

NEW OR LITTLE-KNOWN TIPULIDAE (DIPTERA).
XCVII. ORIENTAL-AUSTRALASIAN SPECIES.

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IN the present report I am discussing various species from north-western Thailand received through the appreciated interest of Dr. and Mrs. Deed C. Thurman, Jr., collected by themselves and by one of their native collectors, Mr. Prayoon C. I am greatly indebted to all persons concerned for these very interesting species, the types of which are preserved in my personal collection.

I am indebted to Dr. Thurman for a somewhat detailed account of the chief areas where collections of these flies were made, that is on two mountains (Doi) not far distant from Chiangmai. The following extracts from his letters will aid in understanding the location of these important stations. "The cabin of Miss Sadie Lemmon, a nurse in Chiangmai, is located on a small hill called Wong Kut, which is really on the side of Doi Chom Cheng and Doi Pui, two of the highest peaks of the Sutep Range. Dropping off the side of Miss Lemmon's hill are deep valleys which are from about one hundred to several hundred feet below the cabin itself. In these valleys or glens may often be found small streams. The approximate altitude of the cabin is 3000 feet and above this altitude in North Thailand the thick mountain jungle begins. Here there is more rainfall than in the valleys and the vegetation is thick and heavy. Teak forests grow at the heads of the valleys except where they have been removed by cutting but not much teak now remains in the vicinity of the cabin. Tall pines grow on the hill tops but no conifers grow down in the valleys. Labelled *Miss Lemmon's Cabin*."

"On the side of Doi Sutep, near Chiangmai, is a large Wat or temple, famous throughout Thailand. The altitude here is about 2000 feet and although separated from Miss Lemmon's cabin by several ridges and valleys and only some five kilos in a direct line, the insect fauna seems to be different, changing slightly from valley to valley according to the vegetation, rainfall, soil pattern and the like. These northern Thailand hills seem to contain many hundreds of different ecological niches so that the species to be found here run to a much greater variety than one would expect from the same number of square miles in other parts of the world. Labelled *Wat, Doi Sutep*."

Tipula (Schummelia) lama, sp. n.

Size medium (wing, male, 9.5 mm.); 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

flagellar segments passing through oval to elongate-oval; terminal segment longer than the penultimate, pointed at outer end. Head brownish black, sparsely pruinose; anterior vertex reduced to a narrow line that is only about as wide as a single row of ommatidia.

Pronotum brown, the scutellum and pretergites pale yellow. Mesonotum brown, the humeral region of the præscutum more yellowed, the disk of the præscutum uniformly brown; scutellum dark brown; postnotum pale, the anterior part of the mediotergite infuscated. Pleura and pleurotergite pale yellowish white, with a very conspicuous brownish-black longitudinal stripe extending from the pronotum to the base of abdomen, including the dorsopleural region, dorsal pleurites and ventral pleurotergite. Halteres brownish black, the base of stem restrictedly yellow. Legs with the coxæ and trochanters whitened, the base of the fore coxæ a little darkened; femora light brown; remainder of legs broken. Wings with a brownish tinge; stigma oval, slightly darker brown; veins brown. Venation: Sc long, Sc_1 ending nearly opposite four-fifths the length of Rs , Sc_2 near its tip; free tip of Sc_2 and R_2 in transverse alignment; Rs long, fully four times the basal section of R_{4+5} , cell 1st M_2 rectangular, about as long as the outer section of M_3 ; $m-cu$ just beyond the fork of M ; cell 2nd A narrow.

Abdominal tergites dark brown, sternites clear light yellow. Male hypopygium very small and simple. Basistyle darkened, the ventromesal lobe near the extreme outer end, its outer half with setæ, some straight, others stouter and curved. A single dististyle with no evident basal enlargement or body, appearing as a gently arcuated pale yellow rod or blade, only a trifle narrower at mid-length, the tip obtuse; lower margin of style with erect pale setæ, those near tip very long, directed inwardly or mesad.

Hab. North-west Thailand.

Holotype, ♂, Wat, Doi Sutep, altitude 2,000 feet, January 18, 1953 (*Prayoon*).

Although generally similar to some other small members of the genus from this same region, including *Limonia* (*Limonia*) *perdocta*, sp. n., the present fly is very distinct in the structure of the very small male hypopygium, especially the greatly reduced dististyle.

Limonia (*Limonia*) *tagax*, sp. n.

Size small (wing, male, less than 5 mm.); general coloration of thorax yellow, the pleura with a narrow dark brown longitudinal stripe; head grey, eyes long and narrow, contiguous above or virtually so; wings 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.

Male.—Length about 4 mm.; wing 4.5 mm.

Rostrum obscure yellow; palpi a little darker. Antennæ black throughout; flagellar segments subcylindrical, with very short abrupt apical pedicels; basal segments short, becoming progressively more

lengthened outwardly, the terminal segment about one-fourth longer than the penultimate. Head grey, with very long coarse bristles behind; anterior vertex reduced to a narrow line or the eyes virtually tangential above, appearing very long and narrow when viewed from the side.

