

IV.—NEW OR LITTLE-KNOWN TIPULIDAE (DIPTERA).
C. ORIENTAL—AUSTRALASIAN SPECIES.

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IN this, the one-hundredth part under this general title, I wish to express my deep thanks and appreciation to the officers of Messrs. Taylor and Francis for the privilege of being able to publish this extensive series of papers on the Tipulidae in the *Annals and Magazine of Natural History*. The initial part appeared in Series 9, volume 5, in January 1920, and publication has continued without interruption during the succeeding thirty-five years.

In the present instalment I am considering species from India and Thailand, with a few scattered further species that are indicated in the text.

Tipula (Schummelia) dharmia, sp. n.

Size large (wing, male, 11.5 mm.) ; mesonotum yellow, patterned with brown, including a darkened area on the scutellum ; pleura and pleurotergite yellow ; femora brown, the tips broadly black ; wings infuscated, conspicuously patterned with darker brown and whitened areas ; cell M_1 very deep ; male hypopygium with the dorsal crest of the inner dististyle low, densely setiferous ; a spatulate appendage on ninth sternite.

Male.—Length about 13 mm. ; wing 11.5 mm. ; antenna about 3.1 mm.

Frontal prolongation of head light yellow, conspicuously dark brown on sides ; nasus elongate, darkened outwardly ; palpi black. Antennæ with scape and pedicel light yellow, the proximal flagellar segments light brown, with darker basal enlargements, outer segments black ; verticils, especially of the outer segments, conspicuous. Head yellow on front, more obscure behind, patterned with brown.

Pronotum infuscated above, yellow on sides. Mesonotal præscutum with the ground yellow, with three brown stripes, the central one broad, all stripes confluent behind ; scutal lobes infuscated ; scutellum brownish yellow, with a dark brown central area ; mediotergite and dorsal part of pleurotergite weakly infuscated, the former vaguely more yellowed on central part. Pleura and ventral pleurotergite yellow. Halteres with stem weakly infuscated, its base yellow, knob chiefly orange-yellow. Legs with all coxæ and trochanters yellow ; femora brown, the tips broadly blackened, tibiæ and tarsi passing into black ; claws with a weak tooth. Wings with the ground infuscated, conspicuously variegated with darker brown and whitened areas ; prearcular and costal regions more yellowed ; stigma relatively small, dark brown ; darker

clouds beyond arculus, beyond mid-length and at outer end of cell M , and in distal ends of outer radial cells, the whitened areas occupying most of the cells beyond cord, near outer end of cell M , before stigma, and as spots at and near ends of both anal veins; veins dark brown, somewhat paler in the brightened fields. Macrotrichia of veins relatively short and inconspicuous. Venation: R_s relatively long, about three-fourths R_{2+3} ; cell M_1 very deep, its petiole only about one-fourth m ; basal section of M_{3+4} about one-half that of M_{1+2} .

Abdominal tergites medium brown, variegated with darker sublateral spots, the lateral margins of the more proximal segments more yellowed; subterminal segments more uniformly darkened; basal sternites and hypopygium yellow. Male hypopygium with the tergite transverse, the posterior border feebly emarginate, the margin narrowly blackened; each lobe produced beneath into a blackened tooth and flange. Outer dististyle long and slender, gradually narrowed to the obtuse tip, the length about five times the diameter at base. Inner dististyle low, the blackened beak produced, lower beak obtuse; dorsal crest low, becoming higher behind, terminating precipitously at posterior end of style, provided with abundant long yellow setæ. Ninth sternite with a spatulate appendage that is evidently dilated outwardly, appearing hood-shaped or scoop-like, the open end of the hood directed outwardly, the surface with abundant microscopic setulæ. Eighth sternite narrow, unarmed.

Hab. Thailand (Chiengmai Province).

Holotype, ♂, Doi Sutep, November 1953 (*Manop Ruttanapradith*).

The most similar regional species are *Tipula* (*Schummelia*) *hampsoni* Edwards and *T. (S.) sessilis* Edwards, which differ in all details of coloration and in the structure of the male hypopygium, including the greatly dilated appendage of the ninth sternite. The outer wing-cells of the present fly are not as deep as in *hampsoni*.

Tipula (*Schummelia*) *hinayana*, sp. n.

Size small (wing, male, 8 mm.); mesonotum chiefly black, anterior third of præscutum yellow; pleura yellow, propleura, anterior half of anepisternum, and metapleura black; halteres blackened; wings weakly tinged with brown, cell Sc and the stigma dark brown; cell 1st M_2 small; abdomen chiefly brownish black, the basal segments variegated with yellow; male hypopygium with the ninth tergite produced medially into two setiferous lobes; outer dististyle unusually short and broad; inner dististyle with the beak short and stout.

Male.—Length about 8 mm.; wing 8 mm.

Frontal prolongation of head obscure yellow above, dark brown on sides; nasus small; palpi with proximal two segments black, third segment paler, terminal segment broken. Antennæ broken. Head dark brown.

Pronotum testaceous yellow above, the sides black. Mesonotal præscutum brownish black, the anterior third abruptly yellow, the colour continued along the sides to the scutum; posterior sclerites of

notum black, the postnotum more opaque. Pleura yellow, the propleura and anterior half of anepisternum black; posterior sclerites, including the pleurotergite and metapleura black; a pale brown area on sternopleurite. Halteres blackened, base of stem obscure yellow. Legs with the fore and middle coxæ yellow, posterior coxæ dark brown; trochanters yellow; femora brownish yellow, the base clearer yellow, tip narrowly black; tibiæ and basitarsi brownish yellow, the tips narrowly darkened, remainder of tarsi black. Wings with a weak brownish tinge, the border still darker brown; cell *C* brownish yellow, *Sc* and stigma darker brown; broad brown seams on *Cu* and *m-cu*, narrower on anterior cord and over certain of the veins; restricted obliterative areas before and beyond stigma and across cell 1st M_2 ; veins dark brown, restrictedly yellowed before stigma. Venation: $\bar{R}s$ short, a little longer than basal section of R_{4+5} ; cell M_1 very deep, its petiole about one-half longer than *m*; cell 1st M_2 small; *m-cu* at near mid-length of M_{3+4} .

