonotum almost uniform brownish black, the surface polished; humeral region of præscutum restrictedly obscure brownish yellow. Pleura brownish black, with a silvery longitudinal stripe across the dorsal sternopleurite and ventral pteropleurite, ending before the halteres. Halteres with base of stem and the knob yellow, the remainder of stem dusky. Legs with the coxæ and trochanters obscure yellow; femora obscure yellow

basally, passing into black at (on forelegs) or beyond (middle and hind legs) midlength, with a narrow, light yellow, subterminal ring placed at about its own length before the black apex; tibiae dark brown, the base very narrowly, the tip a little more broadly, whitened, the subbasal portion of the segment a little more intensely darkened; tarsi brownish yellow, the terminal two segments darker. Wings (Plate 1, fig. 17) obscure cream-yellow, with a heavy clouded brown pattern, including three narrow, virtually complete crossbands on proximal third, the first arcular, the third extending from costa opposite origin of R_s to end of vein $2d A$; on central portion of disk, these bands more diffuse and interconnected in cells M and Cu ; other more isolated, dark costal spots at Sc_2 , R_2 , and tip of R_{1+2} , the latter two inclosing a small pale spot, behind becoming confluent and suffusing the entire cord; other small clouds at outer end of cell 1st M_2 and fork of M_{1+2} ; a series of marginal brown clouds at ends of all longitudinal veins, smallest on R_{4+5} and M_1 , becoming progressively larger behind, most extensive on the anal veins; proximal third of cell R_4 clouded; veins pale, darkened in the suffused areas. Rather restricted macrotrichia in outer cells of wing, including cell R_2 beyond vein R_2 , and in the outer ends of cells R_3 to $2d M_2$, inclusive. Wings (male) widest opposite the end of cell 1st A . Venation: Sc_2 removed to some distance from the tip of R_{1+2} ; R_2 oblique, some distance from fork of R_{3+4} ; tips of veins R_3 and R_4 bent rather strongly cephalad, of the medial, cubital, and anal veins, strongly caudad, especially the last; basal section of M_{1+2} reduced to a point, narrowing the base of cell 1st M_2 , r-m correspondingly lengthened; cell M_1 deeper than its petiole; m-cu about one-half its length beyond the fork of M .

Abdomen black; hypopygium a trifle paler, more brownish black. Male hypopygium (Plate 2, fig. 31) with the basistyle, b , terminating abruptly in a slender blackened spine. Outer dististyle, od , slender, with two outer, terminal, curved spines and an inner straight point.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Paratopotypes, males.

The only near ally of the present fly is *Adelphomyia* (*Adelphomyia*) *nebulosa* (de Meijere), of western Java, which has the venation of the radial and medial fields almost the same as in the insect under consideration. This latter species differs most evidently in the details of pattern of the legs and wings.

From de Meijere's figure of the type of *nebulosa*,⁸ it appears that in this species the macrotrichia of the cells of the wing are more numerous and that the anal veins are not strongly curved into the wing margin. It is certain that the generic name *Oxydiscus*, proposed by de Meijere for this fly, must fall as a strict synonym of *Adelphomyia*, the male hypopygium being entirely distinctive.

LIMNOPHILA (DICRANOPHRAGMA) MULTIGEMINATA sp. nov. Plate 1, fig. 18; Plate 2, fig. 32.

General coloration of mesonotum reddish brown, the posterior sclerites and the pleura more blackened; antennæ black, the pedicel and first flagellar segment yellow; legs yellow, the femora with a very indistinct darker subterminal ring; wings broad in male, narrower in female, pale yellow, heavily patterned with dark brown, the areas restricted to the vicinity of the veins; markings along cord and at the supernumerary crossvein in cell R₃ more extensive and subtended on either side by smaller dark dots; a series of subterminal brown spots in cells R₄ to 1st A; abdomen black, the hypopygium more brightened.

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

Female.—Length, about 6.5 to 6.8 millimeters; wing, 6 to 6.2.

Rostrum and palpi black. Antennæ short in both sexes; scape black; pedicel and first flagellar segment light yellow; remainder of flagellum black; flagellar segments oval, becoming more slender and elongate outwardly. Head black.