Thoracic dorsum obscure yellow or brownish yellow, virtually unpatterned, the scutal lobes and centre of the mediotergite weakly darkened. Pleura and pleurotergite pale yellow with a narrow but conspicuous dark brown longitudinal stripe extending from the cervical sclerites to the base of abdomen, the metapleura and meron very pale yellow. Halteres pale yellow, the base of knob infuscated. Legs with coxæ and trochanters yellow, the fore coxæ more infuscated; femora obscure yellow, becoming a little darker outwardly, the extreme tip vaguely yellow; tibiæ and tarsi yellow, the outer tarsal segments weakly darkened; claws long and slender, with a strong basal spine and a smaller one at near mid-length. Wings subhyaline, the subcircular stigma brown; veins pale brown. Venation: Sc_1 ending just before mid-length of the long R_s ; cell 1st M_2 open by the atrophy of the basal section of M_3 ; cell 2nd M_2 longer than its petiole; $m-cu$ shortly before the fork of M .

Abdominal tergites dark brown, the extreme posterior borders narrowly pale; basal sternite yellowed. Male hypopygium with the tergite transverse, the posterior margin gently convex, the central portion more truncate; a single transverse row of about a dozen strong setæ back from the margin. Basistyle with the ventromesal lobe basal, large and rounded with some of the setæ short and stout. Dististyle less than one-third as large as the basistyle; body oval, the long prolongation gently curved to the acute tip. Gonapophysis with the mesal-apical lobe relatively slender, the tip subacute.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, January 2, 1953 (*Prayoon*).

Readily told from the nearest allied regional species, *Limonia (Limonia) desiderata* Alexander, also with cell 1st M_2 open by the atrophy of the basal section of M_3 , by the coloration, venation and structure of the male hypopygium.

Dicranota (Rhaphidolabis) furcistyla, sp. n.

Size relatively small (wing, male, 4.2 mm.); mesonotal præcutum obscure yellow, the disk with three dark brown stripes; antennæ relatively long; legs light brown; wings subhyaline, stigma vaguely indicated; R_{2+3+4} long, anal cells narrow; male hypopygium with the posterior border of the ninth tergite produced into a low broad lobe; dististyle forked, the arms unequal; a strong pale spine on outer margin of basistyle at base of dististyle.

Male.—Length about 3.5 mm.; wing 4.2 mm.

Rostrum and palpi black. Antennæ black, the base of scape pale; relatively long, the basal flagellar segments short and crowded, at near

mid-length becoming more elongate. Head with front, anterior vertex and orbits pale, the remainder of vertex dark brown.

Pronotal scutum dark brown, scutellum pale yellow, its sides produced. Mesonotal præscutum obscure yellow laterally, with three dark brown stripes, the median one very broad; scutal lobes similarly darkened, the region of the suture pale; scutellum testaceous brown, the postnotum less darkened. Thorax very deep, the præscutum correspondingly gibbous. Pleura infuscated, dorsopleural region yellow. Halteres infuscated, base of stem yellow. Legs with the coxæ and trochanters pale yellow; remainder of legs light brown. Wings subhyaline, the stigmal region vaguely and very diffusely more darkened; veins brown. Venation: *Sc* relatively short, *Sc*₁ ending shortly before the fork of *R*₂₊₃₊₄, *Sc*₂ far before the origin of *Rs*, the latter oblique; *R*₂₊₃₊₄ long, only a little shorter than *Rs*; *R*₂ transverse, subequal to *R*₁₊₂; cell *M*₁ present; *m-cu* about its own length beyond the fork of *M*; anal cells very narrow, the entire anal field correspondingly reduced.

Abdominal tergites dark brown, including the hypopygium, the more basal sternites a little more brightened. Male hypopygium with the posterior border of the ninth tergite produced into a low broad lobe, the apex truncate, with several long setæ. Basistyle on outer face produced into a tubercle, the apex of which is broken but presumably terminates in a bristle; outer end of style narrowed; interbase a powerful rod that narrows into an elongate blade. Dististyle forked, the outer arm smaller, microscopically tuberculate and provided with delicate setulæ; inner arm longer, terminating in two strong setæ, the outer a little shorter; apex of basistyle, on outer margin near base of dististyle, with a strong pale spine. Ædeagus stout, terminating in two darkened lobes. Gonapophyses appearing as subtriangular flattened plates.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, January 2, 1953 (*Prayoon*).

This unusually interesting and distinct fly is most similar to species such as *Dicranota (Rhaphidolabis) setulifera* Alexander and *D. (R.) sordida* (Brunetti), differing in the coloration of the body and, especially, the structure of the male hypopygium, particularly the basistyle and dististyle.

Paradelphomyia (Oxyrhiza) prayooni, sp. n.

General coloration of thorax obscure brownish yellow, the præscutum with three more or less distinct darker stripes; rostrum yellow; dorsal thoracic pleura blackened; legs yellow, the tips of femora conspicuously black, of the tibiæ less distinctly so; wings whitish, restrictedly patterned with brown; macrotrichia in outer cells of wing; *R*₂ some distance before fork, leaving a distinct element *R*₃₊₄; cell *M*₁ present; abdominal tergites more or less bicoloured; male hypopygium with the ventral fork appearing as two separated slender spines.

