

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

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Separate from
THE PHILIPPINE JOURNAL OF SCIENCE
Published by the National Institute of Science and Technology,
Manila, Philippines
VOLUME 88, No. 2, JUNE, 1959

MANILA
BUREAU OF PRINTING
1960

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FIVE PLATES

The species considered at this time are from various localities in southern Asia and derived from several sources. Collections from the western Himalayas, particularly from the Northwest Frontier Province of Pakistan and from Kashmir were taken by Dr. Fernand Schmid; from Nepal, in the east-central Himalayas, by Dr. Edward I. Coher and native assistants; from Ceylon, likewise secured by Dr. Schmid; and from Thailand, taken by Dr. Deed C. Thurman and Mrs. Thurman. Additional to these major series are a few others from other sources that are acknowledged in the text. I am very greatly indebted to my friends and colleagues who have added so materially to our knowledge of the Tipulidæ of this particularly rich and interesting part of Asia.

TIPULINÆ

DOLICHOPEZA (NESOPEZA) ANGUSTISSIMA sp. nov.

Plate 1, figs. 1, 5.

Belongs to the *cuneata* group; general coloration of mesonotum cinnamon brown to darker brown, pleura patterned with light brown and yellow; antennæ short, black, pedicel abruptly light yellow; legs brown, tarsi white, basitarsi with a more or less distinct pale brown ring; wings subhyaline, stigma dark

* Contribution No. 1292 from the entomological laboratory of the University of Massachusetts.

brown; cell 2nd A very long and narrow, with a secondary vein or thickening; male hypopygium with the posterior border of the tergite emarginate, with a small acute median spine; eighth sternite large, posterior border more narrowed and truncate.

Male.—Length, about 11 to 12 millimeters; wing, 10 to 11; antenna, about 2.4 to 2.6.

Female.—Length, about 12 to 13 millimeters; wing, 10 to 11; antenna, about 1.8 to 1.9.

Rostrum light yellow; palpi with first segment yellow, succeeding segments passing into brown. Antennæ relatively short, as shown by the measurements; scape dark brown, pedicel light yellow, flagellum medium brown: first flagellar segment longer than the succeeding two combined, the remainder short-cylindrical, terminal segment short. Head with front and anterior vertex light yellow, posterior part of head light chestnut; anterior vertex relatively broad.

Pronotal scutum light brown, the lateral ends yellow, posterior border and the scutellum light yellow. Mesonotal præscutum almost uniformly light brown to darker brown, the interspaces vaguely more testaceous; scutal lobes similarly light brown; posterior sclerites of notum more brownish testaceous, pleurotergite yellowed on ventral part. Pleura light brown, variegated with paler, especially on the dorsopleural region and posteriorly. Halteres elongate, dark brown, the base of stem restrictedly yellow. Legs with all coxæ and trochanters pale yellow; femora obscure yellow, narrowly clearer yellow basally, the tips dark brown; tibiæ brownish white, the extreme base clear white, tips narrowly more darkened; tarsi snowy white, the basitarsi a broad light brown ring on fore legs, more uniform but paler brown on mid-legs, still narrower and pale to virtually lacking on the posterior basitarsi. Wings (Plate 1, fig. 1) with a long basal petiole, anal region narrowed; subhyaline or faintly tinged with darker; stigma oval, dark brown, conspicuous; a vague darkening over anterior cord; veins dark brown. Venation: Rs of moderate length, subequal to R_{2+3} ; cell M_1 about two and one-half times the length of its petiole; m-cu from one-third to about two-thirds its own length before the fork of M; cell 2nd A very narrow, the vein elongate; a secondary vein or thickening in the cell, as in *cuneata* and allies.

Abdominal tergites dark brown, with a pale spot or narrow band before midlength; sternites more uniformly yellowed, the

basal segments vaguely patterned with pale brown; hypopygium dark, the ninth segment more or less yellowed. Male hypopygium (Plate 1, fig. 5) small; tergite, *t*, with the posterior border conspicuously notched, with a small acute median spine, the broad lateral borders bent ventrad and cephalad into conspicuous blackened blades, their surface microscopically roughened. Outer dististyle, *d*, blackened, stoutest at base, narrowed to the obtuse tip; inner style oval in outline, beak narrow. Eighth sternite, *s*, extensive, blackened, narrowed posteriorly, the caudal border truncate, unarmed.

Habitat.—Thailand (Chiengmai).

Holotype, male, Dr. Buker's cabin, near Chiengmai, February 4, 1953 (*Thurman & Manop*). Allotopotype, female, pinned with type. Paratopotypes, several of both sexes. Paratypes, males and females, Doi Sutep, February 7 to 24, 1953 (*Thurman*).

Other members of the *cuneata* group include *Dolichopeza* (*Nesopeza*) *angusta* Edwards, of Malaya; *D. (N.) angustaxillaris* Alexander, of the Philippines; *D. (N.) annulitarsis* Alexander, Philippines; *D. (N.) bagobo* Alexander, Philippines; *D. (N.) bicornigera* Alexander, Philippines; *D. (N.) cinctitarsis* Alexander, Philippines; *D. (N.) cuneata* Edwards, Borneo; *D. (N.) inornatipes* Alexander, Philippines; *D. (N.) quadrifila* Alexander, Philippines; *D. (N.) ridibunda* Alexander, Philippines; *D. (N.) sandakanensis* Edwards, Borneo; and *D. (N.) subcuneata* Alexander, western Java. All of these numerous species differ from one another in the structure of the male hypopygium, particularly the ninth tergite and eighth sternite.

TIPULA (SCHUMMELIA) LAMA Alexander.

Plate 1, fig. 2.

Tipula (Schummelia) lama ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 593, 594.

The type, a male, was from Wat, Doi Sutep, Thailand, altitude 2,000 feet, January 18, 1953 (*Prayoon*).

Male.—Length, about 8.5 millimeters; wing, 9.5.

Size medium (wing of male 9.5 millimeters); general coloration of mesonotum brownish yellow, the præscutum with three faintly darker stripes, the broad central one farther split by a darker vitta; basal flagellar segments bicolored; wings (Plate 1, fig. 2) subhyaline, cells C and Sc slightly infuscated, stigma oval, darker brown; cell *M*₁ deep, about three times its petiole;

male hypopygium with the posterior border of the ninth tergite produced into a median setiferous blade or point; inner dististyle with the beak long and slender, without dorsal or posterior crests.

TIPULA (SCHUMMELIA) NOTOMELANIA Alexander.

Plate 1, figs. 3, 6.

Tipula (Schummelia) notomelania ALEXANDER, Journ. N. Y. Ent. Soc. 71 (1958). In press.

Type, a male, from Bhainsi, Nepal, December 8, 1956 (*Coher*).

Male.—Length, about 9 millimeters; wing, 9; antenna, about 4.1.

Size small (wing of male 9 millimeters); mesonotum chiefly blackened, pleura transversely patterned with black and yellow; head with vertex darkened; femora yellow, tips narrowly blackened; wings (Plate 1, fig. 3) tinged with brown, restrictedly patterned with darker brown; m-cu at near midlength of s_{3+4} ; abdominal tergites bicolored, obscure brownish yellow, the incisures darkened; male hypopygium (Plate 3, fig. 6) with the median area of tergite, *t*, produced into a flattened setiferous spatula; outer dististyle, *d*, broad.

TIPULA (TIPULODINA) FORFICULOIDES Alexander.

Plate 1, fig. 7.

Tipula (Tipulodina) forficuloides ALEXANDER, Ann. Mag. Nat. Hist. XII 10 (1957) 104, 105.

The type, a male, was from the Walayar Forest, South Malabar, South India, altitude 1,000 feet, November 6, 1955 (*Susai Nathan*).

Male.—Length, about 17 millimeters; wing, 13; antenna, about 3.4; total length of spine of dististyle, 3.

Size relatively small (wing of male 13 millimeters); white bands on legs clear and distinct; costal field of wing blackened; male hypopygium (Plate 1, fig. 7) with the tergite, *t*, relatively small, the posterior border subtruncate, with the median area produced into a low lobe; lateral borders incurved, fringed with long conspicuous curved black setæ. Outer dististyle, *d*, small, its area slightly less than the outer basal lobe of the inner style, the outer margin near base a little expanded; inner style unusually small, as compared with its outer arm which is produced into a very long nearly straight rod, at near two-thirds the length narrowed into a gently curved acute spine; sensory area at base of arm; a single row of long setæ on face of arm as far as the narrowed apical spine; body of style small, only about

one-fourth as long as its outer arm; outer basal lobe darkened, obtuse, with a more or less distinct flange on posterior border.

TIPULA (TIPULODINA) MALABARENSIS sp. nov.

Plate 1, fig. 8.

Belongs to the *venusta* group; size relatively large (wing of male over 18 millimeters); antennæ short; general coloration of mesonotum buffy, with three fulvous stripes that are conspicuously bordered by brown, the median vitta especially distinct; white tibial rings broad and conspicuous, tarsi patterned with white or greenish white; wings without darkening in cell M, apical darkened area solid; microtrichia of wing cells greatly reduced; male hypopygium with outer arm of inner style conspicuously bifid.

Male.—Length, about 23 millimeters; wing, 18.5; antenna, about 3.1.

Frontal prolongation of head yellow above, more darkened on sides; nasus long and slender, tipped with black; palpi dark brown, incisures narrowly paler. Antennæ of male short, as shown by the measurements; scape and pedicel yellow, flagellum black; flagellar segments subcylindrical or weakly enlarged basally; verticils of outer segments long. Front and anterior vertex yellow, posterior vertex light brown with a slender more blackened vertical tubercle, erect and directed slightly forward; head yellow beneath.

Pronotum yellow, the broad central area of the scutum dark brown, the sides vaguely darkened. Mesonotal præscutum with the restricted ground buffy, the disk with three narrow, more fulvous stripes that are bordered by darker, the intermediate pair with a common dark central line, the remaining borders paler; lateral præscutal borders behind the foveæ more brownish gray; scutal lobes extensively brown, continued across the mid-region, restricting the pale ground to the suture and outer margins; scutellum yellow, the midregion and posterior border broadly darkened, parascutella dusky; mediotergite whitened, with two brown areas, confluent behind to include the posterior border. Pleura and pleurotergite pinkish white, virtually unpatterned; posterior dorsopleural membrane weakly darkened. Halteres dark brown. Legs with the coxæ and trochanters pinkish, with more or less distinct green reflections, the posterior coxæ restrictedly darkened at base; fore and middle femora light brown, tips rather narrowly black with a broader obscure white subterminal ring; tibiæ black, with a broad nearly

apical white ring, basitarsus chiefly black, with nearly the outer third white; second tarsal segment black basally, more greenish white at tip, outer tarsal segments more uniformly darkened; posterior femora brown, the subterminal pale ring very narrow and obscured, the dark tip correspondingly broader; tibiae black, with two white rings, the outer broader and nearly terminal in position; basitarsus black, with nearly the outer half white; second segment white to greenish white, the base narrowly blackened; third tarsal segment greenish white, outer two segments brownish black, tinged with green; claws small. Wings virtually hyaline, restrictedly patterned with darker, including the blackened stigma and a small confluent seam over anterior cord, with a very narrow seam over the distal section of Cu_1 ; wing tip more extensively darkened, extending from the tip of cell R_2 into cell M_1 , extensive and solidly darkened in cells R_3 and R_5 ; veins brownish black. Microtrichia of basal cells greatly reduced, lacking in cells before cord, 1st M_2 and bases of outer cells, except in the immediate vicinity of the veins. Venation: Cell 1st M_2 large, pointed at both ends; cell M_1 nearly twice its petiole; cell 2nd A narrow.

Abdominal tergites brown, basal rings paler, apices narrowly brownish black; basal sternites obscure yellow, the posterior borders vaguely darker, outer sternites more uniformly yellow; hypopygium large, chiefly yellow, the styli conspicuously blackened. Male hypopygium (Plate 1, fig. 8) with the tergite, t , transverse; posterior border truncate, on either side with a semicircular area of black hairs and short setae, arranged about as in the figure. Outer dististyle, d , shown separately; pale, narrowed to the obtuse tip; inner style complex, the blackened beak short, outer basal lobe nearly as long but slender, provided with strong black setae; outer arm of inner style distinctive, short and broad, divided into two strong spines, the outer one longer, fringed with long yellow setae, inner spine in cases with a small point on outer margin before the acute apex. Gonapophysis appearing as a slender straight rod, near the tip with abundant setulae. Aedeagus with an erect spine on either side before apex.

Habitat.—South India (South Malabar).

Holotype, male, Walayar Forest, altitude 1,000 feet, September 1956 (*Susai Nathan*).

The present fly and *Tipula* (*Tipulodina*) *xanthippe* Alexander are the only regional species of the subgenus that have the outer

arm of the inner dististyle of the hypopygium conspicuously forked. The two flies are quite different in the details of structure of the male hypopygia.

TIPULA (TIPULODINA) SUBSCIMITAR Alexander.

Plate 1, figs. 4, 9.

Tipula (Tipulodina) subscimitar ALEXANDER, Journ. N. Y. Ent. Soc. 71 (1958). In press.

Type, a male, from Amlekhgang, Nepal, altitude 1,690 feet, August 26, 1956 (*Coker*).

Male.—Length, about 15 millimeters; wing, 12.5.

Belongs to the *pedata* group; size small (wing of male 12.5 millimeters); wings (Plate 1, fig. 4) whitish hyaline, the dark pattern restricted, especially the area in cell M; microtrichia lacking in cells at and beyond the arculus; basal section of R_{4+5} distinct, cell 2nd A narrow; male hypopygium (Plate 1, fig. 9) with the tergite, *t*, relatively long, slightly narrowed at outer end, apex broadly emarginate; on either side beneath with an incurved lobe, the outer margin with strong black setæ. Outer dististyle, *d*, very pale, slightly dilated on basal half; inner style with the disk high, beak obtuse, widely separated from the smaller lower beak; vestiture short, pale and inconspicuous; outer basal lobe cultrate, with conspicuous setæ; outer arm of inner dististyle a relatively long nearly straight spine that juts beyond the other hypopygial elements, the extreme tip acute, blackened, gently curved; sensory pits at base of outer arm, provided with very long setæ; a narrow row of pale bristles extends from the sensory pits virtually to the tip of the arm.

TIPULA (VESTIPLEX) GURKHA Alexander.

Plate 2, fig. 10.

Tipula (Vestiplex) gurkha ALEXANDER, Journ. N. Y. Ent. Soc. 71 (1958). In press.

Types, including both sexes, Simbhanjang Pass, Nepal, altitude 8,190 feet, July 24, October 1 to 27, 1956 (*Coker*).

Male.—Length, about 12 to 13 millimeters; wing, 14 to 15; antenna, about 4.3 to 4.4.

Female.—Length, about 14 millimeters; wing, 15.