Pronotum dark brown. Mesonotal præscutum reddish brown, darkened in front and on sides; scutum reddish brown; scutellum and postnotum dark brown, sparsely pruinose. Pleura black. Halteres weakly suffused with dusky, the base of stem restrictedly paler. Legs with the coxæ brownish black; trochanters obscure yellow, the tips narrowly darkened; femora yellow, with a narrow and very indistinct darker ring just before the tip; remainder of legs yellow; setæ of legs very long and conspicuous. Wings (Plate 1, fig. 18) much broader in male than in female, in the former widest opposite the termination of vein 2d A; ground color pale yellow, the basal cells slightly washed with dusky; a heavy dark brown pattern that is chiefly confined to the vicinity of the veins, the interspaces being immaculate; the chief markings are as follows: Postarcular; origin of Rs; along cord and centering about the supernumerary crossvein in cell R₃, these markings narrowly bordered by yellow and subtended

⁸ Tidj. voor Ent. 51 (1913) pl. 17, fig. 16.

on either side by smaller spots; outer end of cell 1st M_2 and fork of M_{1+2} restrictedly darkened; a series of small subterminal spots in cells R_4 to 1st A, respectively, placed just cephalad of the vein and slightly back from the margin, the vein beyond this point more heavily darkened to the wing border; extreme axilla weakly darkened; veins pale, darker in the clouded areas. Venation: Supernumerary crossvein in cell R_3 oblique, placed at near two-thirds the length of cell; cell M_1 shallow, subequal to its petiole; cell 1st M_2 subrectangular, a little widened outwardly; m-cu about one-half its length beyond fork of M; vein 2d A bent rather strongly to border, simple in both sexes.

Abdomen black, the hypopygium more brightened. Male hypopygium (Plate 2, fig. 32) with the outer dististyle, *od*, nearly straight, unequally bidentate at tip, the terminal spine much stouter and more strongly curved than the outer subapical one.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*). Allotopotype, female. Paratopotypes, several females.

The nearest relative of the present fly would appear to be *Limnophila* (*Dicranophragma*) *venustipennis* Alexander (*pulchripennis* Brunetti, preoccupied), of the eastern Himalayas. The present species is distinguished by the simple 2d anal vein of both sexes and the nature of the wing pattern, especially the geminate smaller spots subtending the larger dark areas along the cord and in the outer radial field. It seems virtually certain that Brunetti had two species confused in his original description. The true *venustipennis* is discussed in some detail below.

LIMNOPHILA (DICRANOPHRAGMA) VENUSTIPENNIS Alexander.

Dicranophragma pulchripennis BRUNETTI, Fauna Brit. India, Dip. Nematocera (1912) 524 (preoccupied in *Limnophila*).

Limnophila (*Dicranophragma*) *venustipennis* ALEXANDER, Insec. Inscit. Menst. 9 (1921) 180.

Several females that I am referring to this species are from Cherrapunji, Khasi Hills, Assam, altitude 4,000 to 5,000 feet, taken at light, August, 1935, by Mr. S. Sircar. The wings of the female are much narrower than in the males, while the 2d anal vein is simple. In the males of the type series of *pulchripennis* vein 2d A is forked near its outer end, as described by Edwards⁹ and shown by a paratypical specimen in my collection. The proximal spur of this fork is surrounded by the most basal

⁹ Rec. Indian Mus. 26 (1924) 303.

of the marginal darkened areas of the wing. Brunetti describes the thorax as being dark-colored, but the ground color is dark brown, the surface chiefly covered by more reddish brown stripes.

ERIOPTERINI

TRENTEPOHLIA (MONGOMA) SUBTENERA sp. nov. Plate 1, fig. 19.

Allied to *tenera*; general coloration of mesonotum almost uniformly dark brown, the scutellum clear yellow; femoral tips and tibial bases narrowly but conspicuously whitened; tibial tips broadly and conspicuously snowy white, the amount including approximately the distal fourth of the segment; tarsi snowy white; wings pale gray; veins R_{1+2} , R_2 , and R_{3+4} subequal; inner end of cell R_5 lying a little more distad than that of cell M_3 .

Female.—Length, about 8 millimeters; wing, 6.3.

Rostrum obscure yellow; palpi black. Antennæ black throughout; flagellar segments oval, the outer two segments shorter; verticils shorter than the segments and only a little more conspicuous than the normal pubescence. Head dark gray; anterior vertex reduced to a linear strip.

