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CHARLES P. ALEXANDER

Entomological Results from
the Swedish Expedition 1934 to Burma
and British India

DIPTERA: Tipulidae-Cylindrotominae, Limoniinae, I

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DIPTERA: Tipulidae-Cylindrotominae, Limoniinae, I

Collected by RENÉ MALAISE

By CHARLES P. ALEXANDER

With 16 figures in the text

In continuing the discussion of the crane-flies taken in Burma in 1934 by Dr. RENÉ MALAISE and Mrs. MALAISE I am here considering various species falling in the large subfamily *Limoniinae*, with the inclusion of a single representative of the *Cylindrotominae*. The latter group constitutes the smallest of the three subfamilies that comprise the *Tipulidae* but at the same time are among the most interesting, since the larvae have leaf-feeding habits that are analogous to those of the phytophagous Hymenoptera and to the Lepidoptera. Several further species belonging to the *Limoniinae* are included in the materials and will be treated in subsequent parts under this title. I am greatly indebted to Dr. MALAISE for the opportunity of studying this most interesting series of Himalayan crane-flies. Types and uniques of the various species are preserved in the Swedish Museum of Natural History, Stockholm.

Subfamily *Cylindrotominae*

Genus *Cylindrotoma* MACQUART

Cylindrotoma pallidipes sp. n.

General coloration yellow, the dorsum of the praescutum and scutum, together with large areas on the postnotum and sternopleurite black; tarsi paling to yellowish white; wings with a weak brownish tinge, restrictedly patterned with still darker brown; vein R_{1+2} entirely atrophied; male hypopygium with the tergite unusually large, its caudal border emarginate; basistyle and dististyle slender; gonapophysis unequally bifid; aedeagus trifid.

Male. Length about 9.5–10 mm; wing 8–8.5 mm; antenna about 2.2–2.3 mm.

Female. Length about 10.5–11 mm; wing 9–9.5 mm.

Described from alcoholic material. Rostrum brownish yellow; palpi brown. Antennae (male) of moderate length; scape and pedicel yellow, flagellum black; basal flagellar segment cylindrical, the succeeding ones with the lower face more protu-

berant, the outer segments passing into oval; longest verticils shorter than the segments, on the outer face, those of the lower face shorter and more spinous. Head brownish black above, paler beneath.

Pronotum brownish yellow. Mesonotal praescutum chiefly covered by a blackened shield that further involves the scutal lobes and extreme cephalic portion of the median area; humeral and lateral regions of the praescutum abruptly yellow; region of praescutal interspaces narrowly impressed; posterior sclerites of notum obscure yellow, the posterior two-thirds of mediotergite blackened. Pleura obscure yellow, the ventral sternopleurite with an extensive black area; a further smaller black spot on ventral pleurotergite near the wing root. Halteres yellow. Legs with the coxae brownish yellow; trochanters yellow; femora yellow, the tips brownish black; tibiae brown to dark brown, the tips darker; basitarsi blackened, the tips paler, succeeding three tarsal segments yellowish white, terminal segment black; several legs detached or broken and loose in vials so it cannot be stated as to whether all tarsi are colored as described. Wings (Fig. 1) with a weak brownish tinge, conspicuously patterned with darker brown along cord, outer end of cell *1st M*₂ and the stigma; prearcular field a little more brightened; veins brown, those in the proximal part of wing more brightened. Venation: Vein *R*₁₊₂ entirely atrophied; petiole of cell *M*₁ variable in length, in cases subequal to *m*, in other specimens shorter; *r-m* short but present; *m-cu* close to the fork of *M*; cell *2nd A* relatively broad.

Abdomen brownish yellow, the lateral tergal borders very narrowly darkened; terminal segments brownish black to black, in the male involving segments seven to nine, in the female six to nine. Ovipositor with the bases of the valves blackened; cerci hairy. Male hypopygium (Fig. 6) with the tergite, *9t*, unusually large, concealing the remainder of hypopygium when viewed from above; caudal border with a broad U-shaped emargination, the lateral lobes thus formed obtuse; setae and setulae of the lobes abundant but very small, delicate and inconspicuous. Basistyle, *b*, unusually long and slender. Dististyle, *d*, simple, shorter than the basistyle, gradually narrowed to the slender obtuse apex, the surface, especially the base, with relatively numerous pale setae. Gonapophysis, *g*, unequally bifid, the outer arm longest. Aedeagus, *a*, trifid, the stem very short, the arms deflexed; paired arms only a little shorter than the unpaired one.

Holotype, alcoholic ♂, Kambaiti, altitude 7000 feet, June 4, 1934 (MALAISE). *Allotopotype*, alcoholic ♀. *Paratopotypes*, alcoholic ♂♀.