General coloration gray, the præscutum with four stripes that are margined with brownish black; basal flagellar segments bicolored; legs black, femoral bases obscure yellow; wings pale yellow, marbled with brown; abdomen yellow basally, the outer four segments black; male hypopygium (Plate 2, fig. 10) with the tergite, *t*, relatively small, completely divided at midline,

each lobe obtuse at tip; basistyle completely separated from the sternite by a suture, the outer apical angle produced into a flattened yellow plushlike blade that is farther extended into a slender black spine; ninth sternite, *s*, on either side adjoining the basistyle with a blackened knob that is produced into a long yellow spine, the acute tip black, directed dorsad and mesad; outer dististyle, *d*, a long blackened club, inner style with beak unusually slender; ædeagus subtriangular in outline, strongly narrowed outwardly; eighth sternite unarmed.

TIPULA (VESTIPLEX) LEPCHA Alexander.

Plate 2, fig. 11.

Tipula (Vestiplex) lepcha ALEXANDER, Journ. N. Y. Ent. Soc. 71 (1958). In press.

Types, all males, Simbhanjang Pass, Nepal, altitude 8,190 feet, October 1, 1956 (*Coher*).

Male.—Length, about 18 millimeters; wing, 20; antenna, about 5.

Size large (wing of male 20 millimeters); general coloration of head and thorax gray, præscutum with four more blackish gray stripes, posterior sclerites of notum and the pleura yellowed; legs black, femoral bases yellowed; wings light brown, with restricted creamy areas; basal abdominal segments fulvous yellow, the outer four, including the hypopygium and appendages, black; male hypopygium (Plate 2, fig. 11) with the tergite, *t*, small, divided medially by pale membrane, the lobes obtuse at tips, with yellow setæ; basistyle, *b*, large, completely cut off from both tergite and sternite, the outer end farther separated from the body of style, thence produced caudad into a slender arm that is glabrous and polished at apex, farther prolonged into a slender spine that is directed mesad, the surface at base with very long yellow setæ; outer dististyle, *d*, blackened, expanded and slightly bidentate at tip, surface with sparse very small setæ; inner style distinctive, as shown, beak very slender; phallosome, *p*, distinctive, the very slender gonapophyses longer than the ædeagus, protruding caudad from the genital chamber, at base with a median acute compressed spine directed chiefly caudad.

TIPULA (INDOTIPULA) BLANDITA Alexander.

Plate 2, fig. 12.

Tipula (Indotipula) blandita ALEXANDER, Ann. & Mag. Nat. Hist. XII 6 (1953) 902, 903.

The type male was from Doi Chom Cheng, Chiangmai Province, Thailand, altitude 3,000 feet, May 4 to 10, 1952 (*Thurman*).

Male.—Length, about 15 millimeters; wing, 16; antenna, about 5.

General coloration orange, the abdomen with a subterminal brownish black ring; antennæ with basal three segments pale, the remainder black, with very long verticils; wings subhyaline, the prearcular and costal regions more yellowed; male hypopygium (Plate 2, fig. 12) with the ninth tergite, *t*, narrowed posteriorly, produced into two relatively slender lobes, their tips obtuse, provided with strong incurved setæ at and near apex, some of these more flattened, notch a little narrower than the lobes but with nearly the same conformation; outer dististyle, *d*, relatively narrow, approximately four and one-half times as long as the greatest breadth, tip narrowly obtuse, setæ marginal and on outer fourth; inner style with the beak deep, cleaverlike, apex entire and very obtuse, lower beak slender, terminating in a blackened scabrous head, outer margin with a series of about fifteen flattened setæ, the innermost larger and stronger, outer basal lobe relatively narrow, with long twisted setæ at apex; gonapophysis a flattened pale blade, its apex a little more expanded.

TIPULA SHAWIANA Alexander.

Plate 2, fig. 13.

Tipula shawiana ALEXANDER, Ann. Mag. Nat. Hist. XII 6 (1953) 750, 751.

The type male was from Doi Chom Cheng, near Doi Sutep, Thailand, altitude 3,000 feet, May 4 to 10, 1952 (*Thurman*).

Male.—Length, about 13 millimeters; wing, 16; antenna, about 5.

General coloration of thorax orange yellow, the præscutum with two narrow deeper orange intermediate stripes; vertex of head brownish gray with a barely indicated capillary darker vitta; femora and tibiæ brownish yellow, tarsi darker brown; wings with a weak brownish tinge, costal border light brown, stigma darker; abdomen yellow, the subterminal segments brownish black; male hypopygium (Plate 2, fig. 13) with the ninth tergite, *t*, large, virtually divided into two halves by median membrane, posterior border with a broad notch, lateral lobes obtuse, with setulæ and very small scattered setæ; basistyle separated from the sternite by a suture, its posterior end produced into a flattened blade, the tip obtuse; outer dististyle, *d*, a slender cylindrical rod with very long setæ, the longest nearly equal in length to the style; inner style with the beak

produced into a triangular point, the surface behind this with a group of long yellow outwardly directed setæ, lower beak obtuse, blackened, region of outer basal lobe produced, more or less bilobed, with short backwardly directed subspinous setæ; outer end of ædeagus, *a*, with a protecting flange, the apex above subtended by two needlelike spines, the lower margin with two slender rods; eighth sternite, *s*, with a very conspicuous depressed median lobe that is fringed with long setæ, the base on either side with smaller lobes and shoulders; setæ of outer fringe with microscopic swellings or enlargements of various sizes scattered over their length.

LIMONIINÆ

LIMONIINI

LIMONIA (LIMONIA) MICROPYGA Alexander. Plate 2, fig. 14; Plate 3, fig. 25.

Limonia (Limonia) micropyga ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 595, 596.

Type male from Wat, Doi Sutep, Thailand, altitude 2,000 feet, January 18, 1953 (*Prayoon*).

Male.—Length, about 5 millimeters; wing, 5.6.

Size relatively small (wing of male 5.6 millimeters); mesonotum brown, pleura yellow, with a very conspicuous brownish black longitudinal stripe; rostrum blackened, narrowly pale above; antennæ black throughout; femora light brown; wings (Plate 2, fig. 14) with a brownish tinge, the oval stigma slightly darker brown, Sc long, cell 2nd A narrow; male hypopygium (Plate 3, fig. 25) with the ventromesal lobe of basistyle terminal in position; dististyle, *d*, a pale yellow blade, without basal enlargement, tip obtuse, setæ near tip very long.

LIMONIA (LIMONIA) PARVISTYLATA sp. nov.

Size small (wing of male about 4.5 millimeters); general coloration of mesonotum brownish yellow, darker medially, pleura yellow with a conspicuous brownish black longitudinal stripe; halteres infuscated; legs brownish yellow, the extreme tip of tibia and the tarsi white; wings with a dusky tinge, the oval stigma still darker; Sc₁ ending about opposite four-fifths the length of Rs, Sc₂ at its tip; male hypopygium with the ventral dististyle very small, its area only about one-fourth

that of the basistyle, rostral prolongation long and slender, with two short spines near outer end; gonapophysis erect, strongly darkened, broad-based, tapering outwardly to a short apical lobe.

Male.—Length, about 4 millimeters; wing, 4.6; antenna, about 1.0.

Rostrum brown; palpi black. Antennæ black throughout, relatively long for a member of this genus; flagellar segments passing from short-oval to more elongate, terminal segment longest, strongly pointed at outer end; verticils inconspicuous. Head dark brownish gray.

Cervical sclerites brownish black, pronotum paler. Mesonotal præscutum brownish yellow clearer yellow in front; posterior sclerites of notum darker brown especially medially, pleurotergite brownish yellow. Pleura with a broad conspicuous brownish black longitudinal stripe extending from the cervical region to the base of abdomen, passing just beneath the root of the halteres, the ventral pleurites and sternum clearer yellow. Halteres infuscated, especially the knobs. Legs with the coxæ and trochanters pale yellow, the fore coxæ slightly more infuscated; remainder of legs brownish yellow, the tips of the tibiæ and the tarsi paling to white; claws small, each with two slender spines close to base. Wings with a dusky tinge, the oval stigma still darker; veins brown. Venation: Sc relatively long, Sc₁ ending about opposite four-fifths the length of Rs, Sc₂ near its tip; free tip of Sc₂ pale, in approximate transverse alignment with R₂; cell 1st M₂ nearly as long as the distal section of M₃; m-cu at or close to the fork of M.

Abdomen brownish black, including the hypopygium. Male hypopygium with the tergite strongly narrowed outwardly, the apex produced into two low narrow lobes that are separated by pale membrane; setæ sparse, marginal, chiefly on the lobes. Basistyle with the ventromesal lobe large, obtuse. Dististyles two, very small, the outer style a gently curved blackened rod; ventral style oval, its area scarcely one-fourth that of the basistyle; rostral prolongation long and slender, arising from near midlength of the style, subacute at tip, with two small stubs or short blunt spines just back from the apex. Gonapophysis erect, strongly darkened, broad-based, tapering to a short narrow obtuse apical lobe.

Habitat.—Thailand (Chiengmai).

Holotype, male, Miss Lemmon's cabin, Doi Chom Cheng, altitude 3,000 feet, February 15, 1953 (*Thurman*).

The present fly differs from other small regional members of the subgenus in the white tarsi and in details of structure of the male hypopygium, especially the ventral dististyle and gonapophysis. The most similar of these species include *Limonia* (*Limonia*) *dravidica* Alexander and *L. (L.) perdocta* Alexander.

LIMONIA (LIMONIA) PERDOCTA Alexander.

Plate 2, fig. 15.

Limonia (*Limonia*) *perdocta* ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 594, 595.

The type was from Huey Pong, Lee District, Lampoon Province, Thailand, November 30, 1952 (*Thurman*).

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

Size small (wing of male 5 millimeters); thoracic dorsum light brownish yellow, the præscutum with a conspicuous dark brown median stripe, pleura pale yellow; legs brownish black; wings (Plate 2, fig. 15) with a weak brownish tinge, the stigma very slightly darker; Sc very long, cell 1st M_2 nearly square; male hypopygium with the ventral dististyle profoundly divided into two parts from an unusually small body.

LIMONIA (LIMONIA) SIELEDIVA sp. nov.

Plate 2, fig. 16, Plate 3, fig. 24.

Size small (wing, about 5 millimeters); general coloration of præscutum obscure brownish yellow, with a dark median stripe, pleura dorsally with a brownish black longitudinal stripe, the ventral sclerites abruptly pale yellow; legs brown, the tips of the tibiæ and all tarsi yellowish white; wings with a faint brownish tinge, stigma darker; Sc long; male hypopygium with the ventral dististyle very small, rostral prolongation slender.

Male.—Length, about 5 millimeters; wing, 5; antenna, about 1.2.

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

Rostrum dark brown; palpi black. Antennæ black throughout; flagellar segments oval, subequal to or a trifle shorter than the longest verticils; terminal segment elongate, more than one-half longer than the penultimate, the outer end strongly narrowed. Head brownish gray; anterior vertex narrow, especially so in the male.

Pronotum dark brown, paler behind. Mesonotal præscutum obscure brownish yellow, broadly darker brown medially, the lateral borders restrictedly darkened; scutal lobes brown, obscure yellow on midregion; scutellum testaceous yellow; postnotum

brown. Pleura pale yellow ventrally, the dorsal half, including the membrane, abruptly brownish black to form a broad longitudinal stripe from the head to the abdomen. Halteres brownish black, stem a little paler, its base narrowly yellow. Legs with the coxæ and trochanters whitened; femora brown, somewhat paler basally; tibiæ brown, the tips paling to obscure yellow; tarsi yellowish white, this color including all legs; claws of male slender, without armature except for very small spines at extreme base. Wings (Plate 2, fig. 16) with a faint brownish tinge, the oval stigma darker brown; veins brown. Venation: Sc long, Sc₁ about opposite two-thirds the length of Rs, Sc₂ near its tip; cell 1st M₂ rectangular (shorter in one wing of the type); m-cu variable in position, from before to beyond the fork of M.

Abdomen, including the hypopygium, dark brown. Ovipositor with the cerci small, slender, upcurved to the acute tips. Male hypopygium (Plate 3, fig. 24) with the tergite, *t*, broadest across base, strongly narrowed outwardly, the tip pale, truncate; entire surface of plate with abundant microscopic setulæ; a few strong setæ, chiefly at the apex. Sternite transverse, the posterior border very gently convex, with a single complete transverse row of strong setæ back from the border, with fewer other scattered bristles. Basistyle, *b*, with the ventromesal lobe large, simple. Dorsal dististyle, *d*, a flattened curved blade, widened beyond midlength, at apex narrowed into a straight spine; ventral style very small, its area only about one-half the ventromesal lobe of the basistyle, the oval body provided with relatively few but long setæ; rostral prolongation long, narrowed outwardly, at apex with one or two long setæ. Gonapophysis with mesal-apical lobe nearly erect, the short blackened apex obtuse. Ædeagus with the genital tubes widely separated.

Habitat.—Ceylon.

Holotype, male, Kandy, altitude 2,000 feet, January 14, 1954 (*Schmid*). Allotopotype, female.

The specific name, *sielediva*, is an ancient Indian name for Ceylon. The other small-sized regional species of *Limonia* that have whitened tarsi include *Limonia* (*Limonia*) *erichtho* Alexander, *L. (L.) latiflava* Alexander, and *L. (L.) parvistylata* sp. nov., all differing in details of coloration and details of the male hypopygium. The regional *Limonia longivena* (Edwards) is somewhat similar to the present fly, differing in

the coloration of the body and legs, with only the posterior tarsi whitened. I have never seen this fly but it evidently does not belong to *Thrypticomysia* Skuse where it originally was assigned by Edwards.

LIMONIA (LIMONIA) TAGAX Alexander.

Plate 2, fig. 17.

Limonia (Limonia) tagax ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 596, 597.

The type, a male, was from Doi Chom Cheng, Thailand, altitude 3,000 feet, January 2, 1953 (*Prayoon*).

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

Size small (wing of male less than 5 millimeters); general coloration of thorax yellow, the pleura with a narrow dark brown longitudinal stripe; head gray, eyes long and narrow, contiguous above or virtually so; wings (Plate 2, fig. 17) subhyaline, the subcircular stigma brown; cell 1st M_2 open by the atrophy of basal section of vein M_3 ; male hypopygium with the dististyle relatively small, produced into a long, gently curved rostral prolongation.

LIMONIA (LIMONIA) VAJRA Alexander.

Plate 2, fig. 18; Plate 3, fig. 26.

Limonia (Limonia) vajra ALEXANDER, Journ. N. Y. Ent. Soc. 71 (1958). In press.

The types were from Simbhanjang Pass, Nepal, altitude 8,190 feet, July 24 and October 1, 1956 (*Coher*).

Male.—Length, about 6.5 millimeters; wing, 7.5.