Pronotum above dark brown. Mesonotal præscutum and scutum almost uniformly dark brown, the median area of the latter a little paler; scutellum clear light yellow, the parascutella slightly darker; postnotum yellowish brown. Pleura with the dorsal and anterior sclerites infuscated, the posterior portions adjoining the wing root more yellow. Halteres dusky. Legs with the coxæ brownish yellow, the fore coxæ a trifle darker; trochanters yellow; femora dark brown, the tips rather narrowly but conspicuously white, the amount subequal on all legs and involving approximately one-ninth of the segment; tibiæ dark brown, the bases narrowly but conspicuously white, in degree about one-half as extensive as the femoral tips, passing gradually into the dark ground color; tibial tips broadly, conspicuously, and abruptly snowy white, including approximately one-fourth the total length of the segment; tarsi snowy white, the terminal segment weakly darkened; tips of posterior tibiæ very slightly enlarged and with the snowy-white vestiture more erect and conspicuous; posterior femora with about ten small spines in a linear row near base. Wings (Plate 1, fig. 19) relatively narrow, uniformly pale gray, cell Sc a trifle darker; veins pale brown. A scattered series of about eight trichia on vein R_5 . Venation: Sc_1 ending just before the proximal or cephalic end of R_2 ; Rs a little longer than the basal section of R_5 and about in alignment with it; R_{2+3+4} long, gently sinuous; R_{1+2} , R_2 , and R_{3+4} subequal; R_3 oblique; cell

1st M_2 gradually widened outwardly; inner end of cell R_5 lying a trifle more distad than that of cell M_3 ; m-cu close to fork of M; apical fusion of veins Cu_1 and 1st A relatively extensive, longer than the basal section of M_{1+2} .

Abdominal tergites dark brown, the basal segments a little paler; sternites obscure yellow to brownish yellow.

Habitat.—Assam (Khasi Hills).

Holotype, female, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

By all keys to the Oriental species of *Trentepohlia* the present fly runs to *Trentepohlia (Mongoma) tenera* (Osten Sacken), from which it differs in the coloration of the legs and the venation, especially the length of veins R_{3+4} , basal section of M_3 , and apical fusion of Cu_1 and 1st A. Brunetti placed his species *pallidiventris*¹⁰ as a synonym of *tenera*, but this is evidently an error. The species has the femora uniformly darkened beyond the base and the tibiæ whitened only at the tips.

TRENTEPOHLIA (MONGOMA) WALSHIANA sp. nov. Plate 1, fig. 20.

Thorax entirely orange, immaculate; antennæ black throughout; head gray, the posterior portion of vertex and the occiput paling to brown; halteres pale, the knobs light yellow; legs brownish black, the tips of tibiæ and the tarsi paling to yellow; wings whitish subhyaline, the prearcular and costal fields clear light yellow; a restricted dark pattern, including the wing tip; abdomen black, the segments restrictedly variegated by yellow.

Female.—Length, about 10 to 11 millimeters; wing, 9 to 10.

Rostrum dark brown to black; palpi black. Antennæ with scape and pedicel dark brown to black; flagellum black; flagellar segments cylindrical, relatively elongate. Front and anterior vertex light gray, the posterior vertex dark gray in front, paling to brown behind and on the occiput; anterior vertex reduced to a narrow strip, its posterior portion strongly carinate, the ridge continued caudad onto the posterior vertex.

Cervical sclerites light brown. Pronotum and mesonotum uniformly bright orange, the pleura a trifle more yellow. Halteres obscure brownish yellow, the base of stem narrowly yellow, the apex of knob clear light yellow. Legs with the coxæ and trochanters yellow; femora dark brown to brownish black, the extreme bases vaguely brightened; tibiæ pale brown to brownish yellow, becoming brighter at outer ends, the forepair more ex-

¹⁰ Fauna Brit. India Dip. Nematocera (1912) 481; Rec. Indian Mus. 15 (1918) 312.

tensively brightened; tarsi light brownish yellow; femora with about four to twelve small erect spines, fewest on posterior femora. Wings (Plate 1, fig. 20) whitish subhyaline, the prearcular region and cells C and Sc clear light yellow; stigmal area small and restricted, triangular in outline, brownish yellow; wing tip narrowly infuscated, including cells R_3 to $2d M_2$; veins R_2 , cord, and Cu narrowly seamed with brown; veins brown, a little darker in the clouded areas, clear yellow in the flavous portions. Venation: R_2 a short distance before fork of R_{3+4} , its cephalic or proximal end faint to ill-defined in the stigmal area; basal section of M_3 slightly angulated; m-cu close to or shortly before fork of M; apical fusion of Cu_1 and 1st A punctiform.