Basal abdominal tergite brownish yellow, succeeding tergites restrictedly yellow, very heavily patterned with brownish black, the intermediate and outer segments uniformly darkened, basal sternites yellow; hypopygium variegated with yellow and black. Male hypopygium distinctive; ninth tergite transverse, the median region produced into a pale double lobe, each half more expanded outwardly, slightly divergent, provided with abundant short setæ; lateral tergal lobes low and obtuse, with short setulæ and sparse setæ. Outer dististyle very short and broad, its length only about twice the width at mid-length; inner style with its body almost oval, the beak short and stout, blackened, the lower beak still more obtuse. Aedeagus relatively long; apophyses paler and narrowed at outer ends.

Hab. Thailand (Chiengmai Province).

Holotype, ♂, Huey Kao, June 16th, 1953 (*Manop Ruttanapradith*).

This unusually small member of the subgenus is quite distinct in the coloration of the body and in the structure of the male hypopygium. It most resembles species such as *Tipula* (*Schummelia*) *bicolorata* Alexander and *T. (S.) salakensis* Alexander, but is quite distinct in the characters indicated.

Tipula (*Schummelia*) *turea*, sp. n.

Size medium (wing, male, 9.3 mm.); mesonotal præscutum obscure yellow, vaguely patterned with brown; posterior sclerites of notum, especially the parascutella and postnotum, darker; apex of knob of haltere whitened; femora obscure yellow, the fore and middle pairs with a narrow brown subterminal ring, posterior femora with this broader, blackened, apical in position, tibiæ and tarsi brownish black; wings weakly infuscated, cells *C* and *Sc* dark brown; cell 1st M_2 small, its inner end pointed; *m-cu* shortly before fork of M ; male hypopygium with the beak of the inner dististyle long and slender, body of style with six large circular pale areas.

Male.—Length about 9 mm.; wing 9.3 mm.

Frontal prolongation of head light brown; first segment of palpus brownish black, second and third obscure yellow, the outer ends more darkened, terminal segment infuscated. Antennæ broken. Head brown.

Pronotum brownish yellow. Mesonotal præscutum chiefly obscure yellow, with vague pale brown stripes, the posterior sclerites of notum darker; scutal lobes patterned with dark brown; parascutella and posterior border of scutellum black; mediotergite chiefly brownish grey, the posterior border and dorsal pleurotergite strongly darkened. Pleura testaceous yellow, the dorsal part a little more darkened. Halteres with stem brownish yellow, knob dark brown with whitened tip. Legs with all coxæ and trochanters testaceous yellow; femora obscure yellow, the fore and middle pair with a narrow brown subterminal ring, the posterior pair with the ring broader and darker, terminal in position or virtually so; tibiæ and tarsi brownish black to black, the extreme bases of the former pale; claws simple. Wings weakly infuscated, cell *Sc* and the stigma dark brown; narrow paler brown seams on anterior cord, *Cu* and *m-cu*; conspicuous pale areas before and beyond stigma and less evidently across the fork of *M*; veins brown; paler in the obliterative areas. Venation: *Rs* short, gently arcuated, more than one-half longer than the basal section of *R*₄₊₅; cell *M*₁ deep, about four times its petiole; cell 1st *M*₂ small, its inner end pointed; *m-cu* immediately before fork of *M*.

Abdominal tergites yellow, the posterior and lateral borders conspicuously brownish black, the former narrower on the outer segments; sternites uniformly clear yellow; hypopygium yellow. Male hypopygium damaged, mounted on a microscope slide. Outer dististyle short and broad, about four times as long as wide, the tip very obtuse; inner style with the body subquadrate, beak long and slender, lower beak vertical to precipitous; body of style with relatively few but long setæ; near posterior end with six large circular pale areas, very much larger than the setigerous punctures. Gonapophyses appearing as large pale blades that exceed in length the slender ædeagus, the tip of the latter short and slightly decurved.

Hab. Thailand (Chiengmai Province).

Holotype, ♂, Doi Sutep, November 1953 (*Manop Ruttanapradith*).

The most similar species include *Tipula* (*Schummelia*) *klossi* Edwards and *T. (S.) vocator*, sp. n., which differ primarily in the structure of the male hypopygium.

Tipula (*Schummelia*) *vocator*, sp. n.

Thoracic dorsum chiefly dark brown, præscutum paler, lined with narrow brown stripes, pleura and pleuroptergite brownish black; apex of knob of halteres yellow; femora brownish yellow, the tip, with the tibiæ and tarsi, black; wings subhyaline, stigma and cell *Sc* dark brown, veins more narrowly seamed with brown; cell *R*₂ at margin very extensive cell 1st *M*₂ small, its inner end pointed, *m-cu* just beyond the fork of *M*; abdominal tergites obscure yellow, the posterior and lateral borders of the segments brownish black; male hypopygium with the tergite produced

medially into a triangular blade that narrows to an acute spine; inner dististyle oval, the disk with long retrorse setæ; apex of ædeagus recurved.

Male.—Length about 9 mm.; wing 10 mm.

Frontal prolongation of head black, narrowly paler on dorsal surface; palpi dark brown. Antennæ with scape and pedicel brownish yellow, flagellum brown, the first segment somewhat paler, the succeeding two segments with the basal part a trifle darker, outer segments broken. Head dark brown, vaguely patterned with brownish yellow on anterior vertex.

Thoracic dorsum chiefly dark brown, the præscutum paler, with narrow brown stripes. Pleura and pleurotergite brownish black, scarcely patterned. Halteres with stem and apex of knob obscure yellow, the remainder of knob dark brown. Legs with the coxæ dark brown; trochanters yellow; femora brownish yellow, the tips narrowly blackened; tibiæ and tarsi black. Wings subhyaline, cell *Sc* and the stigma dark brown, prearcular field and cell *C* more yellowed; a very narrow brown seam over the cord; wing-tip, especially in cell R_2 , less evidently darkened; still less distinct brown seams along vein *Cu*, outer longitudinal veins, and tip of vein *2nd A*; veins dark brown. Venation: *Rs* very short, straight, subequal to basal section of R_{4+5} ; vein R_{1+2} relatively short, deflected cephalad, vein R_3 swung caudad, paralleling vein R_{4+5} , cell R_2 at margin thus very extensive; cell M_1 deep, approximately three times its petiole; cell *1st M*₂ small, its inner end pointed, *m-cu* just beyond the fork of *M*; cell M_4 deep, widest at base, as in the subgenus.