Female.—Length, about 7.5 millimeters; wing, 8.5

Size medium (wing of male 7.5 millimeters); mesonotal præscutum with three obscure yellow stripes; legs with femora brown or brownish yellow with a darker subterminal ring, tips yellow; wings (Plate 2, fig. 18) yellow, marbled with brown; Sc long, m-cu at or close to fork of M; male hypopygium (Plate 3, fig. 26) with the tergite, *t*, large, narrowed posteriorly, the caudal border gently emarginate; basistyle, *b*, large, the ventromesal lobe very large; dististyle, *d*, single, oval, narrowed into a long beak, the usual rostral spines very slender, hairlike; on outer margin of body of style at near midlength with a very compact group of about five spinelike setæ; gonapophysis, *g*, with mesal-apical lobe relatively short, darkened, terminating in a subacute point; ædeagus, *a*, broad, glabrous, the genital tubes lying close together at the midline, the tips produced slightly into short points.

LIMONIA (LIBNOTES) SUBMATRIX sp. nov.

Belongs to the *amatrix* group; size small (wing of male 7 millimeters); general coloration of thorax yellow, with a narrow dorsal longitudinal stripe extending from the cervical region to the wingroot; legs black, tips of femora broadly and abruptly yellow, wings whitish, conspicuously patterned with brown, including almost complete bands beyond arculus, at cord, outer end of cell 1st M_2 and wing tip; darkened dots along veins very sparse or lacking; m-cu at near two-fifths the length of cell 1st M_2 ; vein 2nd A strongly curved.

Male.—Length, about 6 millimeters; wing, 7.

Rostrum and palpi black. Antennæ with scape black, pedicel yellow; flagellum broken. Front and narrow anterior vertex silvery white, posterior vertex medium brown, with a light gray stripe on either side of the narrower central ground line.

Pronotum greenish yellow. Mesonotum greenish yellow, the præscutum with two broad intermediate stripes of this color, separated by a capillary gray line; scutal lobes weakly darkened; posterior sclerites of notum and the pleura more yellowed, with a narrow dark brown line extending from the cervical sclerites across the dorsopleural membrane to the wing root. Halteres brownish black, base of stem narrowly yellow. Legs with coxæ and trochanters yellow; femora black, the tips broadly and abruptly light yellow; tibiæ and tarsi brownish black; claws four-toothed, outer spine longest. Wings whitish, conspicuously patterned with brown; posterior prearcular field and a spot above R_2 yellow; cell C uniformly darkened, Sc variegated by yellow before and beyond the origin of Rs; broad seams over cord, outer end of cell 1st M_2 , and at ends of the veins, those in the costal region extended backward to form slightly broken or almost complete bands beyond arculus, at level of cord and fork of Sc, and at level of outer end of cell 1st M_2 ; outer half of cell R_2 darkened; the usual small spots on the veins virtually lacking, with only one or two on the distal section of M_{1+2} ; veins yellowish, brown in the darker areas. Venation: Rs moderately arcuated; cell 1st M_2 long, with m-cu at near two-fifths its length; vein 2nd A strongly curved.

Abdomen, including hypopygium, yellow. Male hypopygium with the dorsal dististyle shorter and less sinuous than in *amatrix*.

Habitat.—Assam (Khasi States).

Holotype, male, Cherrapunji, Khasi Hills, altitude 4,000 feet, 1954 (*S. Sircar*).

The most similar regional species is *Limonia* (*Libnotes*) *thyestes* Alexander, of the Nilgiri Hills, South India, which differs in the large size, coloration of the legs and wings, and in the details of venation.

LIMONIA (LIBNOTES) NOTATA SICCA subsp. nov.

Male.—Wing, 13.5 millimeters.

Rostrum and palpi black. Antennæ with scape and pedicel black, flagellum yellow, outer segments more darkened. Head yellowish brown.

Pronotum obscure brownish yellow, more darkened on sides. Mesonotal præscutum with the disk light brown, the posterior half of midregion and the cephalic border gray, patterned with darker brown, including a line around the disk lying just inside the punctiform black pseudosutural foveæ; scutum and scutellum extensively pale yellowish white; mediotergite light gray, blackened laterally; pleurotergite light gray. Pleura more grayish yellow with two very narrow broken dark brown stripes, the more ventral one broadest across the base of the fore coxa where it includes more than the basal third, much narrower on the dorsal sternopleurite. Halteres pale yellow, apex of knob darkened. Fore legs black; remaining legs with the femora obscure yellow with a broad brownish black subterminal ring; all tarsi a trifle paler than the tibiae; vestiture of fore legs reduced to abundant small spinelike setæ, of the other legs normal, this condition indicating that the broken type specimen is a male. Wing pattern and venation as in typical *notata*, m a little shorter.

Abdomen broken.

Habitat.—Assam (Khasi States).

Holotype, male, Cherrapunji, Khasi Hills, altitude 4,000 feet, 1954 (*S. Sircar*).

This fly differs from typical *Limonia* (*Libnotes*) *notata* (van der Wulp) in the coloration of the body and legs. In the latter character it likewise differs from the various allied species or races so far made known from the various Pacific islands.

LIMONIA (DICRANOMYIA) EMODI sp. nov.

Belongs to the *morio* group, allied to *nigrithorax*; legs brownish yellow; wings with the stigma distinct, brown; ventral

dististyle of male hypopygium with a single long rostral spine, ventral sclerite broad.

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

Female.—Length, about 5 millimeters; wing, 5.5

Rostrum and palpi black. Antennæ black throughout; basal flagellar segments oval, the outer ones elongate, especially the terminal segment; verticils and setæ conspicuous. Head black, the anterior vertex not silvery as in various related species this appearance possibly due to discoloration.

Pronotum and mesonotum polished black, the restricted humeral region of the præscutum, posterior border of scutal lobes and the parascutella paler; scutellum and mediotergite slightly pruinose. Pleura black heavily silvery gray pruinose, especially on the dorsal sternopleurite, pteropleurite and meron. Halteres with stem yellow, knob brownish black. Legs with the fore coxæ darkened, remaining coxæ and all trochanters yellow; remainder of legs obscure brownish yellow, the outer tarsal segments darker. Wings tinged with brown, the prearcular and costal fields more brownish yellow; stigma oval, darker brown; veins brown, a trifle paler in the brightened fields. Venation: Sc_1 ending shortly beyond the origin of Rs , Sc_2 far retracted, Sc_1 alone about four-fifths as long as Rs ; m-cu close to the fork of M .

Abdominal tergites brownish black, sternites paler; hypopygium brownish black. Male hypopygium with the tergite narrowly transverse, the cephalic border convex, the posterior margin produced into two long lobes that narrow gradually into blunt tips, separated by a notch that is approximately twice their own diameter. Basistyle relatively small, the ventromesal lobe slender, especially on outer half, the enlarged base with several strong setæ; at base of major lobe with a small tubercle tipped with about thirteen long setæ. Dorsal dististyle a gently curved rod, gradually narrowed into a short blackened apical spine; ventral style of moderate size, its area subequal to the total size of the basistyle, terminating in a very small slender beak; a single long rostral spine that is more than twice as long as the rostrum. Gonapophysis pale, the mesal-apical lobe relatively small, gently curved. Ninth sternite broader than long, its margin with about nine strong setæ on either side.

Habitat.—Kashmir.

Holotype, male, Muzaffarabad, altitude 3,250 feet, October 3, 1953 (*Schmid*). Allotopotype, female, pinned with type.

The present fly is distinct from the only other regional member of the *morio* group, *Limonia* (*Dicranomyia*) *nigrithorax* (Brunetti), in the structure of the male hypopygium, as described by Brunetti.

LIMONIA (DICRANOMYIA) RUDRA sp. nov.

Size small (wing slightly over 5 millimeters); general coloration dark brownish gray; wings with a strong brownish tinge, with four still darker costal markings that alternate with obscure whitened areas; Sc_1 ending at near one-fourth the length of R_s , Sc_2 lacking; cell M_2 open by the atrophy of basal section of M_3 ; cell 2nd A broad.

Female.—Length, about 4.8 millimeters; wing, 5.2.

Rostrum and palpi black, the latter reduced. Antennæ with scape and pedicel black; flagellum broken. Head dark brown, sparsely pruinose, somewhat clearer on the anterior vertex and orbits; anterior vertex narrow.

Thoracic dorsum dark brown, pruinose, without distinct pattern. Pleura more evidently gray pruinose. Halteres with stem dirty white, knob dark brown. Legs with the coxæ dark gray; trochanters brown; femora brownish yellow, the tips narrowly dark brown; tibiæ and basitarsi paler, the tips narrowly infuscated; remaining tarsal segments dark brown. Wings with a strong brownish tinge, with four still darker costal markings that alternate with obscure whitened areas, the dark pattern being at arculus, two-thirds the length of vein Sc , Sc_1 and stigma; veins brown, slightly paler in the costal interspaces. Venation: Sc_1 ending shortly beyond the origin of R_s at near one-fourth the length of the vein, Sc_2 lacking; R_2 very faint, in transverse alignment with the free tip of Sc_2 ; cell M_2 open by the atrophy of basal section of M_3 ; m-cu a little longer than the distal section of Cu_1 , close to the fork of M ; cell 2nd A broad.

Abdomen dark brown, sparsely pruinose. Ovipositor with the cerci very slender, gently upcurved; hypovalvæ stout, blade-like.

Habitat.—Assam (Khasi States).

Holotype, female, Cherrapunji, Khasi Hills, altitude 4,000 feet, 1954 (*S. Sircar*).

Limonia (*Dicranomyia*) *rudra* is quite distinct from other Indian members of the subgenus that have cell M_2 of the wings

open, including *L. (D.) bhutanica* Alexander, *L. (D.) goana* Alexander, and *L. (D.) innocua* Alexander. All of these latter flies have the wings unpatterned or virtually so and with cell M_2 open by the atrophy of m instead of the basal section of M_3 , as in the present fly.

LIMONIA (GERANOMYIA) GANESA sp. nov.

Plate 3, figs. 19, 27.

Allied to *feuerborni*; general coloration of mesonotum brownish black, the lateral borders of the præscutum obscure yellow; rostrum moderately long, black; legs uniformly dark brown; wings tinged with dusky, stigma oval, darker brown; male hypopygium with the tergite narrow, transverse, the posterior border very gently emarginate; dorsal dististyle lacking; ventral style large and fleshy, the usual rostral spines fused to appear as a single unit.

Male.—Length, excluding rostrum, about 5.3 to 5.5 millimeters; wing, 6 to 6.2; rostrum, about 1.6 to 1.8

Rostrum relatively short, as shown by the measurements, black, the terminal filament pale. Antennæ black throughout, slightly more than one-half the rostrum; flagellar segments oval, with short verticils. Head dull brownish black, the narrow anterior vertex gray.

Cervical sclerites and pronotum brownish black. Mesonotal præscutum with the disk dark brown or brownish black, the humeral and lateral regions broadly obscure yellow; posterior sclerites of notum brownish black, sparsely pruinose, especially the central area of the scutum and postnotum. Pleura and pleurotergite chiefly yellow, the dorsal half broadly pale brown to form a diffuse stripe that farther involves the dorsopleural membrane; ventral sternopleurite weakly darkened. Halteres brownish black, base of stem narrowly yellow. Legs with the coxæ and trochanters light yellow; remainder of legs uniformly dark brown. Wings (Plate 3, fig. 19) rather strongly tinged with dusky, costal border still darker; stigma oval, darker brown; veins brown. Venation: Sc long, Sc_1 ending about opposite two-thirds to shortly before the fork of Rs , Sc_2 at its tip; cell 1st M_2 elongate, exceeding the distal section of vein M_{1+2} $m-cu$ at or close to the fork of M .

Abdominal tergites and hypopygium dark brown, sternites obscure yellow. Male hypopygium (Plate 3, fig. 27) with the tergite, t , narrow, transverse, the posterior border very gently emarginate, the cephalic margin straight; each outer lateral

angle with a group of about 15 to 18 setæ of moderate length; surface of tergite with very abundant setulæ, those of the broad midsection larger than those of the triangular side pieces. Sternite with the setæ chiefly marginal, including a transverse outer row of four setæ. Basistyle, *b*, small ventromesal lobe simple. Dorsal dististyle lacking; ventral style, *d*, very large and fleshy, its area fully three to four times that of the basistyle; rostral prolongation stout basally, curved and narrowed to the tip, on outer margin at near midlength with a strong spine or pair of fused spines, the tips truncate. Gonapophysis, *g*, with mesal-apical lobe about as shown. Ædeagus broad, terminating in two broadly obtuse lobes; surface before apex with abundant delicate setulæ.

Habitat.—Nepal.

Holotype, male Amlekhgang, altitude 1,690 feet, September 24, 1956 (*Pratap Singh*). Paratopotypes, 4 males; paratype, of doubtful sex, Taubai, December 8, 1956 (*Coher*).

Although closely related to *Limonia* (*Geranomyia*) *feuerborni* Alexander, of Java and Sumatra, in the fundamental structure of the male hypopygium, as the loss of the dorsal dististyle, the present fly evidently is distinct in other details of the hypopygium, particularly the rostral prolongation, ædeagus and tergite. The specific name, *ganesa*, is that of the Hindu god of wisdom, represented as a short stout human with the head of an elephant.

HELIUS (HELIUS) EURYPHALLUS sp. nov.

Allied to *obliteratus*; mesonotal præscutum reddish brown with three dark brown stripes; head gray; antennæ of male relatively long, flagellar segments elongate, with a dense pale pubescence; legs brownish yellow, darker outwardly; wings whitish subhyaline, patterned with darker; basal section of vein R_{4+5} lacking, R_s , thus in longitudinal alignment with the outer section; basal abdominal segments bicolored, dark brown basally, their outer ends yellow, subterminal segments darkened to form a ring; male hypopygium with the dististyles terminal, outer style a very gently curved rod, its blackened apex microscopically toothed; inner style broad basally, the outer part strongly narrowed; ædeagus conspicuously expanded beyond base.

Male.—Length, including rostrum, about 6 millimeters; wing, 6.7; antenna, about 2.2.

Rostrum and palpi black, the former about as long as the remainder of head. Antennæ of male relatively long, as shown

by the measurements; scape dark brown, pedicel paler, first flagellar segment yellow basally, the remainder of organ brownish black; flagellar segments with a short dense pale pubescence but without distinct verticils. Head gray; anterior vertex narrow, about two-thirds the diameter of the scape.

Cervical region and pronotum weakly darkened, the latter more yellowed on sides. Mesonotal præscutum reddish brown with three dark brown stripes; scutal lobes dark brown, the central region pale, the color continued backward onto the base of the scutellum; remainder of scutellum and the mediotergite dark brown. Pleura and pleurotergite reddish brown. Halteres with stem yellow, knob darkened. Legs with coxæ and trochanters yellow; femora obscure yellow, vaguely more darkened just before apex; tibiæ and tarsi brownish yellow, the outer tarsal segments darker. Wings whitish subhyaline, patterned with darker, including the oval brown stigma; other spots and clouds at origin of Rs, cord, outer end of cell 1st M_2 , outer ends of cells R_2 and R_3 , and a still paler cloud at outer end of vein Cu; veins dark brown, paler in the prearcular field. Veins of outer half of wing with abundant macrotrichia. Venation: Sc_1 ending shortly beyond fork of Rs, Sc_2 at its tip; basal section of R_{4+5} lacking, Rs being in direct longitudinal alignment with R_{4+5} ; veins R_{2+3} and R_{4+5} generally parallel to one another, diverging slightly toward their outer ends; cell 1st M_2 rectangular, shorter than vein M_4 ; m-cu about opposite r-m or nearly its own length beyond the fork of M.