Male.—Length about 4.5 mm.; wing 5 mm.

Female.—Length about 5.5 mm.; wing 6 mm.

Rostrum yellow; palpi black. Antennæ black throughout; basal flagellar segments stout, oval, the outer segments more slender and elongate, with long conspicuous verticils. Head brown, more reddened behind.

Pronotum obscure brownish yellow, darker laterally, pale behind. Mesonotal præscutum obscure brownish yellow, with three more or less distinctly separated darker stripes, not reaching the suture behind; scutal lobes darkened, the median region and scutellum pale; mediotergite darkened. Dorsal pleurites dark brown to form a broad stripe, the ventral pleurites paler, the ventral sternopleurite and meron yellow. Halteres with stem whitened, knob dark brown. Legs with the fore coxæ darkened, the remainder and all trochanters pale yellow; femora yellow, the tips abruptly blackened, the amount subequal on all legs; tibiæ brownish yellow, the tips more narrowly blackened; tarsi brownish yellow, the outer segments passing into dark brown. Wings whitened, restrictedly patterned with brown, including areas at arculus, origin of *Rs*, *Sc*₂, cord, outer end of cell 1st *M*₂, and forks of *R*₃₊₄ and *M*₁₊₂; stigma short-oval, slightly darker; veins yellow, darker in the patterned areas. Relatively numerous macrotrichia in stigma and in outer ends of cells *R*₃ to *M*₃, more abundant near wing-tip. Wings of male broadest opposite termination of vein 2nd *A*. Venation: *Sc*₁ ending nearly opposite fork of *Rs*, *Sc*₂ a short distance from its tip; *Rs* angulated and more or less spurred at origin; *R*₂ some distance before the fork, leaving a distinct element *R*₃₊₄ that may be nearly one-third *R*₂; cell *M*₁ about one-half its petiole; cell 1st *M*₂ gently widened outwardly, with *m-cu* at near three-fifths its length.

Abdominal tergites of male bicoloured, brownish black, the outer third paling to brownish yellow or light brown, the extreme posterior border still paler, most extensively so on the outer segments; sternites somewhat more yellowed; hypopygium black. In the female, the tergites more uniformly blackened; intermediate sternites bicoloured, the bases dark, the posterior borders yellow, the basal sternites clear yellow. Male hypopygium with the tergite produced medially into an oval, densely setiferous lobe. Basistyle produced at apex into a very small, darkened knob, the dististyles virtually terminal, some of the outer setæ very long. Outer dististyle with the two outer spines slightly dissimilar, the outer being a little straighter and more slender; inner dististyle longer, the base expanded. Gonapophysis very large, appearing as a flattened pale blade incurved to the mid-line, the tip obtuse. Ædeagus long and slender, the ventral fork appearing as very long, slender, straight spines that are about one-third as long as the ædeagus, widely separated at bases.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, January 2, 1953 (*Prayoon*). *Alotype*, ♀. *Paratopotypes*, 2 ♂♂, January 2-3, 1953.

This interesting crane-fly is named for the collector, Mr. Prayoon C, who collected several interesting Tipulidæ in the vicinity of Chiengmai.

The fly is quite distinct from the rather numerous regional species now known, differing in the characteristic wing-pattern, details of venation, the broadly blackened femoral tips and the structure of the male hypopygium.

Paradelphomyia (Oxyrhiza) nubifera, sp. n.

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

Female.—Length about 5–5.5 mm.; wing 4.5–5 mm.

Rostrum dark brown; palpi black. Antennæ with scape and pedicel orange to brown, the former more or less pruinose, the latter darker at tip; first flagellar segment yellow, the remainder black; flagellar segments elongate, with conspicuous verticils. Head silvery grey, clearer in front.

Pronotum brownish yellow, darker on sides. Mesonotal præscutum, scutum and scutellum dull brownish yellow to fulvous, the postnotum and pleura blackened, the latter somewhat paler ventrally. Halteres brown, the base of stem narrowly yellow. Legs with the coxæ and trochanters yellow, the fore coxæ darkened; legs yellow, the outer tarsal segments darkened. Wings with the ground whitish subhyaline, spotted and clouded with brown, including a larger almost continuous area over the cord, extending from the darker stigma almost to the posterior border; other solidly darkened clouds at ends of all longitudinal veins, arculus, postarcular on vein R , origin of Rs , Sc_2 and fork of M_{1+2} ; extensive paler brown washes in basal two-thirds of cell M , basal half of Cu , and proximal ends of anal cells; prearcular and costal fields clearer yellow, especially the veins; veins yellow, darker in the patterned areas. Macrotrichia in outer ends of cells R_3 to M_3 in paratype, in the holotype restricted to cell R_4 . Wings of female broadest opposite cells 1st A . Venation: Sc_1 ending shortly before level of fork of Rs , Sc_2 a short distance from its tip; R_2 at or beyond the fork of R_{2+3+4} ; vein R_3 upcurved at outer end, cells R_2 and R_3 at margin subequal; cell M_1 about two-thirds its petiole; $m-cu$ at near one-third the length of cell 1st M_2 ; vein 2nd A curved abruptly into the margin.