Abdominal tergites obscure yellow, conspicuously patterned with brownish black, including the lateral and posterior borders, the outer segments more uniformly darkened; basal sternites clear yellow. Male hypopygium with the tergite produced medially into a triangular blade that terminates in an acute point, the upper surface provided with very delicate setulæ. Outer dististyle short, less than four times as long as broad, the tip obtuse. Inner dististyle oval in outline, the beak longer than the lower beak which is very obtuse; disk of style with long retrorse setæ. Phallosome with the ædeagus subequal in length to the narrow blade-like apophyses, its tip recurved.

Hab. Thailand (Chiangmai Province).

Holotype, ♂, Doi Sutep, November 1953 (*Manop Ruttanapradith*).

Tipula (*Schummelia*) *vocator* is quite distinct from other regional members of the subgenus in coloration, venation, and details of structure of the male hypopygium. Among the described species, it is closest to *T. (S.) klossi* Edwards.

Lechria fuscomarginata, sp. n.

General coloration of thorax dull orange, pleura more yellowed; head clear grey; wings subhyaline, conspicuously patterned with pale brown, including broad seams over the cord and outer end of cell *1st M*₂; wing-

tip and margin similarly clouded; *Rs* shorter than basal section of M_{1+2} ; a short basal section of vein R_5 ; basal section of M_{1+2} very long.

Female.—Length about 7 mm.; wing 8.5 mm.

Rostrum buffy; palpi brownish black. Antennæ with the scape orange, weakly darkened at outer end, pedicel dark brown; flagellum broken. Head clear grey; anterior vertex about two-thirds as wide as the diameter of scape; setæ of vertex abundant, black, proclinate.

Pronotum brownish yellow. Mesonotal præscutum dull orange, the pseudosutural foveæ concolorous; scutal lobes dark brown, the median area and the scutellum brownish yellow; mediotergite reddish brown basally, the posterior and lateral parts darker. Pleurotergite and pleura orange-yellow. Halteres with stem yellow, knob dark brown. Legs with the coxæ reddened; trochanters yellow; remainder of legs brown, the outer tarsal segments darker. Wings subhyaline, conspicuously patterned with pale brown, including broad seams over cord and outer end of cell 1st M_2 , together with the broad wing-tip, most extensive in the radial field, extended backward to beyond *Cu*; stigma very narrow, darker brown; veins brownish black. Venation: *Rs* shorter than the basal section of M_{1+2} ; basal section of R_3 short; a short basal section of vein R_5 ; basal section of M_{1+2} very long, exceeding three times the second section; *m-cu* about its own length beyond fork of *M*; cell 2nd *A* moderately broad.

Abdomen with proximal tergites brownish yellow, the sixth to eighth tergites dark brown, sternites more uniformly buffy yellow. Ovipositor with the cerci fringed with sparse but conspicuous setæ.

Hab. South India (Madras).

Holotype, ♀, Kodaikanal, Pulney (Palni) Hills, altitude 6,500 feet. May 31st, 1953 (*P. Susai Nathan*).

Lechria fuscomarginata is entirely different from all previously described members of the genus in its distinctly patterned wings. It differs further from all other Indian species in the coloration and in the details of venation. Among the generally similar regional forms are *Lechria bengalensis* Brunetti and *L. interstitialis* Alexander.

Limonia (Rhipidia) kama, sp. n.

General coloration of mesonotal præscutum and scutum reddish brown, the posterior sclerites darker; pleura brown with two narrow brownish-black longitudinal stripes; antennæ of male with six bipectinate segments; wings strongly tinged with brown, virtually unpatterned *Sc* relatively short, Sc_1 ending about opposite one-third *Rs*, Sc_2 near its tip; *m-cu* before fork of *M*, in cases to nearly its own length; male hypopygium with four relatively short rostral spines.

Male.—Length about 5.5–6 mm.; wing 6–6.5 mm.; antenna about 2–2.2 mm.

Rostrum and palpi black, the former about one-third as long as remainder of head. Antennæ black, the apical pedicels of the flagellar segments paler; first flagellar segment and those beyond the seventh

simple to barely produced, segments two to seven, inclusive, with two moderately long branches, the longest slightly less than three times the segment. Head dark grey; anterior vertex narrow, about one-half wider than the diameter of the scape.

Pronotum light brown. Mesonotal præscutum reddish brown, not or scarcely patterned; posterior sclerites of notum dark brown to brownish black, pleurotergite paler. Pleura brown, with two narrow brownish-black longitudinal stripes, the ventral sternopleurite and meron obscure yellow. Halteres with the stem pale, knob infuscated. Legs with the coxæ yellow testaceous, narrowly darkened basally; trochanters yellow; femora obscure yellow to brownish yellow, slightly darker outwardly, the extreme tips pale; tibiæ and tarsi brown, the latter passing into black. Wings strongly tinged with brown, almost unpatterned, in cases with tiny whitish dots scattered over the disk, not or scarcely apparent; veins brown. Costal fringe short. Venation: *Sc* relatively short, *Sc*₁ ending about opposite one-third *Rs*, *Sc*₂ near its tip; *m-cu* shortly before fork of *M*, in the extreme cases nearly equal to its own length.

Abdominal tergites brownish black, the sternites paler, with narrow more silvery posterior borders; subterminal segments blackened to form a distinct ring; hypopygium brownish yellow. Male hypopygium with the tergite transverse, its posterior border very gently emarginate, the lobes vaguely indicated. Basistyle short, ventromesal lobe large, with a small accessory lobule near its base. Dorsal dististyle a strongly curved sickle, the tip acute. Ventral dististyle suboval, more extensive than the basistyle; rostral prolongation narrow, with four (sometimes three) relatively short spines at near mid-length, the longest not exceeding the length of the prolongation beyond its insertion. Gonapophysis with mesal apical lobe stout, straight, the tip slightly curved.

Hab. India (Assam).

Holotype, ♂, Cherrapunji, Khasi Hills, altitude 4,000 feet, 1954 (*S. Sircar*). *Paratopotypes*, 5 ♂♂.