Abdomen chiefly black, with faint bluish reflections, the dorsopleural region pale; lateral margins of tergites and basal lateral spots on sternites restrictedly yellow; in cases the sternal pale spots are more extensive, forming nearly complete crossbands on the basal rings of the segments. Ovipositor and genital segment deep yellow.

Habitat.—Sumatra (south).

Holotype, female, Boekit Jtam, Benkoelen, altitude 1,000 to 2,000 feet, June 11 to 15, 1935 (*Walsh*). Paratopotype, sex?

I take great pleasure in naming this beautiful crane fly in honor of the collector, Mrs. M. E. Walsh. The nearest described species is *Trentepohlia (Mongoma) auricosta* Alexander (western Java), which differs conspicuously in the coloration of the body, and the details of pattern of the legs and wings.

TRENTEPOHLIA (MONGOMA) EPHIPPIATA sp. nov. Plate 1, fig. 21.

General coloration of thorax black, the lateral and humeral portions of præscutum yellow; halteres brownish black; femora and tibiæ brownish black, the tips of the latter and the tarsi paling to yellow; wings whitish subhyaline, the prearcular and costal regions not conspicuously brightened; a weak darkened pattern, including the wing tip, stigma, and seams along vein Cu and origin of R_s ; abdomen black, the basal rings of the intermediate sternites narrowly obscure yellow.

Female.—Length, excluding head, about 8 millimeters; wing, 7.4.

Head broken.

Cervical sclerites blackened. Pronotum brownish black above, obscure yellow basally on sides. Mesonotal præscutum obscure yellow on humeral and lateral portions, the entire disk covered by three confluent brownish black stripes that cross the suture

and include the scutal lobes; scutellum and postnotum brownish black. Pleura brownish black, the dorsopleural membrane and meral region a little paler. Halteres brownish black, the base of stem narrowly yellow. Legs with the fore and middle coxæ black, the posterior coxæ and all trochanters obscure yellow; femora brownish black, the extreme bases restrictedly brightened; tibiæ black, the distal ends paling to obscure yellow or brownish yellow; armature of legs including a series of four long erect setæ on distal fourth of posterior tibiæ. Wings (Plate 1, fig. 21) whitish subhyaline, including the prearcular region and basal half of costal field; outer portions of cells C and Sc a little more yellowish; stigma conspicuous, dark brown; wing tip weakly and rather narrowly infuscated; narrow but conspicuous brown seams along vein Cu and at origin of Rs, the remainder of cord very insensibly darkened; veins brown, paler in the costal and prearcular fields. Venation: R_2 about one-third its length before the fork of R_{3+4} ; m-cu close to fork of M; inner end of cell M_3 a little more basad than that of cell R_5 ; apical fusion of veins Cu_1 and 1st A punctiform.

Abdomen black, the pleural membrane paler; basal rings of intermediate sternites narrowly obscure yellow. Ovipositor and genital segment yellow.

Habitat.—Sumatra (south).

Holotype, female, Tandjong Sakti, Benkoelen, altitude 1,650 to 2,000 feet, June 11 to 20, 1935 (Walsh).

Trentepohlia (*Mongoma*) *ephippiata* is allied to species such as *T. (M.) auricosta* Alexander, *T. (M.) flavicollis* Edwards, *T. (M.) hainanica* Alexander, and *T. (M.) walshiana* sp. nov., differing conspicuously in the coloration of the body. The blackened discal saddle of the mesonotal præscutum is distinctive.

TRENTEPOHLIA (TRENTEPOHLIA) STREPENS sp. nov. Plate 1, fig. 22.

Size very large; legs long and powerful; general coloration ferruginous yellow, the thorax unmarked; head gray, the vertex strongly carinate; legs yellow, the femoral tips, tibial bases, and tibial tips conspicuously blackened; wings pale yellow, the costal and outer radial fields more saturated yellow; restricted dark seams on veins R_3 , basal section of M_{1+2} , m-cu, and fork of $R_5 + M_{1+2}$; abdomen yellow, the subterminal segments slightly infuscated.