Abdominal tergites dark brown, the sternites a trifle paler. Cerci slender, gently upcurved.

Hab. North-west Thailand.

Holotype, ♀, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, January 2, 1953 (*Prayoon*). *Paratopotype*, ♀, January 1, 1953.

From other regional members of the genus that have a somewhat similar wing-pattern, including *Paradelphomyia (Oxyrhiza) nebulosa* (de Meijere), *P. (O.) perumbrosa* (Alexander), *P. (O.) subnebulosa*

Alexander, and others, this species differs in the coloration of the body, details of venation, and distribution of the darkened pattern of the wings.

Epiphragma (Epiphragma) caligata, sp. n.

Size medium (wing under 10 mm.); mesonotal præscutum grey on posterior half, the anterior part of the median stripe brown; pleura dark brown, variegated with greyish yellow; femora yellow, the tips very broadly black, including about the outer fourth; wings whitish subhyaline with a conspicuous brown pattern that is chiefly ocelliform in nature; areas along costal border with clear centres in the costal cell, becoming darker behind in cell R ; cell R_3 at margin more than twice as extensive as cell R_2 ; cell 2nd A narrow; male hypopygium with the tergal lobes narrow; interbase terminating in a short recurved spine.

Male.—Length about 7–10 mm.; wing 8–11 mm.; antenna about 1.4–1.8 mm.

Female.—Length about 9.5 mm.; wing 9.3 mm.

Rostrum brown basally, paler at apex; palpi brownish black. Antennæ relatively short; scape and pedicel black; fusion segment yellow, remainder of flagellum brownish black; outer segments subcylindrical with long conspicuous verticils. Head fulvous, the vertex narrowly darkened medially, in the holotype leaving the orbits broadly pale.

Pronotum yellow, dark brown medially, the scutellum and pretergites pale yellow. Mesonotal præscutum with the humeral and lateral portions chestnut-brown or fulvous, the disk with three stripes, the anterior half of the median stripe brown, the posterior half of the sclerite grey, the posterior interspaces more yellowed; scutum broadly dark brown forming a broad band between the wing-bases; scutellum brownish yellow; mediotergite variegated, the base, apex and sides dark brown, the central part more fulvous, with a light grey pruinosity; pleurotergite black with a large central light grey area. Pleura greyish yellow, variegated with large brown areas, chiefly dorsal, on the anepisternum, and on the ventral sternopleurite and meron. Halteres with stem obscure yellow, the base of knob brown, the apex restrictedly yellowed. Legs with the coxæ yellow, the tips of the middle and hind pairs narrowly darkened; trochanters brownish yellow; femora yellow, the tips very broadly black, involving approximately the outer fourth, immediately before this with a narrow clearer yellow ring; tibiæ and tarsi yellow. Wings whitish subhyaline, with a conspicuous brown pattern that is chiefly ocelliform; costal region with four such areas, the margins narrowly dark brown, the centres in cell C hyaline, becoming more uniformly darkened behind; pattern of the disk with the dark colour slightly more extensive than the pale ground; an open ocellus at mid-length of cell Cu ; cell 2nd A with confluent spots and larger areas; veins yellow, darker in the patterned areas. Venation: vein R_3 upturned at tip, cell R_3 at margin more than twice as extensive as cell R_2 ; $m-cu$ beyond the fork of M , in cases up to its own length; cell 2nd A narrow.

Abdomen dark brown, conspicuously patterned with yellow, most evident as large triangular areas on the sides of the posterior half or as broad pale rings at the posterior border; hypopygium light brown. Male hypopygium with the tergal lobes narrow, truncate at tips, separated by a somewhat narrower median notch. Interbase a slender rod, its apex a short recurved spine. Outer dististyle on outer fourth very strongly curved into an acute spine. Inner dististyle longer, the apex obtuse.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, February 15, 1953 (*Prayoon*). *Allotopotype*, ♀, pinned with type. *Paratopotype*, ♂, January 1, 1953 (*Prayoon*); *paratype*, ♂, Wat, Doi Sutep, altitude 2,000 feet, December 30, 1952 (*Thurman*).

From other regional species of the genus, as *Epiphragma* (*Epiphragma*) *pendleburyi* Edwards, *E. (E.) signata* de Meijere, and *E. (E.) vicina* Brunetti, the present fly is readily told by the distinctive pattern of the legs and wings.

Troglophila perpendicularis, sp. n.

General coloration of thoracic dorsum light brown, the pleura weakly infuscated above but not forming an evident stripe; wings 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.

Male.—Length about 4.5 mm.; wing 5 mm.; antenna about 2.3 mm.

Rostrum obscure yellow; palpi dark brown. Antennæ with the scape and pedicel reddish brown, flagellum brownish black; flagellar segments very long-cylindrical, with conspicuous outspreading verticils. Head brown; eyes small; anterior vertex very broad.