In its virtually unpatterned wings, the present fly is most similar to *Limonia* (*Rhipidia*) *impictipennis* Alexander, of north-eastern Burma, differing conspicuously in the structure of the antennæ and the male hypopygium, particularly the rostral armature.

Limonia (*Thrypticomylia*) *marksae*, sp. n.

Six relatively large (wing, 7 mm. or more); general coloration of thorax light brown, pleura more yellowed; basitarsi chiefly brownish black, with about the outer third and remainder of tarsi snowy white; wings with the stigmal region very large; *Rs* unusually short, only about one-third longer than the basal section of *R*₄₊₅; distal section of *R*₁₊₂ subequal to *Rs*; cell *M*₂ open by atrophy of *m*; male hypopygium with the lateral angles of tergites conspicuously produced into lobes that bear long setæ; rostral spines two, small.

Males.—Length about 6–6.2 mm.; wing 7–7.5 mm.

Female.—Length about 7 mm.; wing 7.5 mm.

Described from alcoholic material. Rostrum and palpi black. Antennæ brown; flagellar segments oval to long-oval, with conspicuous pedicels; verticils shorter than the segments. Head dark brown.

Pronotum and mesonotum light brown, the central area of the præscutum and the scutal lobes darker brown, pleura more yellowed. Halteres elongate, stem pale, knob infuscated. Legs with the coxæ and trochanters yellow, the middle and hind coxæ with conspicuous setæ; femora and tibiæ brown, the former a trifle paler basally; basitarsi chiefly brownish black, with about the outer third on posterior legs white, remainder of tarsi snowy white. Wings with a weak brownish tinge, the enlarged stigmal region darker brown, costal border less evidently darkened; veins brown. Venation: Sc_1 ending just before origin of Rs , Sc_2 some distance back, Sc_1 alone exceeding $m-cu$; Rs unusually short, only about one-third longer than the basal section of R_{4+5} ; R_{2+3} subequal to the latter; free tip of Sc_2 pale but conspicuous; distal section of R_{1+2} elongate, subequal to or slightly longer than Rs ; cell M_2 open by atrophy of m ; $m-cu$ only a short distance beyond fork of M , up to one-half its length.

Abdomen light brown, the posterior borders narrowly darker brown. Male hypopygium relatively large; ninth tergite transverse, the outer lateral lobes conspicuously produced, provided with several strong setæ. Basistyle with ventromesal lobe stout, obtuse. Dorsal dististyle slender. Ventral dististyle relatively large and fleshy, sloping downward to the stout prolongation, the lower margin of the latter with a row of strong setæ; rostral spines two, at base of prolongation, relatively short, placed close together near summit of a low tubercle. Gonapophysis with mesal apical lobe flattened, its tip acute.

Hab. North Queensland.

Holotype, alcoholic ♂, Low Isles, Great Barrier Reef, near Port Douglas, August 14th, 1954 (*E. N. Marks*). *Allotopotype*, ♀. *Paratopotype*, ♂. Dancing on webs of a spider, *Gasteracantha*, at edge of mangroves.

I am pleased to name this exceptionally interesting crane-fly for the collector, Dr. Elizabeth N. Marks, of the University of Queensland, member of the Expedition to the Low Isles by the Great Barrier Reef Committee. The fly is very distinct in the venation, as the short Rs and open cell M_2 , and in the structure of the male hypopygium, especially the tergite. Among the regional species it most suggests *Limonia* (*Thrypticomylia*) *microstigma* (Alexander) and *L. (T.) zimmermaniana* (Alexander). The association with spiders and their webs has been recorded for various species of this subgenus, and also for *Euglochina*, in the Ethiopian and Oriental Regions, but had not before been noted in any of the rather numerous Australasian forms. The types of the present species are to be preserved in the Queensland Museum, together with the other materials secured by the members of the expedition.

Paradelphomyia (Oxyrhiza) manopi, sp. n.

Size small (wing under 5 mm.); mesonotum orange or fulvous, vaguely patterned with darker; antennæ short, with a whitened fusion-segment

that involves about five segments; legs blackened, femoral bases yellowed, tibiae black with a narrow white ring at base; wings brownish yellow, with a restricted but clearly-defined brown pattern; R_2 some distance before fork, subequal to R_{3+4} ; cells of wings without macrotrichia; male hypopygium with the dististyles slightly subterminal in position, outer style tridentate at apex; spines of the ventral fork stout, straight.

Male.—Length about 3.5–4 mm.; wing 4–4.5 mm.; antenna about 0.8 mm.

Female.—Length about 5 mm.; wing 4.8 mm.

Rostrum and palpi black. Antennæ short, apparently only 12-segmented, the fusion-segment apparently involving five flagellar segments; scape and pedicel light orange, fusion-segment almost white, remainder of organ dark brown; flagellar segments elongate, with still longer verticils; fusion-segment short and compact. Head brownish grey.

Pronotum and mesonotal præscutum chiefly orange or fulvous, vaguely patterned with darker; posterior sclerites of notum slightly more darkened. Pleura brown with a narrow but conspicuous black longitudinal stripe extending from the cervical region to beyond the wing-root; metapleural region blackened. Halteres short, stem pale, knob weakly darkened. Legs with the coxæ and trochanters blackened, the fore coxæ a little paler; fore femora with about the outer half blackened, the base obscure yellow; remaining femora chiefly obscure yellow, the tips darker; tibiae black, with a narrow white ring at base; tarsi dark brown. Wings a little broader in male than in female, brownish yellow, the prearcular and costal regions brighter yellow; a weak brown suffusion in curbital and anal fields and along vein R_5 to margin; a restricted but distinct and unusually clear-cut dark brown pattern, including spots at h , origin of R_s , Sc_1 , Sc_2 , stigma, and ends of veins R_3 and R_4 ; paler brown spots beyond arculus, on veins R and Cu , origin of R_s , at cord and outer end of cell 1st M_2 , form of M_{1+2} , and as marginal spots at ends of longitudinal veins, the largest at 2nd A ; veins yellow, darker in the patterned areas. Costal fringe relatively short; no macrotrichia in wing-cells; in male, wing broadest just before termination of vein 2nd A . Venation: R_2 some distance before fork, subequal to or shorter than R_{3+4} ; cell R_3 wide at margin; cell M_1 about equal to its petiole; $m-cu$ at or beyond mid-length of M_{3+4} ; vein 2nd A bent at a right-angle into the margin, more or less spurred at point of angulation.