Male.—Length, about 8 millimeters; wing, 7. Posterior leg, femur, 12; tibia, 12.5; tarsus, 8.

Rostrum obscure yellow; palpi brownish black. Antennæ brownish black, the scape a little brightened; flagellar segments

cylindrical, with dense dark pubescence. Head gray; anterior vertex narrow, the carina conspicuous.

Cervical sclerites obscure yellow. Thorax entirely ferruginous-yellow, the surface somewhat polished. Halteres yellow throughout. Legs with the coxæ and trochanters yellow; femora yellow, the tips rather broadly and very conspicuously blackened; tibiæ obscure yellow, the bases narrowly darkened, the tips broadly blackened; tarsi brownish black; legs unusually long and powerful, as shown by the measurements given above; femora with scattered erect setæ over the entire length. Wings (Plate 1, fig. 22) pale yellow, the costal and outer radial field more saturated yellow; a restricted dark pattern, including a narrow brown seam on vein R_3 and somewhat darker seams on posterior cord and fork of R_5+M_{1+2} ; veins yellow, darkened in the clouded areas. Venation: m-cu shortly before fork of M; distal section of Cu_1 strongly arcuated, its apical fusion with 1st A slight.

Abdomen yellow, the subterminal segments slightly infuscated.

Habitat.—Sumatra (south).

Holotype, male, Tandjong Sakti, Benkoelen, altitude 1,650 to 2,000 feet, June 21 to 30, 1935 (*Walsh*).

Trentepohlia (*Trentepohlia*) *strepens* is the largest species of the subgenus so far made known, as is well shown by the leg measurements given above. It is allied to *T. (T.) holoxantha* Alexander and *T. (T.) mcgregori* Alexander, especially to the latter, differing especially in the major size and in the distinctive pattern of the wings.

MOLOPHILUS KHASICUS sp. nov. Plate 1, fig. 23; Plate 2, fig. 33.

Belongs to the *gracilis* group and subgroup; general coloration brown; antennæ (male) short; wings brownish yellow, the macrotrichia dark brown; abdomen dark brown, the hypopygium more yellowish; male hypopygium with all three lobes of basistyle obtuse at tips, with setæ throughout their lengths; three dististyles, all simple rods that are very markedly sinuous, the tips acute or subacute; intermediate and inner styles with spinulæ on distal third.

Male.—Length, about 3.8 millimeters; wing, 4.4.

Rostrum dark brown; palpi black. Antennæ (male) short, if bent backward ending far before the wing root; scape and pedicel light yellow, flagellum dark brown, flagellar segments short-cylindrical, with long conspicuous verticils. Head dark brownish gray.

Pronotum brownish black. Mesonotal præscutum dark brown with a faint reddish cast, somewhat darker colored laterally and on extreme cephalic portion; scutum and scutellum brown; mesodiotergite darker colored. Pleura dark brown, with a vaguely paler longitudinal stripe across the dorsal sternopleurite and ventral pteropleurite, beginning behind the posterior coxæ. Halteres pale yellow throughout. Legs with the coxæ and trochanters brownish yellow; remainder of legs brownish yellow, with dark-colored setæ that obscure the ground; outer tarsal segments more uniformly dark brown. Wings (Plate 1, fig. 23) with a strong brownish yellow tinge, the veins darker brown; macrotrichia dark brown; costal fringe long and dense. Venation: R_2 about opposite r-m; m-cu about one-half the petiole of cell M_3 ; vein 2d A ending opposite caudal end of m-cu.

Abdomen dark brown, the large hypopygium more yellowish. Male hypopygium (Plate 2, fig. 33) with all three lobes of basistyle, *b*, simple and nonspinous, with setæ to their tips. Three dististyles, the outer, *od*, a strongly sinuous, slender rod, its distal third straight; intermediate style, *md*, a simple rod, its distal third very strongly bent and thence narrowed into a spine, this portion of style bearing a linear row of slender teeth; inner style, *id*, a strongly curved simple rod, its distal third with a series of five or six strong spinules. Phallosomic plate oval in outline.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

The *Molophilus* fauna of the Himalayan region is still very poorly known. From the few species hitherto described the present fly is readily told by the unusually large and complicated male hypopygium, in conjunction with the short antennæ of the male sex. The most generally similar species seems to be *Molophilus genitalis* (Brunetti), which has the male hypopygium of entirely different conformation.¹¹

TOXORHINA (CERATOCHEILUS) MESORHYNCHA sp. nov. Plate 1, fig. 24; Plate 2, fig. 34.