Abdominal segments bicolored, yellow, broadly darkened basally and very narrowly so apically; subterminal segments brownish black to form a broad ring; hypopygium brownish yellow. Male hypopygium with the basistyle having a low setiferous lobe on mesal face near proximal end. Dististyles terminal; outer style a very gently curved rod, blackened at tip which is microscopically denticulate; inner style broad on basal half, strongly narrowed outwardly, at apex of the widened base with a concentration of short setæ. Gonapophyses or lateral arms appearing as slender gently curved rods. Ædeagus narrow at base, thence markedly expanded, the tip obliquely truncate.

Habitat.—Kashmir.

Holotype, male, Kar Gah, 1954 (*Schmid*).

Helius (Helius) euryphallus is quite distinct from all other regional members of the genus. In its general appearance it

is most like to the Japanese *H. (H.) obliterated* Alexander, which has the structure of the male hypopygium quite distinct.

HELIUS (HELIUS) MURRENSIS sp. nov.

Size large (wing of female 8.5 millimeters); general coloration of notum dark brown, pleura concolorous, variegated with paler; wings weakly darkened, stigma and cell Sc slightly more infuscated; anterior branch of Rs not arcuated, basal section of R_{4+5} preserved; cell 1st M_2 rectangular, the second section of M_{1+2} nearly three times m.

Female.—Length, excluding rostrum, about 9 millimeters; wing, 8.5; rostrum, about 1.0.

Rostrum dark brown, relatively short, as shown by the measurements; palpi brownish black. Antennæ brownish black; scape elongate; proximal four flagellar segments short and crowded, transverse, the succeeding segments becoming elongate, with very long verticils, the longest nearly twice the segments. Head brownish black; anterior vertex moderately broad, about two and one-half times the diameter of the scape.

Pronotum brown, brightened posteriorly; pretergites pale yellow. Mesonotal præscutum chiefly dark brown, the humeral region vaguely brightened; posterior sclerites of notum chiefly dark brown, the posterior lateral angles of the mediotergite restrictedly obscure yellow; sides of scutellum and the parascutella pale. Pleura darkened dorsally, including the dorsopleural membrane, the sternopleurite more reddened; posterior pleurites more yellowed. Halteres with stem dusky, knob infuscated. Legs with the fore coxæ darker brown than the others; trochanters obscure yellow; remainder of legs, broken. Wings darkened, stigma and cell Sc very slightly more infuscated; veins brown. Venation: Anterior branch of Rs arcuated, as in *ferruginosus*; basal section of R_{4+5} preserved; cell 1st M_2 rectangular, the second section of M_{1+2} nearly three times m.

Abdominal tergites brown, the pleural membrane darker; sternites obscure brownish yellow, on the outer segments the posterior borders narrowly more darkened; genital shield dark brown; valves of ovipositor light horn color, darkened basally.

Habitat.—Pakistan.

Holotype, female, Murree Hills, altitude 7,242 feet, June 8, 1953 (*Schmid*).

The most similar regional species is *Helius* (*Helius*) *ferruginosus* (Brunetti), described from the Dawna Hills, Lower Burma. This has the body coloration much brighter and the details of venation distinct. A specimen in my collection determined by Brunetti as being *ferruginosus*, from the Darjeeling District in the eastern Himalayas is not correctly identified and is closer to the present fly, yet apparently distinct.

ANTOCHA (ANTOCHA) LIBITINA sp. nov.

Size medium (wing 7 millimeters or more); thorax and abdomen gray, the præscutum with three confluent brown stripes; legs brownish black, femoral bases restrictedly brightened; wings with a dusky tinge, stigma scarcely evident; male hypopygium with the lateral tergal lobes distinct; outer dististyle microscopically toothed at tip; inner apophysis extended into an acute point.

Male.—Length, about 7 to 7.5 millimeters; wing, 7 to 7.5; antenna, about 1.0 to 1.2.

Female.—Length, about 7.5 to 8.5 millimeters; wing, 8 to 9.

Rostrum and palpi black. Antennæ black, scape pruinose; flagellar segments oval. Head brownish gray, the broad posterior vertex darker brown.

Pronotum brown above, gray on sides. Mesonotal præscutum with the disk occupied by three confluent brown stripes, the lateral borders gray; scutal lobes brown; posterior sclerites of notum and the pleura gray; dorsopleural membrane dark. Halteres with stem yellowed, knob infuscated. Legs with coxæ and trochanters gray; remainder of legs dark brown or brownish black, the femoral bases restrictedly brightened; claws of male with a single relatively short tooth. Wings with a dusky tinge, the stigmal region not or only vaguely indicated; veins brown. Venation: m-cu variable in position, from at to shortly before the fork of M.

Abdomen dark gray, including the hypopygium. Cerci smooth. Male hypopygium with the tergite transverse; lateral lobes low and obtuse, the broad central area truncated. Basistyle short and stout. Dististyles apical in position, both long and gently arcuated; outer style sclerotized, especially outwardly, the apex microscopically toothed; inner style a little broader, its apex obtusely rounded. Lateral gonapophysis a flattened paddlelike blade, inner apophysis a little more elongate, a narrow blade that is extended into a slender spine.

Habitat.—North Afghanistan (Hindukush Range).

Holotype, male, Qualatak, Salang Valley, altitude 1,950 meters, October 5, 1952 (*Klapperich*). Allotopotype, female, pinned with the type. Paratopotypes, of both sexes, with the types, altitude 1,950 to 2,050 meters, October 5 to 11, 1952. Paratypes, of both sexes, Andarab Valley, altitude 1,240 meters, September 25, 1952; Femsch-Tagani, Kinjan Valley, altitude 2,100 meters, October 4, 1952; Ejan, Salang Valley, altitude 2,050 meters, October 11, 1952 (*Klapperich*).

Antocha (*Antocha*) *libitina* is quite distinct from other regional species in the coloration and in the structure of the male hypopygium. The flies were found associated in nature with the even larger *A. (A.) nebulipennis* Alexander which is well distinguished by the patterned wings. An important paper by the collector concerning his expedition to Afghanistan should be consulted.¹

ANTOCHA (ANTOCHA) PERSTUDIOSA Alexander.

Plate 3, figs. 21, 28.

Antocha (*Antocha*) *perstudiosa* ALEXANDER, Journ. N. Y. Ent. Soc. 71 (1958). In press.

The types were from Taubai, Nepal, December 8, 1956 (*Coher*).

Male.—Length, about 3.5 millimeters; wing, 4; antenna, about 0.7.

Close to *studiosa* Alexander, of South India; mesonotum patterned with brown, in cases extensively so; antennal flagellum dark brown; wings (Plate 3, fig. 21) whitish, stigma brown; male hypopygium (Plate 3, fig. 28) with the dististyles, *d*, slightly subterminal; outer style glabrous, unequally bifid at apex, both points obtuse, the lower one longer; inner style *a* little longer, narrowed to the obtuse tip, provided with strong setæ; phallosome, *p*, conspicuous; outer gonapophyses appearing as long-oval pale blades, inner apophyses long, slightly sinuous, the outer end very slender, bent at a right angle: *ædeagus* slender.

ORIMARGA (ORIMARGA) SHERPA Alexander.

Plate 3, fig. 20.

Orimarga (*Orimarga*) *sherpa* ALEXANDER, Journ. N.Y. Ent. Soc. 71 (1958). In press.

The unique female type was from Amlekhgang, Nepal, altitude 1,690 feet, September 19, 1956 (*Coher*).

¹ Klapperich, J. Auf Forschungsreisen in Afghanistan. Entomologische Blätter 50 (1954) 109–118, complete list of stations, map.

Female.—Length, about 5 millimeters; wing, 4.6.

General coloration of mesonotum light brown, the lateral borders and the pleura more yellowed; antennæ black; legs brown; wings (Plate 3, fig. 20) very weakly tinged with brown; r-m lying some distance beyond the level of R_2 , the latter about two-thirds as long as R_{1+2} ; M_{3+4} longer than M_4 .

PEDICIA (TRICYPHONA) BUETIGERI sp. nov.

General coloration of thorax light brownish gray, præscutum with three brown stripes, pleura buffy; antennæ 15-segmented, black; wings with cell 1st M_2 closed, small; outer four abdominal segments, including the hypopygium, brownish black; male hypopygium with the lateral tergal arms incurved at tips; dististyle small, suboval; phallosome with the apophyses appearing as small slender rods.

Male.—Length, about 6.5 millimeters; wing, 7.

Rostrum plumbeous; palpi black. Antennæ 15-segmented, black, scape pruinose; basal flagellar segments subglobular, short and crowded, outer segments passing into oval, shorter than the verticils. Head light gray; anterior vertex broad.

Pronotal scutum dark brown, scutellum paler. Mesonotal præscutum light brownish gray, with three brown stripes, the central one broad, slightly divided behind, lateral stripes more pruinose; scutal lobes brownish gray, central area and the scutellum more testaceous; postnotum brownish testaceous to buffy. Pleura buffy. Halteres with stem pale, knob weakly infuscated. Legs with the coxæ brownish yellow; trochanters yellow; femora brownish yellow basally, passing into brown at outer ends; tibiæ and basitarsi light brown, tips narrowly darker, remainder of tarsi dark brown to black. Wings weakly suffused, prearcular and costal fields more yellowed; stigma small, pale brown; veins medium brown. Venation: Cell R_4 petiolate by a relatively long R_{4+5} , this subequal to r-m which is placed shortly beyond the origin; cell 1st M_2 small, M_{3+4} shorter than M_4 ; cell M_1 present; m-cu at or just beyond the fork of M.

Abdominal tergites brown, basal sternites slightly paler; outer four segments brownish black. Male hypopygium with the lateral tergal arms conspicuous, straight, the short tips incurved; median region of tergite produced, its border subtruncate to very feebly convex. Basistyle without apical lobes. Dististyle apparently single but bilobed, appearing as a small

suboval lobe at apex of the basistyle, set with abundant short black spinules, the lower margin produced into a short triangular darkened beak. Phallosome broadly transverse, the apophyses appearing as small slender rods.

Habitat.—Pakistan (Northwest Frontier Province).

Holotype, male, Surgun sur, altitude 6,875 feet, July 29, 1953 (*Schmid*).

Named for Mr. J. J. Büetiger, associated with Dr. Fernand Schmid in the Mission Zoologique Suisse au Cashemire in 1953–54. Most similar to species such as *Pedicia (Tricyphona) insulana* (Alexander), *P. (T.) schummeli* (Edwards) and *P. (T.) unicolor* (Schummel), differing in the coloration, venation, and especially in the structure of the male hypopygium, particularly the tergal lobes, dististyle, and gonapophyses.

DICRANOTA (DICRANOTA) LONGISECTOR sp. nov.

Size large (wing 8 millimeters or more); antennæ of male elongate; general coloration gray, præscutum with four brown stripes, the intermediate pair narrowly separated; wings faintly patterned with darker; Rs unusually long, approximately four or five times the relatively long R_{2+3+4} ; cell M_1 present; male hypopygium with the interbase a simple blade, its tip microscopically scabrous.

Male.—Length, about 8 to 9 millimeters; wing, 8 to 10; antenna, about 3.5 to 3.8.

Female.—Length, about 8 to 8.5 millimeters; wing, 10 to 11.

Rostrum very short, yellow; palpi beyond basal segment light brown. Antennæ of male elongate, black; flagellar segments long, with sparse short verticils and a dense erect pubescence. Head light gray, the center of the posterior vertex infuscated, with a capillary still darker vitta; anterior vertex narrowed, projecting between the antennal bases.

Pronotum gray, broadly infuscated medially. Mesonotal præscutum light gray, with four brown stripes, the intermediate pair separated by a capillary ground line; posterior sclerites of notum light gray, each scutal lobe with two brown areas; parascutella darkened behind. Pleura and pleurotergite gray; posterior part of propleura more yellowed forming a transverse area; sclerites at the wing base pale. Halteres weakly infuscated, base of stem yellow. Legs with coxæ pale,

pruinose; trochanters yellow; femora and tibiæ brownish yellow to light brown, the tips narrowly darkened; tarsi passing through brown to brownish black. Wings subhyaline, stigma and very vague cloudings at origin of Rs and over the cord pale brown; veins brown. Venation: Sc_1 ending about opposite the supernumerary crossvein in cell R_1 ; Rs unusually long, approximately four to five times R_{2+3+4} ; cell M_2 open; cell M_1 small; m-cu from about one-third to one-half its length beyond the fork of M.

Abdomen of male much lighter and brighter than in female, tergites brown with broad yellow lateral and posterior borders, sternites almost uniformly yellow; in female, tergites gray with a broad continuous brown median stripe, sternites very vaguely patterned with pale brown. Male hypopygium with the tergite large, subquadrate, the posterior border very gently concave, the lateral angles slightly produced. Basistyle with the apical lobe low and rounded; interbase a simple curved yellow blade, slender, gently curved to the narrowly obtuse tip, the surface of the latter microscopically roughened or scabrous. Two simple dististyles, one shorter and broader, provided with long pale setæ; second style with scattered small setigerous punctures, the setæ at the base longer and more delicate. Phallosome compact, the gonapophyses a little broader than the decurved ædeagus.

Habitat.—Kashmir.

Holotype, male, Skardu, altitude 7,600 feet, October 4, 1953 (*Schmid*). Allotopotype, female, pinned with the type. Paratopotypes, males and females, altitude 7,550 to 7,600 feet, October 4 to 13, 1953 (*Schmid*).

Readily distinguished from other members of the typical subgenus, as *Dicranota* (*Dicranota*) *bimaculata* Schummel and *D. (D.) guerini* Zetterstedt, by the unusually long Rs and in the details of structure of the male hypopygium.

DICRANOTA (RHAPHIDOLABIS) FURCISTYLA Alexander. Plate 3, figs. 23, 29.

Dicranota (Rhaphidolabis) furcistyla ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 597, 598.

The type, a male, was from Doi Chom Cheng, Thailand, altitude 3,000 feet, January 2, 1953 (*Prayoon*).

Male.—Length, about 3.5 millimeters; wings, 4.2.

Size relatively small (wing of male 4.2 millimeters); mesonotal præscutum obscure yellow, the disk with three dark brown

stripes; antennæ relatively long; legs light brown; wings (Plate 3, fig. 23) subhyaline, stigma vaguely indicated, R_{2+3+4} long, Anal cells narrow; male hypopygium (Plate 3, fig. 29) with the posterior border of tergite, *t*, produced into a broad lobe, the apex truncate, with several long setæ; basistyle on outer face produced into a tubercle; interbase a powerful rod that narrows into an elongate blade; dististyle, *d*, forked, the outer arm smaller, microscopically tuberculate and provided with delicate setulæ, inner arm longer, terminating in two strong setæ; a strong pale spine on outer margin of basistyle, *b*, at base of the dististyle.