Abdomen yellowish brown, variegated with darker, the proximal ends of the basistyles paler. Male hypopygium with the dististyles slightly subterminal, the apex of basistyle obtuse. Outer dististyle widened outwardly, with two outer apical teeth and a longer inner terminal one, separated by a U-shaped emargination; inner style very stout, especially basally. Spines of the ventral fork straight, unusually stout, narrowed very gradually to the acute tips, much longer than the aedeagus.

Hab. Thailand (Chiengmai Province).

Holotype, ♂, Doi Sutep, November 1953 (*Manop Ruttanapradith*).

Allotopotype, ♀, pinned with type. *Paratopotypes*, several ♂♀; *paratypes*, ♂♀, Payao-Chiengmai Road, at fountain, March 22nd, 1953 (*Thurman-Manop*).

I am pleased to name this fly for Mr. Manop Ruttanapradith, to whom we are indebted for several interesting Tipulidæ from the vicinity of Chiengmai. The species is entirely distinct from other regional members of the genus having patterned wings, including among others, *Paradelphomyia (Oxyrhiza) bhava*, sp. n., *P. (O.) mitra* Alexander, *P. (O.) nubifera* Alexander, *P. (O.) prayooni* Alexander, and *P. (O.) subnebulosa* Alexander. It differs from these in the structure of the antennæ, pattern of the legs and wings, lack of macrotrichia in the wing-cells, and in the details of structure of the male hypopygium.

Paradelphomyia (Oxyrhiza) bhava, sp. n.

Size small (wing, male, 4 mm.); mesonotum chestnut-brown, pleura darker brown with a vague roare silvery stripe; legs obscure yellow; wings cream-coloured, with numerous pale brown clouds, including a costal series of about five such darkenings; R_2 at or close to fork of R_{2+3+4} ; base of the small cell 1st M_2 not narrowed.

Female.—Length about 3.5 mm.; wing 4 mm.

Rostrum and palpi black. Antennæ with scape brown, pedicel brownish black, first flagellar segment light yellow, succeeding segments brownish black; basal flagellar segments short and crowded, the outer ones more elongate. Head brownish grey; anterior vertex broad.

Pronotum and mesonotum chestnut-brown, the posterior sclerites more yellowed. Pleura darkened dorsally and on ventral sternopleurite, patterned with paler, including a vague ventral more silvery stripe extending from the fore coxæ to base of abdomen, passing beneath the halteres and including also the meron. Halteres weakly darkened, the base of stem narrowly pale. Legs with the coxæ and trochanters yellow; remainder of legs obscure yellow, the outer tarsal segments a little darker. Wings with the ground colour cream-coloured, with numerous pale brown clouds, a little less extensive than the ground; about five costal darkenings, the second at origin of R_s ; other clouds over cord, outer end of cell 1st M_2 , fork of M_{1+2} , and a marginal series at ends of veins, the largest on the anals; a further clouding on basal half of cell 2nd A ; veins pale, slightly darker in the clouded areas. Macrotrichia of cells sparse, a dozen or fewer in each of cells R_4 and R_5 , and even more sparse in cell M_1 . Venation: Sc_1 ending nearly opposite fork of R_s ; R_2 at or close to fork of R_{2+3+4} ; base of the small cell 1st M_2 not conspicuously narrowed; cell M_1 shorter than its petiole; *m-cu* shortly before mid-length of cell 1st M_2 .

Abdominal tergites dark brown, the outer sternites paler, obscure yellowish brown.

Hab. India (Assam).

Holotype, ♀, Cherrapunji, Khasi Hills, altitude 4,000 feet, 1954 (*S. Sircar*). *Paratopotypes*, 2 ♀♀.

Paradelphomyia (Oxyrhiza) bhava is distinct from the other Indian members of the genus in the pattern of the body and wings, and in the details of venation. The most similar species known to me is *P. (O.) perambrosa* Alexander, of Malaya, which differs in the arrangement and extent of the darkened wing-markings.

Limnophila asura, sp. n.

Size small (wing, 6 mm. or less); general colouration of thorax brownish grey, only vaguely patterned with darker; femora yellow, with a narrow pale brown subterminal ring, tibiae with tips narrowly brownish black; wings pale yellow, with an abundant light brown pattern that is in part ocelliform; *Sc* relatively short; cell M_1 subequal to its petiole; male hypopygium with the outer dististyle glabrous, its apex bidentate; gonapophysis appearing as an elongate paddle-like blade.

Male.—Length about 4.5–5 mm.; wing 5–6 mm.; antenna about 0.9–1.0 mm.

Rostrum and palpi black. Antennæ light brown, the proximal flagellar segments paler; flagellar segments short-oval, the outer ones a little more elongate. Head brownish grey; anterior vertex broad.

Thorax dark brownish grey, the præscutum only vaguely patterned with darker; pseudosutural foveæ and tuberculate pits black, conspicuous; pleura somewhat clearer grey. Halteres with stem pale, knob weakly infuscated. Legs with all coxæ and trochanters obscure yellow; femora yellow, with a narrow pale brown nearly terminal ring; tibiae yellow, the tips narrowly brownish black; basitarsi obscure yellow, the tips darker, remainder of tarsi passing into black. Wings pale yellow, the prearcular and costal regions somewhat clearer; an abundant light brown pattern that is in part ocelliform, including annuli at origin of *Rs*, cord, above fork of M_{1+2} , and less evidently in the postarcular and central medial fields; dark costal spots small, much less extensive than the interspaces; dark marginal spots at ends of all longitudinal veins; in addition to the larger areas there are a few small dots in certain cells; veins yellow, darker in the patterned areas. Costal fringe short. Venation: *Sc* relatively short, Sc_1 ending before fork of *Rs*, Sc_2 near its tip; R_{2+3+4} short, subequal to the basal section of R_5 ; cell M_1 subequal to or longer than its petiole; *m-cu* at or before mid-length of cell 1st M_2 .

Abdomen dark brown, the hypopygium more brownish yellow. Male hypopygium with the median region of the posterior border slightly produced. Basistyle stout. Outer dististyle glabrous, gently curved, the apex shallowly bidentate, the points subequal; inner style with base dilated, the outer half narrowed and blackened, the tip obtuse. Gonapophysis appearing as an elongate flattened paddle-like blade. Ædeagus about one-half longer than the apophysis, its apex slightly narrowed and curved.