General coloration of mesonotal præscutum dark brown, the lateral margins gray; rostrum much shorter than the wing; anterior vertex wide; legs brownish black; wings pale gray, veins light brown; no macrotrichia on R_s or its anterior branch; abdomen brownish black; male hypopygium with the dististyle pro-

¹¹ Edwards, F. W., Rec. Indian Mus. 26 (1924) 300.

duced into a long, straight, apical point, on outer margin at near one-third the length bearing a pale fleshy spine.

Male.—Length, excluding rostrum, about 6 millimeters; wing, 5.3; rostrum, 3.5.

Rostrum much shorter than the wing, black throughout. Antennæ black, the first segment a little pruinose but not at all brightened. Head brown, the front, anterior vertex, and broad posterior orbits light gray; anterior vertex unusually broad, approximately one-third the width of the head at this point, or equal to the visible diameter of either eye.

Pronotum dark brown. Mesonotal præscutum with the dorsum largely occupied by three, confluent, dark brown stripes that restrict the dull gray ground color to the humeral and lateral portions; scutal lobes dark brown, the median area more grayish; scutellum and postnotum gray. Pleura bicolorous, the dorsopleural membrane and dorsal sclerites much darker than the sternopleurite and meral areas, the dark color continued caudad beneath the wing root and including the lateral and caudal portions of the mediotergite. Halteres obscure yellow. Legs with the coxæ gray; trochanters yellowish brown; remainder of legs brownish black. Wings (Plate 1, fig. 24) with a uniform, pale gray tinge; veins light brown. No macrotrichia on Rs or its anterior branch; posterior branch with a series of about twenty on distal section of vein R_5 ; seven or eight trichia on outer section of vein M_{1+2} . Venation: Sc_1 ending just beyond origin of Rs, the latter a little more than one-half as long as its gently sinuous anterior branch; m-cu close to fork of M.

Abdomen brownish black, the hypopygium very little brighter. Male hypopygium (Plate 2, fig. 34) with the basistyle, *b*, provided with a blunt lobe on mesal face near base, this lobe tipped with numerous long coarse setæ. A single, entirely pale dististyle, *d*, produced into a long straight apical point; on outer margin at near the basal third with a slender, gently curved, fleshy spine. Arms of ædeagus, *a*, relatively short.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 to 5,000 feet, August, 1935, at light (*Sircar*).

Toxorhina (Ceratocheilus) mesorhyncha is readily told from *T. (C.) brevifrons* (Brunetti), likewise from Assam, by the wide anterior vertex, short rostrum, uniformly darkened antennæ, and darkened abdominal sternites. I have provided below a redescription of the holotype specimen of *brevifrons*.

TOXORHINA (CERATOCEILUS) BREVIFRONS (Brunetti).

Conithorax brevifrons BRUNETTI, Rec. Indian Mus. 15 (1918) 300.

The holotype, a female, was taken above Tura, Garo Hills, Assam, altitude 3,500 to 3,900 feet, August, 1917, by Dr. Stanley Kemp. I am indebted to Dr. H. Singh Pruthi for the opportunity to reëxamine this specimen and have provided additional notes concerning certain critical points.

Female.—Length, excluding rostrum, about 7 millimeters; wing, 6.3; rostrum, about 8.

Rostrum elongate, exceeding the remainder of body, black throughout. Antennæ black, the small scape obscure yellow. Anterior vertex very narrow, only a little wider than the antennal pedicel, the sides concave; head beneath a little wider than on the vertex. Head brownish gray, the anterior vertex and orbits clear light gray.