Thoracic dorsum light brown, pleura weakly infuscated above but not producing an evident stripe, more yellowed ventrally. Halteres pale. Legs with the coxæ and trochanters yellowish testaceous; remainder of legs dark brown, the femoral bases restrictedly pale. Wings with a weak brownish tinge, the stigma not or scarcely more darkened; prearcular and costal fields vaguely brighter than the rest of the ground; veins brown. Venation: Sc_1 ending just beyond the fork of R_s , Sc_2 near its tip; R_{2+3+4} nearly four-fifths R_s ; R_{2+3} perpendicular or nearly so, subequal to R_2 ; cell 1st M_2 relatively small, shorter than vein M_4 ; *m-cu* just beyond the fork of M .

Abdomen, including hypopygium, brown. Male hypopygium with the outer dististyle straight, relatively stout, the apical point stout, subacute, subtended on outer margin by a much more slender spine.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, February 17, 1953 (*Thurman*).

Very similar to *Troglophila lativertex* Alexander, of the Malay Peninsula, differing in slight details of venation and structure of the male hypopygium.

Troglophila perretracta, sp. n.

General coloration of mesonotum light chestnut-brown, pleura yellow with a very conspicuous black longitudinal stripe; wings 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 length before the fork of M .

Female.—Length about 5 mm.; wing 6 mm.

Rostrum fulvous, palpi darker. Antennæ dark brown, the outer flagellar segments broken; basal segments subcylindrical, moderately long, the entire antenna evidently relatively long. Head concealed in the unique type.

Pronotum brown. Mesonotum chiefly light chestnut-brown. Pleura with a very conspicuous black longitudinal stripe that extends to the abdomen, bordered above and less evidently beneath by a narrow silvery line; dorsal pleurites light brown, the ventral sclerites clear yellow. Halteres broken. Legs with the coxæ and trochanters light yellow, remainder of legs brown, the femoral bases somewhat paler, outer tarsal segments still darker. Wings with a strong brown tinge, the prearcular and costal regions a little more brownish yellow; stigma and a cloud over the anterior cord darker than the ground; veins dark brown, somewhat paler in the costal and basal portions. Venation: Sc_1 ending opposite fork of Rs , Sc_2 a short distance from its tip; R_{2+3+4} about twice R_{2+3} ; R_{1+2} long, exceeding R_{2+3+4} ; cell M_1 present, small, nearly one-fourth its petiole; $m-cu$ unusually far basad, about two-thirds its length before the fork of M ; anterior arculus preserved.

Abdomen dark brown, the ovipositor a trifle paler. Ovipositor fleshy, the hypovalvæ very short.

Hab. North-west Thailand.

Holotype, ♀, Dr. Buker's Cabin, near Chiangmai, February 4, 1953 (*Thurman*).

The present fly is readily told from other known species that have cell M_1 of the wings present, such as *Troglophila seticornis* Alexander and *T. szechwanensis* Alexander, by the venation, as the unusually retracted $m-cu$. In the type-slide showing a leg, in addition to the usual setæ, there are scattered broadly flattened scales in the balsam and one of these seems to be attached. The other species of the genus do not have scales on the legs and this particular point requires clarification.

Teucholabis (Teucholabis) thurmani, sp. n.

Head, abdomen, antennæ, halteres and legs black, thorax orange; wings whitish subhyaline, patterned with brown, including cells C and Sc , a broad band at cord, and the darkened apex, the latter two areas

terconnected behind; male hypopygium with the inner dististyle bipartite, the outermost arm a slender simple spine.

Male.—Length about 8 mm.; wing 7.5 mm.

Rostrum and palpi black. Antennæ black throughout; basal gellar segments short-oval, becoming more elongate outwardly. Head black.

Prothorax and mesothorax polished orange, virtually unpatterned, the præscutum with three somewhat deeper orange stripes and each utal lobe with two small similarly coloured areas. Halteres black. Legs with the fore coxæ and trochanters orange, middle coxæ orange, trochanters black, hind coxæ and trochanters black; remainder of legs uniformly black. Wings whitish subhyaline, patterned with brown, including cells *C* and *Sc*, a broad band at the cord expanded behind and interconnected with the broadly darkened apex, cell R_2 uniformly darkened; cells basad of the dark band at cord unpatterned except in the costal region; prearcular field more yellowed. Venation: *Sc* long, r_1 winding about opposite four-fifths R_s , Sc_2 at near mid-length of the latter; R_{2+3+4} subequal to R_2 ; cell 1st M_2 long, slightly widened outwardly, subequal in length to vein M_4 ; *m-cu* about three-fourths its own length beyond the fork of *M*.

Abdomen, including hypopygium, black. Abdominal sternites without concentrations or pockets of setæ or other modifications. Male hypopygium with the apical margin of basistyle produced into two or three major spines or denticles. Dististyles terminal in position; outer style simple, gently curved, the concave or inner face at near mid-length produced into a broad tooth, the outer margin with microscopic denticles; inner style tripartite, the largest or inner arm extended into a slender terminal spine, intermediate arm a shorter cylinder, bearing four very long setæ at apex, the outermost arm a slender simple spine. *Ædeagus* short and massive, with several conspicuous setæ.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, May 4–10, 1952 (*Thurman*). *Paratopotypes*, 2 ♂♂.