DICRANOTA (RHAPHIDOLABIS) HOPLOMERA sp. nov.

General coloration of thorax reddish brown, præscutum with poorly indicated darker stripes; antennæ 15-segmented, black throughout; wings subhyaline, stigma very faintly indicated; R_{2+3+4} preserved, a little longer than the basal section of R_5 ; male hypopygium with the tergite unarmed; apical lobe of basistyle low and rounded, set with abundant blackened spicules; interbase large, deeply forked at near midlength; outer dististyle very small, inner style much larger, scoop-shaped.

Male.—Length, about 4 to 5.5 millimeters; wing, 4.5 to 6.5.

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

Rostrum testaceous or light brown; palpi darker. Antennæ 15-segmented, dark brown, short in both sexes; flagellar segments oval. Head light gray.

Pronotum light brown. Mesonotal præscutum reddish brown, sparsely pruinose, with a pair of dark brown intermediate stripes that are confluent in front; scutal lobes brown, the central region and the parascutella yellow; posterior sclerites of notum brownish yellow, sparsely pruinose. Pleura yellowish brown; dorsopleural membrane yellowed. Halteres with stem yellow; knob large, infuscated. Legs with all coxæ and trochanters yellow; remainder of legs brownish yellow, the outer tarsal segments blackened. Wings subhyaline, stigma very faintly indicated; veins brown. Venation: *Sc* long, Sc_1 ending beyond the fork of R_{2+3+4} , the latter short, a little longer than the basal section of R_5 ; R_s varying from nearly straight to weakly angulated and spurred before midlength; *m-cu* before midlength of M_{3+4} ; cell M_3 very variable in size, in the type subequal to cell M_1 , in some paratypes much larger, as is normal in the subgenus.

Abdomen brown, hypopygium more yellowish brown. Male hypopygium large; tergite simple, posterior border subtruncate or feebly convex with scarcely indicated lateral angles. Basistyle with the apical lobe low and rounded, obtuse, densely set with microscopic black spicules; interbase distinctive, large, at near midlength deeply forked, one blade narrow, simple, the other bearing a lateral tooth before the slender apical spine. Outer dististyle very small, with long setæ on outer half; inner style much larger, scoop-shaped, with a more or less distinct tooth or flange on the inner margin at near one-third the length. Phallosome with the gonapophyses closely appressed to the ædeagus.

Habitat.—Pakistan (Northwest Frontier Province).

Holotype, male, Besal, altitude 10,715 feet, July 8, 1953 (*Schmid*).

Allotopotype, female, altitude 10,760 feet, June 25, 1953. Paratopotypes, males, with the allotype; paratypes, males, Valle de Barthe, July 28, 1953; male, Teru, altitude 10,200 feet, September 15, 1954 (*Schmid*).

Readily distinguished from all other Himalayan species of *Rhaphidolabis* by the structure of the male hypopygium, particularly the dististyles and interbase. There is an unusual range in body coloration and venation shown in the series on hand but all have the same hypopygial structure and evidently are conspecific.

DICRANOTA (RHAPHIDOLABIS) OBESISTYLA sp. nov.

General coloration of thorax light gray, præscutum with a slightly darker central stripe; wings subhyaline, stigma slightly darker; R_{2+3+4} present; male hypopygium with the posterior border of the tergite trilobed; basistyle with a pencil of long setæ on mesal face near apex; interbase a narrow rod, twisted near apex; outer dististyle and apical lobe of basistyle with spinelike blackened setæ; inner dististyle very broad, with a small accessory axillary lobule; gonapophysis broad, bilobed at tip.

Male.—Length, about 5 to 6 millimeters; wing, 5.5 to 6.5.

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

Rostrum and mouthparts yellow; palpi brownish black. Antennæ 13-segmented, short, black, scape a little paler basally; flagellar segments oval, beyond the first with short verticils. Head light gray.

Pronotum weakly darkened and pruinose above, more yellowed laterally and behind. Mesonotal præscutum light gray, with a slightly darker central stripe, the usual lateral stripes much paler, more yellowed; scutal lobes reddish brown, the central area and posterior sclerites pale, more or less pruinose. Pleura and pleurotergite yellow or buffy, sparsely pruinose. Halteres with stem pale yellow, knob infuscated. Legs with coxæ and trochanters yellow; femora yellow, slightly darker at tips; tibiæ and tarsi brownish yellow, the outer segments pale brown. Wings variable in shape, at high altitudes (Lal Pani) much narrower; subhyaline, stigma slightly darker; veins brown. Venation very variable; Sc_1 ending beyond fork of R_{2+3+4} , in cases the latter reduced or lacking; Rs short, feebly arcuated to more strongly arcuated or angulated at near midlength; R_2 commonly close to tip of R_1 ; R_{2+3+4} about three times the basal section of R_5 , in cases the latter very reduced; m-cu variable in position, from about one-third to nearly its own length beyond the fork of M .

Abdomen brown, subterminal segments darker, basal sternites and hypopygium paler. Male hypopygium with the posterior border of tergite conspicuously trilobed, the lateral angles produced into slender points, the median region with a shorter usually narrow lobe, its tip with long setæ. Basistyle with apical lobe relatively small, with several strong spinelike setæ; mesal face of style near apex with a group of eight or nine very long setæ forming a loose pencil; interbase a long slender yellow rod, the apical third slightly twisted and flattened into a narrow blade, the tip acute. Outer dististyle an oval lobe, its apical third with numerous strong spinelike setæ; inner style subequal in length but broader, mitten-shaped, having a smaller axillary lobule at base, tip of major style narrowed, with sparse setæ. Phallosome with the gonapophyses very broad, narrowed to an obtuse apical beak, with a small lateral shoulder that is microscopically setulose; ædeagus a blackened rod that terminates in an obtuse head.

Habitat.—Kashmir and Pakistan (Northwest Frontier Province).

Holotype, male, Besal, Pakistan, altitude 10,715 feet, July 10, 1953 (*Schmid*). Allotype, female, Kel, Kashmir, altitude 6,544 feet, May 19, 1954 (*Schmid*). Paratopotypes, males, June 25 to July 10, 1953; paratypes, males, Lal Pani, Pakistan, altitude 12,000 feet, September 5, 1953; Surgun sur, Pakistan,

altitude 6,875 feet, June 29, 1953; Kel, Kashmir, with the allotype, May 19, 1954; Minimarg, Kashmir, September 10, 1953 (*Schmid*).

Readily distinguished from all other Himalayan members of the subgenus by the structure of the male hypopygium, particularly the tergite, basistyle and phallosome.

DICRANOTA (RHAPHIDOLABIS) TUMIDOSA sp. nov.

Size medium (wing 6 millimeters or less); general coloration gray, the præscutum with three brown stripes; antennæ short, brownish black; wings subhyaline, stigma pale brown; Rs commonly angulated or slightly spurred, R_{2+3+4} present; male hypopygium with the posterior border of tergite having a low truncate median lobe, the dorsal surface back from the margin with a further large rounded lobe; outer dististyle oval, its outer half with strong black setæ, inner style at apex expanded a triangular blade.

Male.—Length, about 4.5 to 5 millimeters; wing, 5.5 to 6; antenna, about 0.9 to 1.0.

Rostrum brown; palpi brownish black. Antennæ short, brownish black; flagellar segments short-oval to oval, verticils much shorter than the segments. Head above brownish gray, the orbits narrowly light gray.

Pronotum brownish gray. Mesonotum gray, the præscutum with three clearly defined brown stripes; posterior sclerites gray, the centers of the scutal lobes brownish gray, parascutella yellowish brown. Pleura gray; dorsopleural membrane buffy. Halteres with stem dirty white, clearer at base, knob infuscated. Legs with fore and middle coxæ gray pruinose, posterior pair more yellowed; trochanters yellow; femora light brown, somewhat darker outwardly; tibiæ and tarsi brown to dark brown. Wings subhyaline, base more yellowed; stigma very pale brown, ill-delimited; veins pale brown, more yellowed at wing base. Venation: Sc_1 ending about opposite fork of R_{2+3+4} ; Rs varying from nearly straight to angulated and spurred at near midlength; R_{2+3+4} variable in length, from just longer than the basal section of R_5 to almost twice this length.

Abdomen dark brown, subterminal segments still darker to form a ring; hypopygium yellowish brown to light brown. Male hypopygium with the posterior border of tergite produced into rounded lobes on the sides, the extensive central area with

a much broader lobe, its truncated border fringed with strong setæ; dorsal surface of tergite back from the border with a dark rounded lobe, the surface with a few small setæ only. Basistyle with a small and inconspicuous lobule at apex on inner face, tipped with long setæ; mesal face of style at near midlength with a concentration of strong black setæ, some of which are longer and more slender; interbase a strong simple rod, its base dilated, the apex less evidently expanded. Outer dististyle a large oval lobe, the outer half set with strong black setæ; inner style large, beyond the base expanded into a triangular blade, the outer apical angle obtuse. Phallosome with the gonapophyses shorter but broader than the slender ædeagus, the tip of the latter slightly curved.

Habitat.—Kashmir and Pakistan.

Holotype, male, Khoghozi, Hindukush Range, Chitral, Pakistan, altitude 5,180 feet, October 15, 1954 (*Schmid*). Paratopotypes 2 males, October 5, 1954; paratype, male, Darkot, Kashmir, altitude 8,900 feet, August 17, 1954 (*Schmid*).

In its general appearance the present fly is most like to *Dicranota* (*Rhaphidolabis*) *sordida* (Brunetti) and *D. (R.) subsordida* Alexander, differing conspicuously in the structure of the male hypopygium, particularly the tergite, interbase and dististyles.

DICRANOTA (RHAPHIDOLABINA) SUBSPECTRALIS sp. nov.

Plate 3, fig. 22.

General coloration of mesothorax whitish or whitish gray, slightly darker posteriorly, mesonotum very high and gibbous; legs white, the tips of the femora very narrowly black, of the tibiæ scarcely darkened; wings whitish subhyaline, with a restricted dark pattern, best indicated by a deepening in the color of the veins; R_{2+3+4} present, subequal to the basal section of R_5 ; R_{1+2} and R_2 subequal; m-cu from one-third to one-fourth its length beyond the fork of M; abdominal tergites weakly infuscated.

Sex?—Wing, 6 millimeters.

Head broken. Pronotum and mesonotum chiefly whitish gray, pruinose; præscutum with very faintly indicated intermediate stripes, scutal lobes weakly darkened; pleura whitish, the posterior parts vaguely more darkened. Mesonotum very high and gibbous. Halteres with stem whitened, knob broken. Legs with the coxæ and trochanters white; femora and tibiæ snowy white, the tips very narrowly blackened, on the femora including about

the outer twentieth, tibiæ with tips very narrowly to scarcely darkened; tarsi broken. Wings (Plate 3, fig. 22) whitish subhyaline, restrictedly patterned with narrow pale brown clouds, placed at Sc_2 , origin of R_s , cord, outer end of cell 1st M_2 and R_2 , best indicated by a darkening in color of the veins which otherwise are pale yellow. Venation: R_{1+2} and R_2 subequal; R_{2+3+4} distinct, subequal to the basal section of R_5 ; cell M_1 shorter than its petiole; m-cu about one-third to one-fourth its length beyond the fork of M ; in one wing of the type basal section of M_3 slightly angulated, as figured.

Abdomen with the tergites weakly infuscated, sternites more yellowed: tip broken.

Habitat.—Nepal.

Holotype, Sex?, Simbhanjang Pass, altitude 8,190 feet, October 27, 1956 (*Coher*).

The most similar species is *Dicranota (Rhaphidolabina) spectralis* (Brunetti), of the eastern Himalayas, which differs in the coloration of the legs and in details of venation. Brunetti describes the tips of the femora and tibiæ of *spectralis* as being broadly black.

HEXATOMINI

TAIWANOMYIA PERPENDICULARIS (Alexander).

Plate 4, fig. 30.

Troglophila perpendicularis ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 602, 603.

The type male was from Doi Chom Cheng, Thailand, altitude 3,000 feet, February 17, 1953 (*Thurman*).

Male.—Length, about 4.5 millimeters; wing, 5; antenna, about 2.3.

General coloration of thoracic dorsum light brown, the pleura weakly infuscated above but not forming an evident stripe; wings (Plate 4, fig. 30) with a weak brownish tinge, unpatterned; vein R_{2+3} perpendicular or nearly so, subequal to R_2 ; cell 1st M_2 relatively small, shorter than M_4 ; male hypopygium with the apical point of the outer dististyle stout, the outer spine much more slender.

For a discussion of the synonymy of *Taiwanomyia* Alexander and *Troglophila* Brunetti, consult a paper by Alexander, Philip. Jour. Sci. 85 (1956) 360.

TAIWANOMYIA PERRETRACTA (Alexander).

Plate 4, fig. 31.

Troglophila perretracta ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 603.

The type female was from Dr. Buker's Cabin, Chiengmai, Thailand, February 4, 1953 (*Thurman*).

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

General coloration of mesonotum light chestnut brown, pleura yellow, with a very conspicuous black longitudinal stripe; wings (Plate 4, fig. 31) with a strong brownish tinge, the stigma and a cloud over the anterior cord darker; cell M_1 present; m-cu lying far basad, about two-thirds its own length before the fork of M.

PARADELPHOMYIA (OXYRHIZA) DISSITA sp. nov.

General coloration of thoracic notum brown, the surface subnitidous; antennæ 16-segmented; thoracic pleura with a broad dark brown dorsal stripe; wings with a weak brownish tinge, stigma darker; abundant macrotrichia in cells of outer third of wing; veins R_3 and R_4 divergent, cell R_3 at margin approximately one and one-half to two times more extensive than cell R_2 ; cell M_1 present, m-cu beyond midlength of M_{3+4} ; male hypopygium with the outer dististyle slender, with two apical blackened teeth and a remote spine on inner margin; gonapophysis and ædeagus elongate.

Male.—Length, about 4.5 to 5 millimeters; wing, 5 to 5.5; antenna, about 1.2.

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

Rostrum dark brown; palpi black. Antennæ 16-segmented, brownish black; basal flagellar segments long-oval, the outer ones passing into elongate, a little exceeding their verticils. Head dark brown.

Pronotum brown. Mesonotum brown, the surface subnitidous, the humeral region restrictedly more yellowed; posterior sclerites of notum a trifle darker brown; pleurotergite and sides of the mediotergite more reddened. Pleura with a broad dark brown dorsal stripe, the ventral sclerites more reddish brown. Halteres with stem dirty white, knob infuscated. Legs with all coxæ reddish brown; trochanters yellow; remainder of legs brownish yellow, conspicuously hairy. Wings with a weak brownish tinge, stigma still darker; veins brown. Abundant macrotrichia in the cells of outer third of wing, along the posterior margin extending as far basad as the end of cell 1st A. Venation: Sc_1 ending shortly before fork of Rs, Sc_2 far from its tip. Sc_1 subequal to R_{2+3+4} ; veins R_3 and R_4 divergent, cell

R_3 at margin approximately one and one-half to two times as extensive as cell R_2 ; cell M_1 present, about one-third to one-fourth its petiole; m-cu beyond midlength of M_{3+4} .