Hab. India (Assam).

Holotype, ♂, Cherrapunji, Khasi Hills, altitude 4,000 feet, 1954 (*S. Sircar*). *Paratopotypes*, 5 ♂♂, some badly broken.

Limnophila asura is quite distinct from all regional species in the diagnostic features listed above. In some respects the male hypopygium suggests *L. raoana* Alexander, but there probably is no real relationship between the two flies.

Eupilaria varaha, sp. n.

General colouration of thorax brownish black, the anepisternum with a large black spot; legs brownish yellow to light brown; wings strongly infuscated, stigma very small, darker brown; male hypopygium with the posterior border of tergite four-lobed; outer dististyle gently curved, with a small recurved blade at tip; subtending arms of ædeagus long and conspicuous.

Male.—Length about 6 mm.; wing 7 mm.

Female.—Length about 6.5–6.6 mm.; wing 7–7.2 mm.

Rostrum and palpi dark brown. Antennæ with scape black, pedicel brownish black, flagellum brown; basal four flagellar segments crowded and incompletely fused, the outer segments oval, with long verticils. Head black, sparsely pruinose; anterior vertex broad.

Thoracic dorsum brownish black, sparsely pruinose. Pleura dark brown, with a large blackened spot on anepisternum; ventral sternopleurite less evidently darkened. Halteres brownish black. Legs with the coxæ yellow, the basal half of the fore pair brownish black; trochanters testaceous yellow; femora and tibiæ brownish yellow to light brown, the tips not or scarcely darker; tarsi brownish yellow; claws smooth. Wings strongly infuscated; stigma very small, darker brown; veins brown. Venation: *m* shorter than basal section of M_3 ; *m-cu* at or before mid-length of cell 1st M_2 .

Abdominal tergites brown, in cases with the posterior borders very narrowly blackened; sternites brown, the segments vaguely more brightened before the posterior ends. Male hypopygium with the caudal end of tergite four-lobed, the intermediate lobes slightly larger and more flattened, with a few scattered setæ, separated by a narrow notch, its base rounded; lateral lobes subtriangular, clothed with dense very tiny setulæ. Outer dististyle gently curved, at apex with a small recurved lobe; inner style large and massive, the tip obtuse. Outer gonapophysis appearing as a slender pale rod, its outer end a little dilated. Ædeagus with the inner subtending arms or apophyses long and conspicuous.

Hab. India (Assam).

Holotype, ♂, Cherrapunji, Khasi Hills, altitude 4,000 feet, 1954 (*S. Sircar*). *Allotopotype*, ♀, pinned with type. *Paratopotypes*, 4 ♂♀.

The present fly is quite distinct from the other regional members of the genus in the colouration of the body and wings, and in the structure of the male hypopygium. The most similar of such species is *Eupilaria thurmani* Alexander, of Thailand.

Elephantomyia (Elephantomyodes) nigropedata, sp. n.

Size large (wing, 10 mm.); general colouration of thorax orange, the mid-line of the præscutum a little infuscated; legs brownish black, including all tarsi; wings with a strong brownish tinge, especially in the cubital and anal fields, costal border and stigma still darker; R_s in virtual longitudinal alignment with R_5 ; abdomen light brown, the outer segments, including the hypopygium, black.

Male.—Length, excluding rostrum, about 9 mm.; wing 10 mm.; rostrum about 5 mm.

Rostrum one-half as long as wing, black throughout. Antennæ black, the short scape slightly more pruinose; flagellar segments elongate, with very long verticils. Head dark grey; anterior vertex about as wide as the scape.

Cervical region infuscated. Pronotum and mesonotum chiefly orange, the præscutum with a vague infuscation at the mid-line, not reaching the suture; posterior sclerites of notum somewhat more yellowed. Pleura orange. Halteres with stem brownish yellow, knob dark brown. Legs with coxæ orange, the fore pair a trifle more darkened; trochanters obscure yellow; remainder of legs dark brown to brownish black, including all tarsi. Wings with a strong brown tinge, most evident in the cubital and anal fields, cells C and Sc more yellowish brown; stigma very long and narrow, darker brown; no evident seams on the dark brown veins. Venation: R_{2+3+4} nearly perpendicular at origin, running close to R_1 at the lower margin of the stigma; R_s in virtual longitudinal alignment with R_5 , the basal section of the latter subequal to $r-m$; $m-cu$ just before mid-length of cell 1st M_2 .

Basal abdominal tergites light brown, sternites more yellowed; outer segments, including hypopygium, black.

Hab. South India (Madras).

Holotype, ♂, Kodaikanal, Pulney (Palni) Hills, altitude 6,500 feet. May 1953 (*P. Susai Nathan*).

Elephantomyia (Elephantomyodes) nigropedata is quite distinct from all other regional members of the subgenus in the black tarsi. The other species, including the somewhat similar *E. (E.) affluens* Alexander, have the tarsi snowy-white.

Gnophomyia (Gnophomyia) multiermis. sp. n.

General colouration of thorax light brown, with large black spots on the anepisternum and pleurotergite; antennæ elongate, exceeding one-half the body; legs brownish yellow; wings subhyaline, stigma brown, very inconspicuous; Sc long, Sc_1 ending virtually opposite R_2 ; $m-cu$ nearly its own length beyond fork of M ; male hypopygium with the outer dististyle bearing a strong spine on mesal face near base; inner style a very slender strongly curved crook; each gonapophysis profoundly forked into two spines.

Male.—Length about 4.5 mm.; wing 5 mm.; antenna about 2.4 mm.

Rostrum light brown; palpi black. Antennæ of male elongate, exceeding one-half the body; scape and pedicel obscure yellow, flagellum brownish black; flagellar segments long-cylindrical, slightly exceeding the longest verticils. Head black.