I take unusual pleasure in naming this attractive insect for the collector, Dr. Deed C. Thurman, who has added materially to our knowledge of the insects of Thailand. In its coloration and structure of the male hypopygium the fly is quite distinct from all other regional species, being most similar to *Teucholabis* (*Teucholabis*) *rutilans* Alexander, yet tirely distinct.

Gnophomyia (*Gnophomyia*) *anaphora*, sp. n.

General coloration of mesonotum reddish brown, darker behind; tura yellow ventrally, the dorsal part with a broad black longitudinal stripe that is almost continuous; wings subhyaline, the oval stigma reddish brown; *Sc* long; male hypopygium with the outer dististyle simple; phallosome including a central asymmetrical plate that narrows at apex into a blackened knob.

Male.—Length about 5.5–5.2 mm.; wing 5.5–5.8 mm.; antenna about 2.5–2.6 mm.

Female.—Length about 5.2 mm.; wing 5.8 mm.

Rostrum obscure yellow; palpi black. Antennæ (male) relatively long, approximately one-half the length of body, black; flagellar segments long-cylindrical, with relatively short verticils and a shorter dense white pubescence. Head above chestnut-brown; narrowed behind, the anterior vertex subequal in width in both sexes, nearly three times the diameter of the scape.

Pronotum dark brown, the pretergites yellowed. Mesonotum reddish brown, the humeral and lateral borders of the præscutum clear yellow; scutal lobes and scutellum darker brown; suture between mediotergite and pleurotergite yellow. Pleura and pleurotergite yellow above, with a nearly continuous broad, black, longitudinal stripe, the ventral sternopleurite more reddened. Halteres short, brownish black, the base of stem restrictedly yellow. Legs with the coxæ testaceous yellow, the fore pair a trifle darker; trochanters yellow; remainder of legs obscure yellow, the terminal tarsal segments black. Wings subhyaline, the oval stigma medium brown; veins dark brown. Venation: *Sc* long, *Sc*₁ ending opposite to some distance beyond *R*₂; *r-m* varying in position, usually connecting with *Rs* shortly before the fork, in others just beyond; *R*₂₊₃ subequal to or slightly exceeding *R*₂; cell 1st *M*₂ widened outwardly, longer than vein *M*₄; *m-cu* about its own length beyond the fork of *M*; vein 2nd *A* gently sinuous.

Abdominal tergites dark brown, vaguely patterned with lighter brown; sternites yellow; hypopygium obscure yellow to light brown. Male hypopygium with the basistyle relatively short and stout, the outer apical angle slightly produced. Outer dististyle a simple, gently curved glabrous rod, very gradually narrowed to the subacute tip; inner style shorter, dilated and enlarged on basal portion, the outer half narrowed and darkened, the surface with several setæ. Phallosome, in addition to the slender ædeagus, including a central asymmetrical structure that narrows at apex into a blackened knob.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, January 1, 1953 (*Prayoon*). *Allotopotype*, ♀, January 3, 1953. *Paratopotypes*, ♂♀, January 1–3, 1953; *paratypes*, ♂♀, Wat, Doi Sutep, altitude 2,000 feet, January 18, 1953 (*Thurman*).

This fly is generally similar to species such as *Gnophomyia* (*Gnophomyia*) *fraterna* Edwards and *G.* (*G.*) *maculipleura* Edwards, differing in the coloration, especially the more nearly continuous darkened pleural stripe, and in the structure of the male hypopygium. The latter is more as in *fraterna* but the details, as of the phallosome, are quite distinct.

Gnophomyia (*Gnophomyia*) *nebulicincta*, sp. n.

Size relatively small (wing, male, 5 mm. or less); general coloration black, restrictedly patterned with yellow; antennæ relatively long,

exceeding one-third the wing; legs brown; wings subhyaline, extensively clouded with pale brown before and just beyond the cord; male hypopygium with the outer dististyle slender, glabrous, narrowed to the subacute tip; two pairs of gonapophyses, the large outer pair strongly bent.

Male.—Length about 4.2–4.5 mm.; wing 4.7–5 mm.; antenna about 1.8–2 mm.

Rostrum and palpi black. Antennæ with the scape light brown, the remainder black; relatively long, as shown by the measurements; flagellar segments elongate-cylindrical; intermediate segments longer than the verticils; terminal segment only a little shorter than the penultimate. Head dark grey, more whitened in front, the region of the low vertical tubercle with a more blackened line; anterior vertex broad, at least three times the diameter of the scape.

Pronotum yellow, blackened on sides. Mesonotum black, sparsely pruinose, the extreme lateral borders of præscutum obscure yellow. Pleura black, heavily pruinose; dorsopleural region and meron yellow. Halteres black, the knob light yellow. Legs brown, the femora a little darker; tibiæ light brown, the tips, with the tarsi, more blackened. Wings subhyaline, extensively clouded with pale brown just beyond the cord and involving extensive areas more basally, including cells *R* and *M* and bases of *Cu* and 1st *A*; stigma narrow, darker brown; veins dark brown to brownish black. Venation: *Sc* long, *Sc*₁ ending beyond three-fourths the length of *R*₂₊₃₊₄; cell 1st *M*₂ long, subequal to the distal section of vein *M*₃; *m-cu* from about one-third to two-thirds its length beyond the fork of *M*.