Abdominal tergites brown, subterminal segments dark brown to form a ring; sternites and hypopygium more reddish brown. Male hypopygium with the dististyles terminal; outer style unusually slender, terminating in two blackened teeth, the innermost stouter and slightly curved; at near two-thirds the length of the style on inner margin with an isolated more slender spine; inner style broad basally, narrowed to the obtuse tip, in the axil at its base with a very low setiferous lobule. Gonapophyses and ædeagus elongate, conspicuous, the latter sinuous, curved at apex.

Habitat.—Pakistan (Northwest Frontier Province).

Holotype, male, Kaghan, altitude 6,688 feet, June 27, 1953 (*Schmid*). Allotopotype, female, pinned with the type. Paratypes, 5 males and females, Murree Hills, altitude 7,242 feet, June 10, 1953 (*Schmid*).

Paradelphomyia (Oxyrhiza) dissita is quite distinct from *P. (O.) flavescens* (Brunetti) from the eastern Himalayas, differing in the coloration of the body, coloration and venation of the wings and, especially, in the structure of the male hypopygium.

PARADELPHOMYIA (OXYRHIZA) NEWAR Alexander.

Plate 4, figs. 32, 40.

Paradelphomyia (Oxyrhiza) newar ALEXANDER, Journ. N.Y. Ent. Soc. 71 (1958). In press.

The numerous types were from Simbhanjang Pass, Nepal, altitude 8,190 feet, October 1 to 27, 1956 (*Coher*).

Male.—Length, about 5.5 to 6 millimeters; wing, 6 to 7.

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

Size large (wing, 6 millimeters or more); mesonotal præscutum light brown, posterior sclerites of notum and the pleura yellow; wings (Plate 4, fig. 32) pale yellowish gray, unpatterned except for the pale brown stigma; outer cells of wing with numerous macrotrichia; cell M_1 present; abdominal tergites light brown, eight segment darker brown to form a narrow subterminal ring; male hypopygium (Plate 4, fig. 40) with the basistyle, *b*, produced at apex into a small spine, the dististyles, *d*, thus slightly subterminal in position; outer style terminating in two acute spines separated by a narrow notch, axial spine

longer; inner style stout, its tip obtuse; spines of the ventral fork very slender, almost setaceous.

PARADELPHOMYIA (OXYRHIZA) NUBIFERA Alexander.

Plate 4, fig. 33.

Paradelphomyia (Oxyrhiza) nubifera ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 600, 601.

The types, females, were from Doi Chom Cheng, Thailand, altitude 3,000 feet, January 1 to 2, 1953 (*Prayoon*).

Female.—Length, about 5 to 5.5 millimeters; wing, 4.5 to 5.

General coloration of thoracic dorsum brownish yellow, the postnotum and pleura blackened; basal segments of antennæ pale, the flagellar segments of antennæ beyond the first black; head silvery gray; legs yellow, the outer tarsal segments darkened; wings (Plate 4, fig. 33) whitish subhyaline, spotted and clouded with brown, including a larger almost continuous area over the cord; vein R_2 at or close to the fork of R_{2+3+4} .

PARADELPHOMYIA (OXYRHIZA) PRAYOONI Alexander.

Plate 4, figs. 34, 41.

Paradelphomyia (Oxyrhiza) prayooni ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 598–600.

The types, of both sexes, were from Doi Chom Cheng, Thailand, altitude 3,000 feet, January 2 to 3, 1953 (*Prayoon*).

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

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

General coloration of thorax obscure brownish yellow, the præscutum with three more or less distinct darker stripes, dorsal thoracic pleura blackened; rostrum yellow; legs yellow, the tips of the femora conspicuously black, of the tibiæ less distinctly so; wings (Plate 4, fig. 34) whitish, restrictedly patterned with brown; macrotrichia in outer cells of wing; vein R_2 some distance before the fork, leaving a distinct element R_{3+4} ; cell M_1 present; abdominal tergites more or less bicolored; male hypopygium (Plate 4, fig. 41) with the tergite produced medially into an oval lobe; basistyle, *b*, slightly produced at apex, dististyles, *d*, virtually terminal, outer style with the two outer spines slightly dissimilar in shape; ventral fork of ædeagus appearing as two long separated spines.

PSEUDOLIMNOPHILA ERNESTINA Alexander.

Plate 4, fig. 35.

Pseudolimnophila ernestina ALEXANDER, Ann. Mag. Nat. Hist. XII 6 (1953) 754, 755.

The type, a female, was from Chiangmai, Thailand, altitude 1,000 feet, taken by Mrs. Ernestine B. Thurman, to whom the species was dedicated.

Female.—Length, about 5.5 millimeters; wing, 5.5.

General coloration brownish yellow, the præscutum with four brown stripes; antennal scape and pedicel brownish black, first flagellar segment yellow, the others brown; thoracic pleura pale brown, conspicuously patterned with darker brown; legs brownish yellow; wings (Plate 4, fig. 35) with a weak brown tinge; vein Sc relatively short, Sc₁ ending a short distance before the fork of Rs; vein R₂ far before the fork, R₃₊₄ being nearly one-half of vein R₃ alone; cell M₁ present but small; m-cu at near one-third the length of M₃₊₄.

LIMNOPHILA (ELÆOPHILA) BICOLORATA Alexander.

Plate 4, fig. 36.

Limnophila (Elæophila) bicolorata ALEXANDER, Journ. N. Y. Ent. Soc. 71 (1958). In press.

The types, females, are from Amlekhgang, Nepal, altitude, 1,690 feet, December 2, 1956, and from Bhainse, December 8, 1956 (*Coher*).

Female.—Length, about 8 to 9 millimeters; wing, 6.5 to 7.

Size medium (wing of female about 7 millimeters); mesonotum gray, the præscutum lined with darker; a central darkened vitta on posterior sclerites; antennal flagellum bicolored; femora yellow, with a narrow brown subterminal ring, the actual tip paler; wings (Plate 4, fig. 36) whitened, with a heavy spotted and dotted dark brown pattern; abdomen brownish black.

ERIOPTERINI

TRENTEPOHLIA (MONGOMA) ALBOPOSTICATA sp. nov.

Plate 4, fig. 37.

General coloration of mesonotum light brown, the præscutum with a central dark brown stripe, each scutal lobe with a brown spot; pleura chiefly yellow, dorsal sclerites weakly darkened; legs black, the fore and middle tarsi brownish white, posterior legs with the outer end of tibia and proximal three-fourths of basitarsus snowy white, the outer tarsal segments brownish black; wings subhyaline, stigma darker.

Male.—Length, about 7 millimeters; wing, 7.3.

Rostrum yellow; maxillary palpi black. Antennæ with scape obscure yellow, remainder of organ black; flagellar segments elongate, subequal to the longest verticils; terminal segment a

little longer than the penultimate. Head blackish gray; anterior vertex narrow, carinate, as common in the genus.

Cervical sclerites obscure yellow. Pronotal scutum brown, with a few conspicuous erect black setæ, scutellum obscure yellow. Mesonotal præscutum light brown, with a conspicuous dark brown central stripe, wider and more intense in front, the posterior end narrowly divided; scutum brownish yellow, midregion yellow, each lobe with a conspicuous brown area on mesal part, lateral margin of scutal lobe with a few strong black setæ, scutellum brownish testaceous, parascutella clearer yellow; mediotergite chiefly dark brown, paling to obscure yellow on sides, pleurotergite yellow. Pleura chiefly yellow, the dorsal part, including the dorsopleural membrane, weakly darkened. Halteres brownish black, base of stem restrictedly yellow. Legs with the fore coxæ infuscated, remaining coxæ and all trochanters yellow; femora and tibiæ brownish black to black, fore and middle tarsi brownish white; posterior tibia black with about the outer eighth snowy white; basitarsus snowy white for most of its extent, with about the outer fourth and remaining tarsal segments brownish black; fore and middle femora at base with a row of seven or more black setæ, posterior femora with two or three slightly longer bristles. Wings (Plate 4, fig. 37) subhyaline, the narrow and inconspicuous stigma and the vague apex slightly darker; veins brown. Venation: R_{3+4} more than one-third R_2 ; cell R_3 broad at margin, about two and one-half times R_2 ; R_{2+3+4} longer than R_s ; m-cu close to fork of M; apical fusion of veins Cu_1 and 1st A moderate, subequal to m.

Abdominal tergites brownish black, the fifth and outer tergites paler brown; sternites light yellow; hypopygium obscure yellow, styli black.

Habitat.—South India.

Holotype, male, Mattupalayam, Coimbatore District, October 1956 (*Susai Nathan*).

The most similar regional species include *Trentepohlia* (*Monogoma*) *pallidiventr*is (Brunetti) and *T. (M.) bombayensis* Edwards, which have the leg coloration quite distinct, with the pattern generally similar on all legs. The present fly has only the posterior legs whitened and differs further in the black coloration of all outer tarsal segments.

TEUCHOLABIS (TEUCHOLABIS) PARAPLECIOIDES sp. nov.

Plate 4, fig. 38.

Generally similar to *plecioides*; head black; prothorax broadly orange behind; thoracic notum and pleura orange; antennæ,

halteres and legs black; wings tinged with brown, the costal and outer radial fields darker; Sc long, Sc₁ ending opposite R₂; R₁₊₂ about three times R₂; m-cu its own length beyond the fork of M; abdomen black.

Female.—Length, about 7.5 millimeters; wing, 6.8.

Rostrum, palpi and antennæ black. Head black.

Pronotum black on anterior half, orange behind. Mesothorax, including pleura, entirely dull orange. Halteres black. Legs with coxæ orange; remainder of legs uniformly black. Wings (Plate 4, fig. 38) tinged with brown, the prearcular, costal and outer radial fields much darker, the stigmal area scarcely differentiated from the coloration in cell R₂; vague pale longitudinal streaks in cell R adjoining vein M, along central part of cell Cu, and in the base of cell 1st A, adjoining the vein; veins brown. Venation; Sc long, Sc₁ ending opposite R₂; R₁₊₂ long, about three times R₂; m-cu about its own length beyond the fork of M; vein 2nd A longer than in *plecioides*.

Abdomen black, only the cerci paler, horn-yellow.

Habitat.—Nepal.

Holotype, female, Amlekhgang, altitude 1,690 feet, March 17, 1956 (*Coher*).

The most similar species is *Teucholabis* (*Teucholabis*) *plecioides* de Meijere, of Java and Sumatra, which differs in the details of body coloration and venation, as indicated in the diagnosis. The male specimen recorded from Pahang, Malay Peninsula, by Edwards [Journ. Fed. Malay St. Mus. 14 (1928) 95] may possibly pertain to the present species or may represent a still further member of this particular group.

TEUCHOLABIS (TEUCHOLABIS) PROGNE Alexander.

Plate 4, fig. 39.

Teucholabis (*Teucholabis*) *progne* ALEXANDER, Ann. Mag. Nat. Hist. XII 3 (1950) 687, 688.

The type male was from Cameron Highlands, Pahang, Malaya, altitude 4,800 feet, July 1948 (*Noël L. H. Krauss*).

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

Mesonotum chiefly polished black, the humeral region of the præscutum extensively yellow; vertex polished brown; knob of halteres light yellow; femora yellow; wings (Plate 4, fig. 39) broad, pale yellow, virtually unpatterned, stigma oval, brown; abdominal segments bicolored, yellow and dark brown; male hypopygium with the outer dististyle an elongate flattened blade, the inner style much larger.

TEUCHOLABIS (TEUCHOLABIS) THURMANI Alexander.

Plate 4, fig. 42.

Teucholabis (Teucholabis) thurmani ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 603, 604.

The types, all males, were from Doi Chom Cheng, Thailand, altitude 3,000 feet, May 4 to 10, 1952 (*Thurman*).

Male.—Length, about 8 millimeters; wing, 7.5.

Head, abdomen, antennæ, halteres and legs black, thorax orange; wings whitish subhyaline, patterned with brown, including cells C and Sc, broad band at cord, and the darkened apex, the latter two areas interconnected posteriorly; male hypopygium (Plate 4, fig. 42) with the dististyles, *d*, terminal in position; outer style simple, gently curved, the concave face at near midlength produced into a broad tooth; inner style tripartite, the largest or inner arm extended into a slender terminal spine, intermediate arm a shorter cylinder with four very long apical setæ, the outermost arm a slender simple spine.

GNOPHOMYIA (GNOPHOMYIA) ANAPHORA Alexander.

Plate 5, figs. 43, 50.

Gnophomyia (Gnophomyia) anaphora ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 604, 605.

The types were from Doi Chom Cheng, Thailand, altitude 3,000 feet, January 1 to 3, 1953, and the Wat, Doi Sutep, Thailand, altitude 2,000 feet, January 18, 1953 (*Prayoon & Thurman*).

Male.—Length, about 5 to 5.2 millimeters; wing, 5.5 to 5.8; antenna, about 2.5 to 2.6.

Female.—Length, about 5.2 millimeters; wing, 5.8.

General coloration of mesonotum reddish brown, darker behind; pleura yellow ventrally, the dorsal part with a broad black longitudinal stripe that is almost continuous; wings (Plate 5, fig. 43) subhyaline, the oval stigma medium brown, Sc long; male hypopygium (Plate 5, fig. 50) with the outer dististyle, *d*, simple, gently curved, narrowed to the subacute tip; phallosome, *p*, a central asymmetrical plate that narrows at apex into a blackened knob.

GNOPHOMYIA (GNOPHOMYIA) NEBULICINCTA Alexander.

Plate 5, fig. 44.

Gnophomyia (Gnophomyia) nebulicincta ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 605, 606.

The types were from the Wat, Doi Sutep, Thailand, altitude 2,000 feet, January 18, 1953 (*Prayoon*).

Male.—Length, about 4.2 to 4.5 millimeters; wing, 4.7 to 5; antenna, about 1.8 to 2.0

Size relatively small (wing of male 5 millimeters or less); general coloration black, restrictedly patterned with yellow; antennæ relatively long, exceeding one-third the length of wing; legs brown; wings (Plate 5, fig. 44) subhyaline, extensively clouded with pale brown before and just beyond the cord; male hypopygium with the outer dististyle slender, glabrous, narrowed to a subacute point, inner style shorter, enlarged at base; two sets of gonapophyses, the lateral pair large and powerful, very strongly bent, the inner pair subtending the somewhat shorter ædeagus.

GONOMYIA (PROTOGONOMYIA) NAMTOKENSIS Alexander. Plate 5, figs. 45, 51.

Gonomyia (Protonomyia) namtokensis ALEXANDER, Ann. Mag. Nat. Hist. XII 6 (1953) 911.

The types, males, were from Nam Tok (water falls), præ, Thailand, altitude 2,000 feet, February 14, 1952 (*Thurman*).

Male.—Length, about 5 to 5.2 millimeters; wing, 6 to 6.2.

Female.—Length, about 4.5 to 5 millimeters; wing, 5 to 5.5.