Mesonotum dark brown, the humeral region and narrow lateral margins of the præscutum brighter; median region of the scutum paler than the lobes. Pleura dark dorsally, the dorsal portion of the sternopleurite more brownish yellow. Halteres relatively short, dusky. Legs dark brown, the femoral bases restrictedly paler. Wings with a faint brown tinge; veins dark brown. Macrotrichia of veins relatively abundant, there being a series of about five on Rs; apparently lacking on the distal section of M_4 ; a single puncture of R_{2+3+4} shortly beyond origin; a series of at least thirty trichia on distal section of R_5 ; about eight on basal section of R_5 . Venation: Sc_1 ending about opposite two-fifths the length of Rs, Sc_2 before the origin of Rs; Rs and the two sections of R_5 in sinuous alignment; R_{2+3+4} relatively long, ending beyond the level of r-m; cell 1st M_2 closed, relatively large; m-cu just beyond the fork of M; approximation of veins Cu and 1st A relatively slight.

Abdominal tergites dark brown, the sternites yellowish brown; genital segment obscure brownish yellow. Ovipositor with the tergal valves very long and slender, the basal three-fourths or more straight, the apex gently upcurved; external valves more compressed, horn-colored.

The sides of the anterior vertex are strongly concave, not convex, as indicated by Brunetti. Two of the figures given by Brunetti (loc. cit., pl. 8, figs. 12, 13) as representing *Teucholabis angusticapitis* Brunetti pertain to a species of *Ceratocheilus*, presumably *C. latifrons* (Brunetti).

ILLUSTRATIONS

a, Aedeagus; b, basistyle; d, dististyle; g, gonapophysis; i, interbase; id, inner dististyle; ig, inner gonapophysis; md, middle dististyle; od, outer dististyle; og, outer gonapophysis; s, sternite; t, tergite; vd, ventral dististyle.]

PLATE 1

- FIG. 1. *Tipula* (*Schummelia*) *modica* sp. nov., venation.
2. *Tipula* (*Schummelia*) *pergrata* sp. nov., venation.
3. *Tipula* (*Vestiplex*) *tuta* sp. nov., venation.
4. *Limonia* (*Geranomyia*) *meracula* sp. nov., venation.
5. *Limonia* (*Geranomyia*) *offirmata* sp. nov., venation.
6. *Antocha* (*Antocha*) *plumbea* sp. nov., venation.
7. *Antocha* (*Antocha*) *basivena* sp. nov., venation.
8. *Antocha* (*Antocha*) *scelesta* sp. nov., venation.
9. *Antocha* (*Antocha*) *sparsipunctata* sp. nov., venation.
10. *Antocha* (*Orimargula*) *præscutalis* sp. nov., venation.
11. *Heliuss* (*Heliuss*) *lectus* sp. nov., venation.
12. *Heliuss* (*Heliuss*) *selectus* sp. nov., venation.
13. *Orimarga* (*Orimarga*) *distivenula* sp. nov., venation.
14. *Orimarga* (*Orimarga*) *subbasalis* sp. nov., venation.
15. *Nipponomyia* *khasiana* sp. nov., venation.
16. *Adelphomyia* (*Adelphomyia*) *discalis* sp. nov., venation.
17. *Adelphomyia* (*Adelphomyia*) *subnebulosa* sp. nov., venation.
18. *Limnophila* (*Dicranophragma*) *multigeminata* sp. nov., venation.
19. *Trentepohlia* (*Mongoma*) *subtenera* sp. nov., venation.
20. *Trentepohlia* (*Mongoma*) *walshiana* sp. nov., venation.
21. *Trentepohlia* (*Mongoma*) *ephippiata* sp. nov., venation.
22. *Trentepohlia* (*Trentepohlia*) *strepens* sp. nov., venation.
23. *Molophilus* *khasicus* sp. nov., venation.
24. *Toxorhina* (*Ceratocheilus*) *mesorhyncha* sp. nov., venation.

PLATE 2

- FIG. 25. *Tipula* (*Schummelia*) *pergrata* sp. nov., male hypopygium.
26. *Limonia* (*Geranomyia*) *fumimarginata* sp. nov., male hypopygium.
27. *Antocha* (*Antocha*) *basivena* sp. nov., male hypopygium.
28. *Antocha* (*Antocha*) *scelesta* sp. nov., male hypopygium.
29. *Nipponomyia* *khasiana* sp. nov., male hypopygium.
30. *Adelphomyia* (*Adelphomyia*) *discalis* sp. nov., male hypopygium.
31. *Adelphomyia* (*Adelphomyia*) *subnebulosa* sp. nov., male hypopygium.
32. *Limnophila* (*Dicranophragma*) *multigeminata* sp. nov., male hypopygium.
33. *Molophilus* *khasicus* sp. nov., male hypopygium.
34. *Toxorhina* (*Ceratocheilus*) *mesorhyncha* sp. nov., male hypopygium.