Abdomen, including hypopygium, black. Male hypopygium with the outer dististyle slender, glabrous, narrowed to the subacute point; inner dististyle about two-thirds as long, enlarged at base, thence narrowed to a long cylindrical rod with scattered setæ. Phallosome with two sets of apophyses, the lateral pair large and powerful, very strongly bent, the obtuse tips darkened; inner apophyses subtending the somewhat shorter aedeagus, the tips slightly curved.

Hab. North-west Thailand.

Holotype, ♂, Wat, Doi Sutep, altitude 2,000 feet, January 18, 1953 (*Prayoon*). *Paratopotype*, ♂.

The present fly is quite distinct from other regional members of the genus, in its general appearance being more like various Neotropical members of the genus belonging to the *tristissima* group. It is well distinguished by the body coloration, wing-pattern and structure of the male hypopygium.

Erioptera (Teleneura) pennigera, sp. n.

General coloration dark brown to black; thoracic pleura with a blackened dorsal stripe, paler ventrally; male hypopygium with the tergite on either side produced into expanded wing-like blades; outer dististyle slender-stemmed, the head large.

Male.—Length about 3 mm. ; wing 4 mm. ; antenna about 0.7 mm.

Rostrum and palpi black. Antennæ relatively short, black ; pedicel enlarged, much larger than the scape ; basal three flagellar segments short and compact, incompletely fused, succeeding segments becoming more elongate ; verticils very long and conspicuous, the longest exceeding three times the segments. Head dark brown.

Thoracic dorsum dark brown, more variegated with obscure yellow on sides behind ; dorsal pleura chiefly brownish black, the sternopleurite and meron paler. Halteres brownish black, the base of stem yellowed. Legs brown, the colour appearing black from abundant elongate scales. Wings with a weak brownish tinge, the veins and macrotrichia darker. Venation : as in the subgenus, the cord lying before mid-length of wing ; R_{2+3+4} nearly straight ; $m-cu$ at fork of M ; vein *2nd A* only moderately elongate, ending shortly beyond $m-cu$.

Abdomen dark brown, hypopygium a little more brightened. Male hypopygium with a disjoined lobe on either side of tergite, this expanded outwardly into a pale membranous blade, its outer margin with strong spinous setæ to produce a wing-like appearance. Outer dististyle slender-stemmed, at apex dilated into a large blackened head, densely set with closely appressed spinous setæ. Inner dististyle smaller, entirely pale, the outer third narrowed. Massive sclerotized plates on either side of the genital chamber appear to represent gonapophyses.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, January 2, 1953 (*Prayoon*).

Most similar to *Erioptera (Teleneura) melanolitha* Alexander, of the Philippines, differing especially in the structure of the male hypopygium.

Erioptera (Erioptera) tiro, sp. n.

General coloration of mesonotum brownish grey, the posterior pleurites yellowed ; halteres darkened ; wings 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.

Female.—Length about 4.5 mm. ; wing 5.2 mm.

Rostrum and palpi black. Antennæ broken. Head dark brownish grey.

Thoracic notum chiefly brown, vaguely patterned with darker brown, the surface strongly pruinose. Pleura darkened above, the metapleura light yellow. Halteres darkened. Legs with the coxæ brownish yellow ; trochanters yellow ; remainder of legs brownish yellow, the vestiture blackened ; setæ of tibiæ longer and stouter. Wings with a brownish tinge, more saturated in the cells beyond cord but not as conspicuously so as in *fuscoradialis* ; very small darker spots at origin of R_s , Sc_2 , cord and outer end of cell *1st M*₂ ; costal and outer radial veins narrowly seamed with yellow. Macrotrichia of veins very long. Venation Sc_1 ending nearly opposite the outer end of cell *1st M*₂, Sc_2 far from its tip,

at near mid-length of R_s ; R_{2+3+4} short and subperpendicular, about one-third longer than R_{2+3} ; cell 1st M_2 closed; $m-cu$ nearly its own length before form of M ; vein 2nd A elongate, strongly sinuous.

Abdominal tergites brownish black, the sternites paler, especially the basal ones. Ovipositor with both the cerci and hypovalvæ unusually long; cerci slender, nearly straight; hypovalvæ still longer, stout, the tips of all valves acute.

Hab. North-west Thailand.

Holotype, ♀, Wat, Doi Sutep, altitude 2,000 feet, January 18, 1953 (*Prayoon*).

The only similar allied species is *Erioptera (Erioptera) fuscocardialis* Alexander, of Malaya, which differs especially in the details of venation and coloration. The structure of the ovipositor of the present fly is noteworthy and may indicate a distinctness from typical *Erioptera* not hitherto suspected.

Molophilus (Molophilus) algol, sp. n.