General coloration brownish gray, variegated with paler; thoracic pleura striped longitudinally with dark brown; femora yellowish brown; wings (Plate 5, fig. 45) with a weak brownish tinge, the stigma darker; male hypopygium (Plate 5, fig. 51) with three dististyles, *d*, the outermost a sinuous glabrous blade, its apex expanded, obtuse; intermediate style unequally forked; inner style a clavate blade that is provided with retrorse setæ.

GONOMYIA (IDIOCERA) THAIICOLA Alexander. Plate 5, figs. 46, 52.

Gonomyia (Idiocera) thaiicola ALEXANDER, Ann. Mag. Nat. Hist. XII 6 (1953) 912.

The types, representing both sexes, were from Chiangmai, Thailand, May 19, 1952 (*Thurman*).

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

Female.—Length, about 4.5 to 5 millimeters; wing, 5 to 5.5.

General coloration brown, the ventral half of the thoracic pleura more yellowed; head dark gray; rostrum, palpi and antennæ black; wings (Plate 5, fig. 46) weakly infuscated, the stigma not or scarcely darker; Sc short, cell *R*₃ relatively small; male hypopygium (Plate 5, fig. 52) with the outer dististyle, *d*, a long needlelike spine; intermediate style bifid, its outer arm a long flattened blade that bears a blackened recurved point on inner margin at near one-third the length, the inner arm again forking into two parts; inner style a simple rod, pointed at apex.

CRYPTOLABIS (BÆOURA) SUBNEBULA sp. nov.

Plate 5, fig. 47.

Head and mesonotum light gray, without clearly defined pattern; antennæ dark brown, flagellar verticils very long; legs brown; wings subhyaline, vaguely clouded with darker; Sc_1 ending about opposite one-third the length of R_{2+3+4} , Sc_2 before the fork of Rs.

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

Rostrum dark brown, palpi somewhat paler brown. Antennæ dark brown, the basal segments even more darkened; flagellar segments oval, the outer ones more elongate but still shorter than the long conspicuous verticils. Head light gray; anterior vertex broad.

Pronotum brownish gray, sides of scutellum yellowish brown. Mesonotal præscutum and scutum gray, the former virtually unicolorous above, with three rows of setæ to indicate the usual interspaces. Posterior sclerites of notum and the pleura damaged but presumably gray. Halteres broken. Legs with the fore coxæ dark brown, remaining coxæ and all trochanters obscure yellow; femora obscure brownish yellow, darker outwardly, tips narrowly still darker; remainder of legs light brown, the outer tarsal segments more blackened; femora and succeeding segments with very long and conspicuous setæ. Wings (Plate 5, fig. 47) subhyaline, vaguely clouded with still darker, especially at stigma and over the cord; less evident cloudings along vein R_5 and in cells M, Cu, 1st A and 2nd A; veins brown, more yellowed at base. Costal fringe long and conspicuous. Venation: Sc_1 ending about opposite one-third the length of R_{2+3+4} , Sc_2 before the fork of Rs; cell 2nd A relatively broad.

Abdomen brown, the terminal segments still darker. Ovipositor with the cerci oval, fleshy, with numerous setæ.

Habitat.—Nepal.

Holotype, female, Baridamar, altitude 1,690 feet, August 7, 1956 (*Coher*).

The most similar regional species is *Cryptolabis (Bæoura) distans* (Brunetti) which is described as having the wings pale gray and with the mesonotum wholly blackish, with a slight pruinosity.

ERIOPTERA (ERIOPTERA) SUBHALTERATA sp. nov.

Plate 5, figs. 48, 53.

General coloration of mesonotal præscutum light grayish brown, the lateral borders broadly yellow; dorsal thoracic pleurites with a brown longitudinal stripe; halteres with blackened knobs; legs yellow; wings yellowed, with a vague

darkened seam over the anterior cord; male hypopygium with the outer dististyle a simple blade that narrows to an acute point, inner style with its outer half produced into an unarmed club; gonapophysis a simple blackened rod, the tip acute.

Male.—Length, about 5 to 6 millimeters; wing, 6 to 7.

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

Rostrum and palpi brownish black. Antennæ with scape dark brown to brownish black, pedicel yellow to light brown, basal flagellar segments yellowed, outer ones somewhat darker; flagellar segments long-oval, exceeding the verticils. Head brownish gray on central part, the sides of vertex more buffy to yellow.

Pronotum brown medially, yellow on sides, including the pretergites. Mesonotal præscutum with four light grayish brown stripes, the interspaces slightly darker brown, including the median vitta which is broader and somewhat darker in front; humeral and lateral borders broadly light yellow; scutal lobes light brown, more or less pruinose, central area more yellowed; scutellum pale, weakly darkened on disk; postnotum brownish gray, the suture more yellowed. Pleura brownish yellow or light brown on ventral portion, with a broad darker brown longitudinal stripe, from and including the fore coxæ, widened behind, reaching the abdomen at the halteres; dorsopleural region light yellow. Halteres with stem light yellow, knob abruptly black. Legs with fore coxæ darkened, as described, remaining coxæ and trochanters yellow, femora yellow, tips not or but weakly darkened; tibiæ and tarsi yellow, the two outer tarsal segments darker. Wings (Plate 5, fig. 48) yellowed, the prearcular and costal regions clearer yellow; a darkened cloud over the anterior cord, best-indicated by a deepening in color of the veins, remaining veins yellow. Venation: m-cu at fork of M; vein 2nd A very strongly sinuous.

Abdomen chiefly dark brown, the extreme posterior borders of the segments pale, hypopygium dark brown; in female the sternites paler. Male hypopygium (Plate 5, fig. 53) with the inner apical lobe of basistyle, *b*, produced. Outer dististyle, *d*, a simple blade, narrowed to an acute point, the inner margin of the outer two-thirds slightly produced into a flange; inner style shorter, the basal half stout, the remainder prolonged into an obtuse club, outer margin at midlength with a tiny pale tubercle that bears a single microscopic seta. Phallosome, *p*, including a pair of simple gonapophyses, blackened and outcurved on outer half, tips acute.

Habitat.—Nepal.

Holotype, male, Simbhanjang Pass, altitude 8,190 feet, October 1, 1956 (*Coker*). Allotopotype, female pinned with the type. Paratopotypes, several of both sexes, mostly damaged, October 1 to 27, 1956.

Most similar to *Erioptera* (*Erioptera*) *halterata* Brunetti, differing in the coloration of the thoracic dorsum and pleura, weakly patterned wings, and structure of the male hypopygium. Brunetti's very brief description of the dististyles of the hypopygium of *halterata* cannot refer to the present fly.

ERIOPTERA TIRO Alexander.

Plate 5, fig. 49.

Erioptera (*Erioptera*) *tiro* ALEXANDER, Ann. Mag. Nat. Hist. XII 7 (1954) 607, 608.

The type female was from the Wat, Doi Sutep, Thailand, altitude 2,000 feet, January 18, 1953 (*Prayoon*).

Female.—Length, about 4.5 millimeters; wing, 5.2.

General coloration of mesonotum brownish gray, the posterior pleurites yellowed; halteres darkened; wings (Plate 5, fig. 49) with a brownish tinge, more saturated in the cells beyond the cord, restrictedly patterned with still darker brown; R_{2+3+4} short and subperpendicular, about one-third longer than R_{2+3} ; vein 2nd A long and strongly sinuous; ovipositor very long and slender, the valves nearly straight.

MOLOPHILUS (MOLOPHILUS) DIVERSILOBUS sp. nov.

Belongs to the *gracilis* group and subgroup; general coloration of the notum dark brown, pleura darkened dorsally; halteres yellow; male hypopygium fulvous; ventral lobe of basistyle bilobed, both dististyles slender, pointed at tips.

Male.—Length, about 4 to 4.3 millimeters; wing, 4.5 to 5.

Female.—Length, about 4.2 millimeters; wing, 4.5.

Rostrum brownish yellow; palpi dark brown. Antennæ short; basal segments brownish yellow, outer ones more infuscated, oval, with long verticils. Head dark gray.

Pronotum and pretergites obscure yellow. Mesonotal præscutum and scutum dark brown, sparsely pruinose; humeral region of præscutum yellow, pseudosutural foveæ brown; scutellum a trifle paler, in cases definitely yellowed; postnotum brown. Pleura dark brown dorsally, the ventral half paler. Halteres pale yellow. Legs with coxæ and trochanters yellow; femora

and tibiæ yellow, tips infuscated; tarsi brown. Wings grayish yellow, prearcular and costal fields clearer yellow; veins obscure yellow, trichia brown. Venation; R_2 lying shortly beyond the level of r-m; petiole of cell M_3 nearly three times m-cu; vein 2nd A sinuous, ending shortly beyond the level of m-cu.

Abdomen dark brown, hypopygium conspicuously light fulvous. Male hypopygium with the dorsal lobe of the basistyle relatively slender, with long setæ; ventral lobe moderately produced, bearing an obtusely rounded knob or lobule at its base. Dististyles slender, subequal in length and thickness, both pointed at tips, one more abruptly so.

Habitat.—Pakistan (Northwest Frontier Province).

Holotype, male, Vallée de Barthé, July 28, 1953 (*Schmid*). Allotopotype, female. Paratopotypes, several males.

Readily distinguished from other generally similar regional members of the *gracilis* group by the structure of the male hypopygium. It is closest to the species next described as *Molophilus* (*Molophilous*) *extensilobus* sp. nov.

MOLOPHILUS (MOLOPHILUS) EXTENSILOBUS sp. nov.

Belongs to the *gracilis* group and subgroup, allied to *diversilobus*; general coloration of mesonotum dark brownish gray or plumbeous, scutellum yellowed; antennæ brownish black; male hypopygium with the ventral lobe of the basistyle greatly extended, longer than the dististyles, the latter unequal in diameter.

Male.—Length, about 3.3 to 3.5 millimeters; wing, 3.8 to 4.

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

Rostrum and palpi brownish black. Antennæ brownish black throughout; flagellar segments oval, with long verticils. Head gray.

Pronotum chiefly infuscated, the scutellum and pretergites narrowly pale. Mesonotum chiefly dark brownish gray, the humeral region of the præscutum only vaguely more brightened; pseudosutural foveæ brownish black; scutellum obscure yellow. Pleura uniformly dark gray or plumbeous. Halteres pale yellow. Legs with coxæ yellow, the fore pair darker; trochanters yellow; remainder of legs brown to dark brown, femoral bases paler. Wings grayish yellow, the prearcular and costal regions brightened; veins and trichia darker brown. Venation: R_2 in virtual transverse alignment with r-m; petiole of cell M_3 about three times m-cu; vein 2nd A sinuous, ending nearly opposite m-cu.

Abdomen dark brown, genitalia brightened. Male hypopygium generally as in *diversilobus*; ventral lobe of basistyle greatly extended, longer than the dististyles, narrowed to a subacute point, the basal lobule large and conspicuous. Dististyles unequal in diameter, the basal half of one expanded, approximately twice as thick as the second style.

Habitat.—Kashmir and Pakistan.

Holotype, male, Surgun sur, Pakistan, altitude 6,875 feet, July 29, 1953 (*Schmid*). Allotopotype, female, pinned with type. Paratopotype, 1 female; paratypes, males and females, Kel, Kashmir, altitude 6,544 feet, May 19, 1954 (*Schmid*).

Molophilus (Molophilus) extensilobus is separated from *M. (M.) diversilobus* sp. nov., by the smaller size, darker color of the body and antennæ and, especially, by the structure of the male hypopygium, particularly the basistyle and dististyles.

STYRINGOMYIA CAUDIFERA Alexander.

Plate 5, fig. 54.

Styringomyia caudifera ALEXANDER, Ann. Mag. Nat. Hist. XII 6 (1953) 913, 914.

The type male was from Chiangmai, Thailand, August 17, 1952 (*Thurman*).

Male.—Length, about 7 millimeters; wing, 4.8.

Mesonotal præscutum with more than the anterior half brownish black, the posterior half, with the centers of the scutal lobes and a central line on the scutellum yellow; wings with four larger brown spots and small marginal darkenings at ends of the veins; male hypopygium (Plate 5, fig. 54) with the sternite, *s*, relatively broad, the two setæ separated; intermediate arm of dististyle, *d*, produced into an acute beak with a smaller subtending spine; phallosome, *p*, including a long curved posterior spine and a pair of small blackened beaks.

ILLUSTRATIONS

[Legend: *a*, aedeagus; *b*, basistyle; *d*, dististyle; *g*, gonapophysis; *p*, phallosome; *s*, sternite; *t*, tergite.]

PLATE 1

- FIG.** 1. *Dolichopeza* (*Nesopeza*) *angustissima* sp. nov.; venation.
 2. *Tipula* (*Schummelia*) *lama* Alexander; venation.
 3. *Tipula* (*Schummelia*) *notomelania* Alexander; venation.
 4. *Tipula* (*Tipulodina*) *subscimitar* Alexander; venation.
 5. *Dolichopeza* (*Nesopeza*) *angustissima* sp. nov.; male hypopygium.
 6. *Tipula* (*Schummelia*) *notomelania* Alexander; male hypopygium.
 7. *Tipula* (*Tipulodina*) *forficuloides* Alexander; male hypopygium.
 8. *Tipula* (*Tipulodina*) *malabarensis* sp. nov.; male hypopygium.
 9. *Tipula* (*Tipulodina*) *subscimitar* Alexander; male hypopygium.

PLATE 2

- FIG.** 10. *Tipula* (*Vestiplex*) *gurkha* Alexander; male hypopygium.
 11. *Tipula* (*Vestiplex*) *lepcha* Alexander; male hypopygium.
 12. *Tipula* (*Indotipula*) *blandita* Alexander; male hypopygium.
 13. *Tipula* *shawiana* Alexander; male hypopygium.
 14. *Limonia* (*Limonia*) *micropyga* Alexander; venation.
 15. *Limonia* (*Limonia*) *perdocta* Alexander; venation.
 16. *Limonia* (*Limonia*) *sielediva* sp. nov.; venation.
 17. *Limonia* (*Limonia*) *tagax* Alexander; venation.
 18. *Limonia* (*Limonia*) *vajra* Alexander; venation.

PLATE 3

- FIG.** 19. *Limonia* (*Geranomyia*) *ganesa* sp. nov.; venation.
 20. *Orimarga* (*Orimarga*) *sherpa* Alexander; venation.
 21. *Antocha* (*Antocha*) *perstudiosa* Alexander; venation.
 22. *Dicranota* (*Rhaphidolabina*) *subspectralis* sp. nov.; venation.
 23. *Dicranota* (*Rhaphidolabis*) *furcistyla* Alexander; venation.
 24. *Limonia* (*Limonia*) *sielediva* sp. nov.; male hypopygium.
 25. *Limonia* (*Limonia*) *micropyga* Alexander; male hypopygium.
 26. *Limonia* (*Limonia*) *vajra* Alexander; male hypopygium.
 27. *Limonia* (*Geranomyia*) *ganesa* sp. nov.; male hypopygium.
 28. *Antocha* (*Antocha*) *perstudiosa* Alexander; male hypopygium.
 29. *Dicranota* (*Rhaphidolabis*) *furcistyla* Alexander; male hypopygium.