Thoracic dorsum light brown, posterior sclerites more pruinose. Pleura and pleurotergite light brown, with two large and conspicuous black spots, one on the anepisternum, the other on the pleurotergite. Halteres dark brown, the base of the stem yellow. Legs with the coxæ reddish brown, the fore pair darker; trochanters testaceous yellow; remainder of legs brownish yellow, the terminal segments a little darker; no scales on legs. Wings subhyaline; stigma brown, very narrow and inconspicuous; veins dark brown. Venation: *Sc* long, *Sc*₁ ending virtually opposite *R*₂; *Rs* nearly straight, nearly in longitudinal alignment with *R*₅; *R*₂₊₃₊₄ a little less than twice *R*₂₊₃; cell 1st *M*₂ shorter than the distal section of *M*₃; *m-cu* nearly its own length beyond the fork of *M*.

Abdomen dark brown, sternum more yellowed. Male hypopygium very distinctive. Basistyle short and stout; mesal face at apex with a group of about a dozen spine-like setæ. Outer dististyle broad-based, narrowed into a slender curved spine, with an erect smaller spine on mesal face near base; inner style smaller, broad-based, narrowed into a slender very strongly curved crook-like spine. Each gonapophysis profoundly forked, the stem short, the outer spine a little longer and more curved than the inner.

Hab. Thailand (Chiengmai Province).

Holotype, ♂, Doi Sutep, July 15th, 1953 (*Manop Ruttanapradith*).

The somewhat remarkable male hypopygium of the present fly is very different from that in other allied similar species having elongate antennæ in the male, including *Gnophomyia* (*Gnophomyia*) *anaphora* Alexander, *G. (G.) filiformis* Alexander, *G. (G.) macrocera* Alexander, and others.

Gonomyia (Idiocera) absona, sp. n.

Head and mesonotum chiefly grey, pleura brown above, more reddish yellow ventrally; legs yellow, femora with a vague brown subterminal ring; wings greyish yellow, restrictedly patterned with brown; *Sc*₁ ending shortly beyond origin of *Rs*, *Sc*₂ far retracted; male hypopygium with the apical lobe of the basistyle short and stout, terminating in a small flattened blade; three dististyles, the inner one ending abruptly in a straight black spine; ædeagus entirely pale, slender, terminating in a long straight simple point.

Male.—Length about 5.5 mm.; wing 5.5 mm.

Rostrum dark brown; palpi black. Antennæ with the scape brownish black, pruinose, the tip paler; pedicel brownish yellow; basal flagellar segments brownish yellow, the outer ones darker; flagellar segments oval, with long conspicuous verticils. Head grey, the front and anterior orbits yellowed.

Pronotum brownish grey, patterned with yellow. Mesonotal præscutum chiefly covered by three grey stripes, interspaces darker grey,

humeral and lateral borders obscure yellow; scutum dark grey, the centres of the lobes restrictedly patterned with brown; scutellum obscure brownish yellow, darker basally; mediotergite grey. Pleura and pleurotergite more reddish yellow ventrally, darker brown on upper half, including the dorsopleural region. Halteres with stem yellowed, knob weakly infuscated. Legs with the coxæ and trochanters yellow, fore coxæ darker; femora yellow, with indications of a narrow brown subterminal ring; tibiæ brownish yellow, the tips narrowly dark brown; tarsi black, the proximal ends of the basitarsi restrictedly paler. Wings greyish yellow, the prearcular and costal fields clearer yellow; a restricted brown pattern, including small spots at arculus, origin of *Rs*, stigma, tip of vein *R*₄ and somewhat paler in outer end of cell *R*₄; cord, including *m-cu*, less evidently darkened, indicated by the veins; remaining veins yellow, clearest in the brightened areas, somewhat darker beyond cord. Venation: *Sc*₁ ending a short distance beyond origin of *Rs*, *Sc*₂ far retracted, *Sc*₁ alone nearly as long as *Rs*; cell *R*₃ moderately large, the distance on margin subequal to or a little greater than cell *R*₄; vein *R*₄ strongly upcurved at tip; cell 2nd *M*₂ about twice its petiole; *m-cu* nearly twice its length before fork of *M*.

Abdominal tergites dark brown, sternites and hypopygium yellowed. Male hypopygium with the outer lobe of basistyle unusually short and stout, ending abruptly in a small compressed-flattened blade. Three dististyles, the outer one deeply bifid, its outer arm a slender spine; intermediate style an even more slender simple sinuous rod, its tip acute; inner style shortest, sinuous on basal third, ending abruptly in a straight black spine. *Æ*deagus entirely pale, the apex a long straight simple point.

Hab. South India (Salem District).

Holotype, ♂, Nagalur, Shevaroy Hills, altitude 4,000 feet, January 7th, 1955 (*P. Susai Nathan*).

Gonomyia (Idiocera) absona is quite distinct from *G. (I.) proxima* Brunetti and *G. (I.) recens* Alexander, the most similar regional species, in the details of venation and particularly in the structure of the male hypopygium.

Gonomyia (Idiocera) similior, sp. n.

Very similar to *sexguttata* in the general colouration, wing-pattern and venation, differing markedly in the structure of the male hypopygium, especially the dististyles.

Male.—Length about 6 mm.; wing 6 mm.

Rostrum and palpi dark brown to brownish black. Antennæ with scape brown, vaguely patterned with paler; succeeding segments vaguely bicoloured, pale brown, the apices more yellowed; outer flagellar segments slender and more uniformly infuscated. Head yellow in front, dark brown behind, including a central area on the anterior vertex.

Pronotum obscure yellow, patterned with darker. Mesonotal præscutum chiefly dark brownish grey, discoloured in the type but presumably consisting of paired stripes, the lateral borders broadly yellow; scutal

lobes and posterior sclerites of notum dark brown, the parascutella and pleurotergite yellowed. Pleura yellow, the dorsal parts weakly more darkened. Halteres with stem yellow, knob infuscated. Legs yellow, virtually unpatterned. Wings with the same type of pattern as in *sexguttata*, the ground weakly darkened, with conspicuous brown spots that are subtended on either side by whitened droplets or virtually complete circles; a whitened drop in apices of cells R_3 and R_4 . Venation virtually as in *sexguttata*.

Abdominal tergites brown, the incisures and lateral borders paler. Male hypopygium with the bifid dististyle longest, the finger-like lobe long and slender; intermediate style a simple strongly-curved glabrous rod that narrows to an acute spine; innermost style a little shorter, appearing as a simple straight rod that narrows to an acute point, the surface with eight or nine long erect setæ. Ædeagus pale, slender, the short apex recurved.