Belongs to the *gracilis* group and subgroup; mesonotum obscure yellow, patterned with brown; pleura with a broad, black, dorsal stripe, bordered beneath by clearer yellow; halteres yellow; femora brownish yellow, the tips broadly dark brown; wings yellowed, weakly patterned with darker; male hypopygium with the basistyle terminating in three lobes, two of which are long and slender; two subequal dististyles, one gradually narrowed into an acute spine, the other truncate at tip, with several small teeth.

Male.—Length about 3.5 mm.; wing 4.3 mm.

Rostrum and palpi black. Antennæ with the scape yellow, remainder broken; before loss of antennæ, the note was made that these were of moderate length only. Head grey.

Pronotum narrowly pale medially, the sides broadly blackened; pretergites restrictedly pale yellow. Mesonotal præscutum chiefly obscure yellow or brownish yellow, representing the usual stripes, the lateral parts and interspaces more infuscated; posterior sclerites of notum brownish yellow, the sides of the scutal lobes more infuscated; scutellum more testaceous. Pleura with a broad and conspicuous black longitudinal stripe occupying the dorsal region, extending to the pleurotergite, the ventral pleurites more yellowed above, weakly more darkened on the lower part. Halteres yellow. Legs with all coxæ and trochanters yellow; femora brownish yellow, the tips broadly dark brown; tibiæ and tarsi dark brown to brownish black. Wings with the ground-colour yellowed, clouded with darker to produce a weak pattern; macrotrichia and veins dark, especially at the cord. Venation R_2 and $r-m$ in virtual transverse alignment; petiole of cell M_3 approximately twice $m-cu$; vein 2nd A ending just before level of $m-cu$.

Abdomen dark brown; hypopygium a trifle more brightened. Male hypopygium with the basistyle terminating in three lobes, the more ventral one long and slender, almost spine-like; mesal lobe small, fleshy,

with numerous setæ; dorsal lobe elongate, extended caudad almost to the level of the tips of the dististyles, straight, at apex narrowed into a glabrous spine. Dististyles of nearly equal length, one gradually narrowed into an acute spine, the other stouter, its apex truncate, provided with several small teeth. Ædeagus of moderate length.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, January 2, 1953 (*Prayoon*).

The most similar species in south-eastern Asia include a number of forms with more elongate antennæ in the male sex, including among others *Molophilus (Molophilus) injustus* Alexander and *M. (M.) lancifer* Alexander, all differing among themselves in the structure of the male hypopygia.

Molophilus (Molophilus) lupus, sp. n.

Belongs to the *gracilis* group and subgroup; mesonotal præscutum brownish grey, the posterior sclerites, with the pleura, brownish black; halteres infuscated; femora light brown, the tips darker; wings infuscated; male hypopygium with ventral face of basistyle at near mid-length produced into a stout lobe, ventral apical lobe long and slender, feebly clavate; two dististyles, the outer a needle-like spine, the inner style subequal in length but stouter.

Male.—Length about 3.5 mm.; wing 4.5 mm.; antenna about 1.5 mm.

Rostrum and palpi black. Antennæ light brown or yellowish brown basally, the outer segments more darkened; verticils of more proximal flagellar segments very long, unilaterally distributed, the longest approximately twice the segments; segments with additional very long, erect, pale pubescence. Head grey.

Pronotum whitened, dark on sides; pretergites white. Mesonotal præscutum brownish grey, narrowly yellowed on sides; posterior sclerites of notum and pleura abruptly brownish black. Halteres infuscated. Legs with the coxæ weakly infuscated, the remaining coxæ and trochanters more yellowed; femora and tibiæ light brown, the tips darker; tarsi more uniformly brownish black. Wings infuscated, more yellowed in the prearcular and costal fields; stigmal region more strongly darkened; veins pale brown, macrotrichia dark brown. Venation: R_2 and $r-m$ in approximate transverse alignment; petiole of cell M_3 nearly three times $m-cu$; vein 2nd A moderately long, ending about opposite $m-cu$.

Abdomen, including hypopygium, brown, the pleural region still darker; hypopygium reddish brown. Male hypopygium with the ventral face of basistyle at near mid-length produced into a stout lobe; dorsal apical lobe of basistyle short, the ventral one long and slender, more narrowed on proximal third to appear clavate. Two dististyles, the outer a long needle-like spine, its base dilated, the tip acute; inner

style subequal in length but much stouter, flattened, with a few scattered denticles on lower margin before the acute apex. *Ædeagus* very long and slender.

Hab. North-west Thailand.

Holotype, ♂, Miss Lemmon's Cabin, Doi Chom Cheng, altitude 3,000 feet, January 2, 1953 (*Prayoon*). *Paratypes*, 2 ♂♂, Wat, Doi Sutep, altitude 2,000 feet, January 18, 1953 (*Prayoon*).

There are various regional members of the group that are generally similar to the present fly, all differing among themselves in the structure of the male hypopygia. Such species include *Molophilus* (*Molophilus*) *inconspicuous* Brunetti, *M. (M.) khasicus* Alexander, and *M. (M.) malayensis* Alexander.