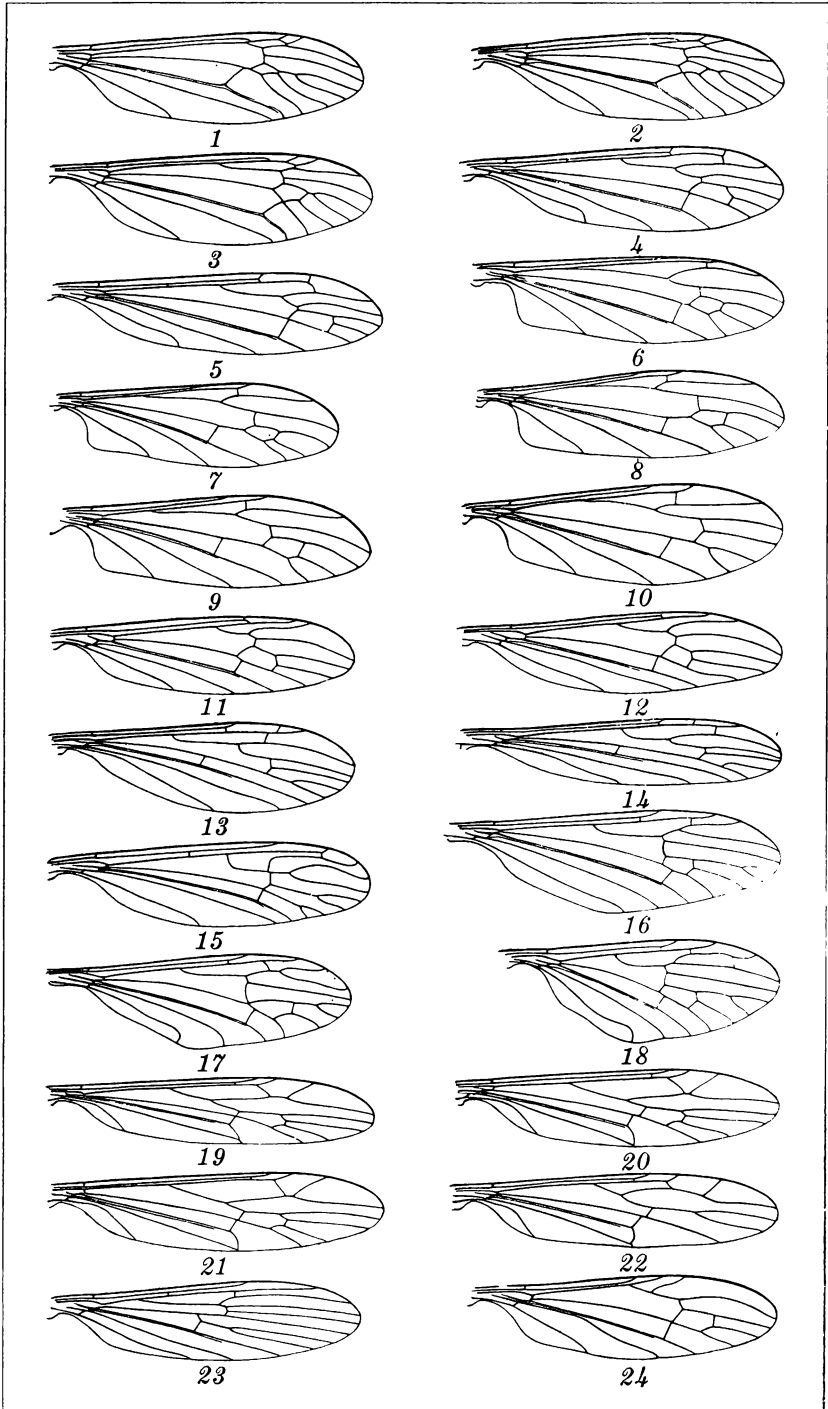


PLATE 1.