Hab. South Afghanistan.

Holotype. ♂, Kandahar-Kuna, altitude 950 meters, March 7th, 1953 (*Johann Klapperich*).

As indicated in the diagnostic paragraph, the present fly is very similar in its general appearance to the European *Gonomyia (Idiocera) sexguttata* (Dale) but is quite distinct in the structure of the male hypopygium. I have in my collection a specimen determined as being *sexguttata* by Edwards (St. Merryn, Cornwall, June 1912, Lamb) which has the male hypopygium quite different from the present fly, the intermediate style bearing four or five strong teeth near apex to produce a strong comb. However, this specimen disagrees with Edwards's description of the species (Trans. Soc. Brit. Ent., 5, 107, 1938), where both the intermediate and inner dististyles are described as being simple and terminating in a long blackened point. It seems probable that at least two distinct species of the *sexguttata* group occur in Britain and have been confused.

Gonomyia (Gonomyia) hyperacuta sp. n.

Allied to *parvicellula*; general colouration of mesonotum dark brown, scutellum yellow; rostrum light yellow; antennæ black; knobs of halteres infuscated; legs brown; wings with a weak brownish tinge, Sc_2 close to tip of Sc_1 ; male hypopygium with the outer dististyle slender, the outer fifth or sixth narrowed into a very long slender spine; inner dististyles apparently symmetrical on the two sides.

Male.—Length about 3·5 mm.; wing 4·5 mm.

Rostrum light yellow; palpi black. Antennæ black, the extreme base of the scape paler; flagellar segments oval, with short verticils. Head with front light yellow; vertex grey.

Pronotum brown, the scutellum and pretergites light yellow. Mesonotal præscutum and scutum dark brown, the humeral region of the former light brown; pseudosutural foveæ castaneous; scutellum yellow, conspicuous; postnotum, including pleurotergite, light grey, variegated anteriorly with yellow. Pleura light yellow, the propleura and mesepister-

num extensively pale brown. Halteres with stem obscure yellow, brighter basally, knob infuscated. Legs with the coxæ weakly infuscated; trochanters brownish testaceous; remainder of legs brown. Wings with a weak brownish tinge, the prearcular and costal regions more whitened; stigma brown; veins dark brown. Costal fringe moderately long. Venation: Sc short, Sc_1 ending just before origin of Rs , Sc_2 near its extreme tip; Rs a little longer than R_{2+3+4} but shorter than R_4 ; basal section of R_5 reduced; $m-cu$ shortly beyond fork of M . One wing of the type shows cell 1st M_2 very deformed, m lying far basad, greatly reducing the size of the cell.

Abdominal tergites dark brown, sternites and hypopygium more yellowed. Male hypopygium with the outer dististyle slender, the distal fifth or sixth narrowed into a very long slender spine; setæ of style only about a dozen in number. Inner dististyles apparently symmetrical (but their tips broken). In *matsya*, the apical spine of the outer dististyle is short and inconspicuous, the setæ longer and more numerous; inner dististyle asymmetrical on the two sides.

Hab. South India (Salem District).

Holotype, ♂, Yercaud, Shevaroy Hills, altitude 4,000 feet, December 3rd, 1954 (*P. Susai Nathan*).

Gonomyia (*Gonomyia*) *hyperacuta* is closest to *G. (G.) matsya* Alexander and *G. (G.) parvicellula* (Brunetti), both from South India, differing among themselves in the length of Sc , and especially of Sc_1 , and in the hypopygial structure. It seems very improbable to me that *parvicellula* can be identical with *G. (G.) affinis* Brunetti, described from the Eastern Himalayas, as was suggested by Edwards, based on a comparison of the type of *parvicellula* with material identified as being *affinis* by Brunetti, presumably in error.

Toxorhina (*Ceratocheilus*) *capnitis*, sp. n.

Mesonotum chiefly dark brown, the lateral præscutal borders buffy; pleura light yellow, conspicuously spotted with black on the anepisternum and dorsal pteropleurite; halteres yellow; wings smoky, the base and stigmal region light yellow; a broad darker brown seam over the cord, with less evident markings on the other veins; anterior branch of Rs about one and one-half times Rs ; cell 1st M_2 large, about as long as the distal section of M_{1+2} .

Sex?—Wing 5 mm.

Rostrum broken. Head brownish grey.

Cervical region brownish black; pronotum obscure yellow. Mesonotal præscutum with the lateral margins buffy, the disk almost covered by three confluent brown stripes, the interspaces barely indicated; scutum and scutellum patterned with dark brown, parascutella yellow. Pleura light yellow on the sternopleurite, meron and metapleura, the ventral sternopleurite and sternum weakly infuscated; dorsal pleurites with two very conspicuous black areas, one on the anepisternum, the other slightly separated, on the dorsal pteropleurite. Halteres pale yellow.

Legs with the coxæ and trochanters yellow, the fore pair weakly darkened ; remainder of legs with the ground yellow, the colour appearing almost black from the abundant blackened setæ. Wings smoky, the base and a smaller area in the stigmal region light yellow ; a broad darker brown seam over the cord ; *m* with a narrower darkened seam, with still narrower cloudings over veins *M* and *Cu* ; no darkened spot at *Sc*₂ ; veins pale brown, darker in the patterned areas, light yellow in the brightened fields. Relatively sparse macrotrichia on veins *Rs*, *R*₅, and distal sections of *M*₁₊₂ and *M*₃. Venation : anterior branch of *Rs* relatively long and sinuous, about one-and-one-half times *Rs*, the latter subequal to the basal section of *R*₅ ; cell 1st *M*₂ large, about as long as the distal section of *M*₁₊₂ ; *m-cu* at or close to fork of *M*.

Abdomen with the basal segments brownish black, the remainder broken.

Hab. Thailand (Chiengmai Province).

Holotype, ♂, Wat at Doi Sutep, February 24th, 1953 (*Deed C. Thurman*).

The general appearance of the present fly, including the pattern of the wings and body, is quite different from that of the other regional members of the subgenus but rather similar to various African species, such as *Toxorhina* (*Ceratocheilus*) *brachymera* Alexander, *T. (C.) cornigera* (Speiser), *T. (C.) scimitar* Alexander, and *T. (C.) seychellarum* (Edwards). The details of coloration and venation are quite distinct.