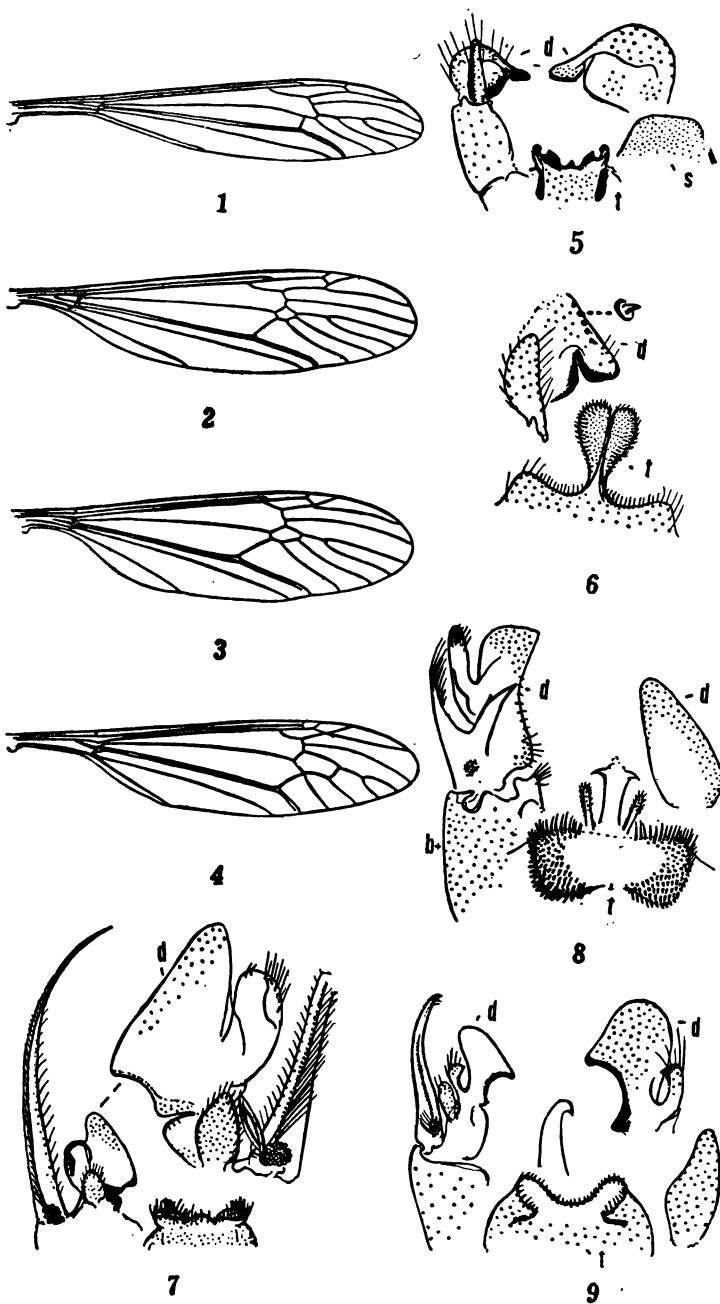
Illustrations

PLATE 4

- FIG. 30. *Taiwanomyia perpendicularis* (Alexander); venation.
31. *Taiwanomyia perretracta* (Alexander); venation.
32. *Paradelphomyia* (*Oxyrhiza*) *newar* Alexander; venation.
33. *Paradelphomyia* (*Oxyrhiza*) *nubifera* Alexander; venation.
34. *Paradelphomyia* (*Oxyrhiza*) *prayooni* Alexander; venation.
35. *Pseudolimmophila ernestina* Alexander; venation.
36. *Limnophila* (*Elæophila*) *bicolorata* Alexander; venation.
37. *Trentepohlia* (*Mongoma*) *alboposticata* sp. nov.; venation.
38. *Teucholabis* (*Teucholabis*) *paraplectioides* sp. nov.; venation.
39. *Teucholabis* (*Teucholabis*) *progne* Alexander; venation.
40. *Paradelphomyia* (*Oxyrhiza*) *newar* Alexander; male hypopygium.
41. *Paradelphomyia* (*Oxyrhiza*) *prayooni* Alexander; male hypopygium.
42. *Teucholabis* (*Teucholabis*) *thurmani* Alexander; male hypopygium.

PLATE 5

- FIG. 43. *Gnophomyia* (*Gnophomyia*) *anaphora* Alexander; venation.
44. *Gnophomyia* (*Gnophomyia*) *nebulicincta* Alexander; venation.
45. *Gonomyia* (*Protogonomyia*) *namtokensis* Alexander; venation.
46. *Gonomyia* (*Idiocera*) *thaiicola* Alexander; venation.
47. *Cryptolabis* (*Bæoura*) *subnebula* sp. nov.; venation.
48. *Erioptera* (*Erioptera*) *subhalterata* sp. nov.; venation.
49. *Erioptera tiro* Alexander; venation.
50. *Gnophomyia* (*Gnophomyia*) *anaphora* Alexander; male hypopygium.
51. *Gonomyia* (*Protogonomyia*) *namtokensis* Alexander; male hypopygium.
52. *Gonomyia* (*Idiocera*) *thaiicola* Alexander; male hypopygium.
53. *Erioptera* (*Erioptera*) *subhalterata* sp. nov.; male hypopygium.
54. *Styringomyia caudifera* Alexander; male hypopygium.



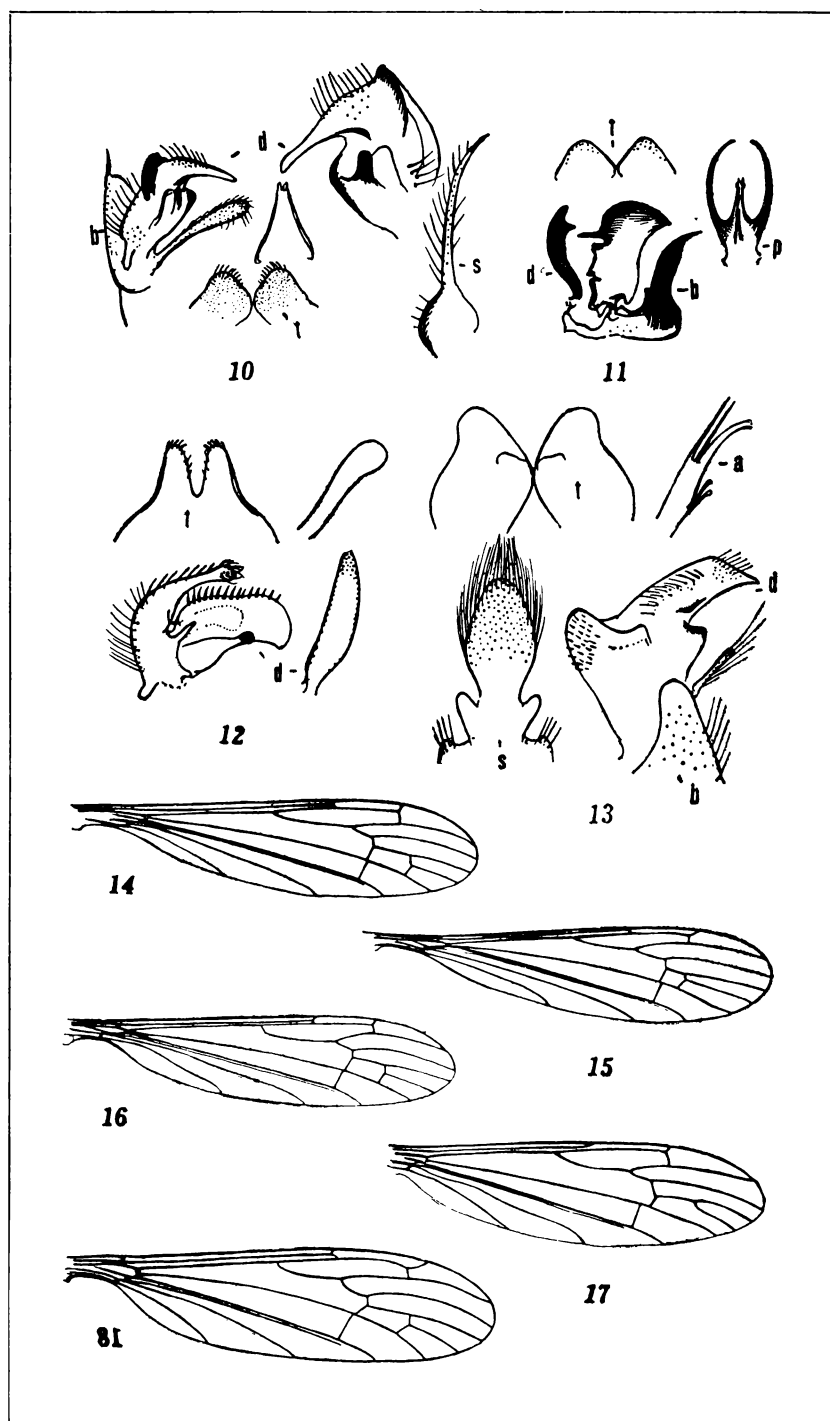


PLATE 2.

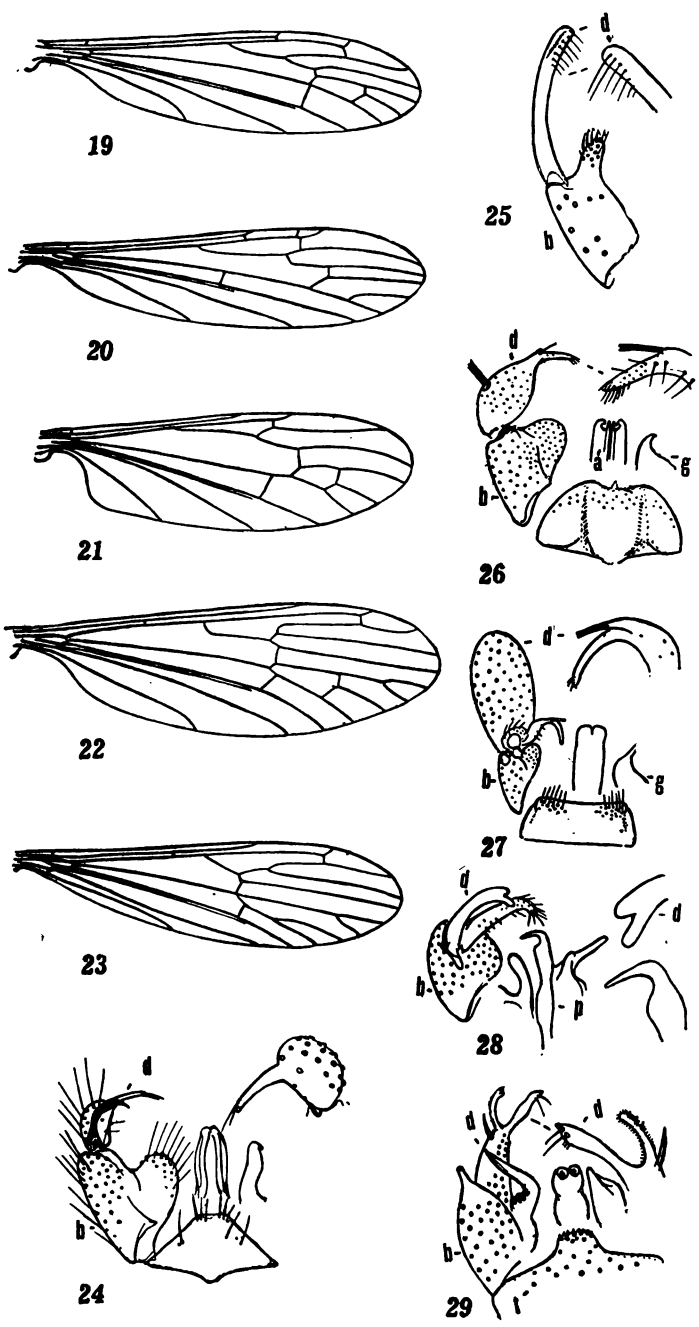


PLATE 3.

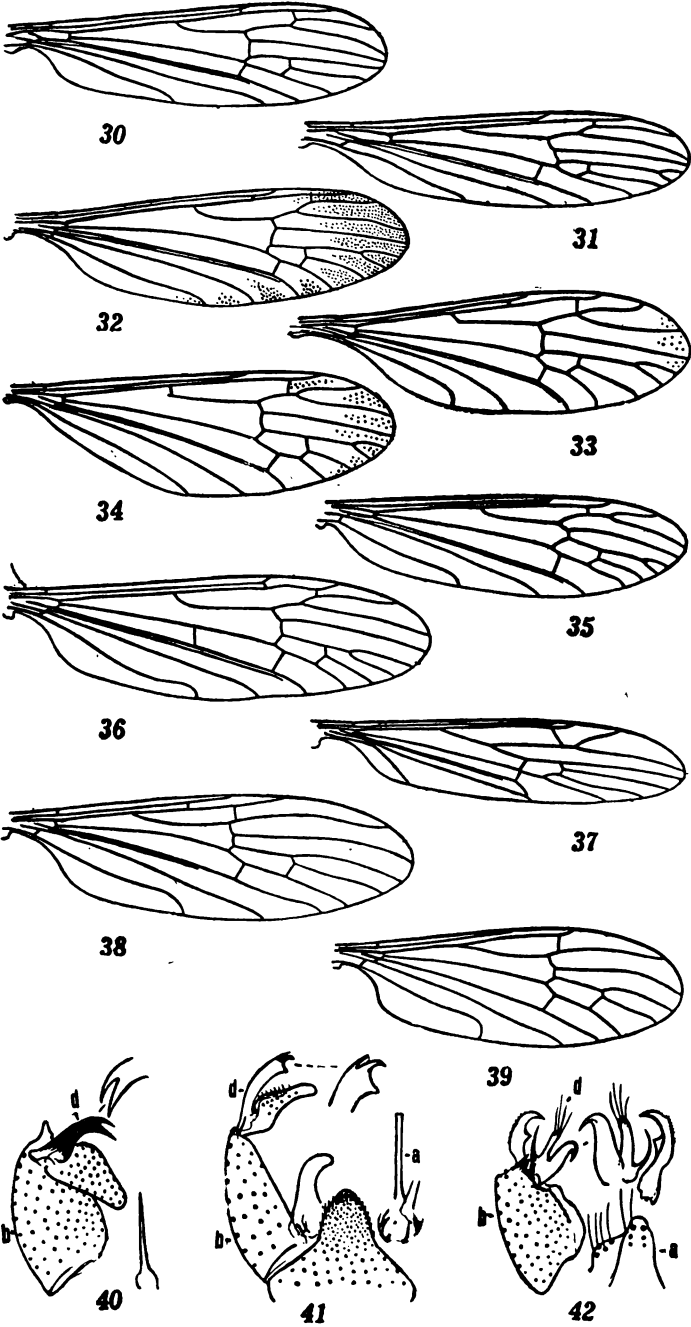


PLATE 4.