Cylindrotoma pallidipes is readily distinguished from all described regional species by the whitened tarsi and the patterned wings. I believe the reference of the fly to *Cylindrotoma* rather than to *Phalacrocer* Schiner is correct but as noted at various times in the past by EDWARDS, ALEXANDER and others, all of the so-called genera centering about *Cylindrotoma* are closely related and eventually may be relegated to subgeneric rank.

Subfamily *Limoniinae*

Genus *Limonia* MEIGEN

Limonia (Metalimnobia) arta sp. n.

Size small (wing, male, 5.5 mm); general coloration reddish brown, the thoracic pleura with a distinct darker longitudinal stripe; antennae with the basal flagellar segments globular; halteres relatively long and slender, infuscated; femora yellow,

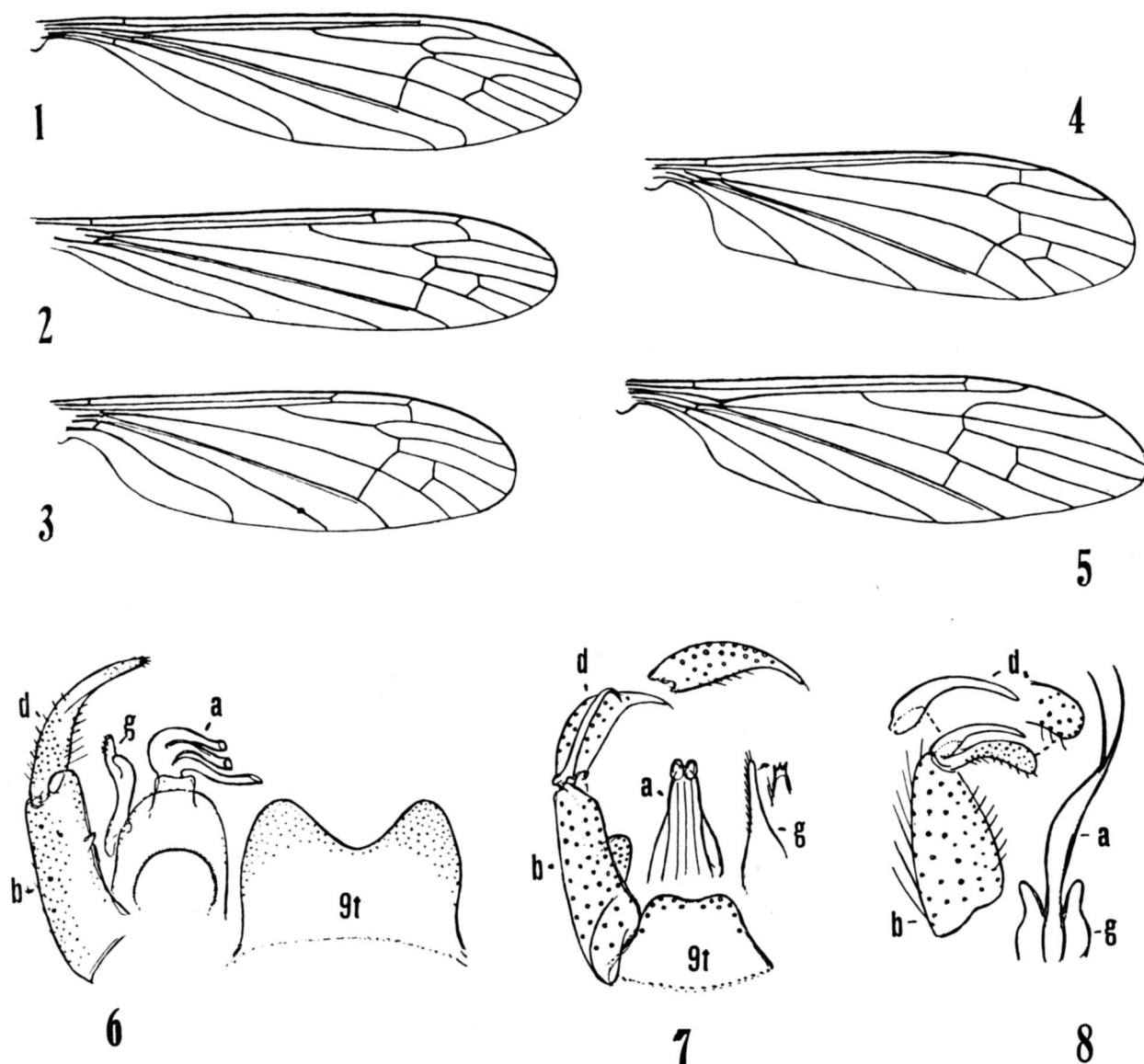


Fig. 1. *Cylindrotoma pallidipes* sp. n.; venation. — Fig. 2. *Limonia (Metalimnobia) arta* sp. n.; venation. — Fig. 3. *Limonia (Metalimnobia) chalybeicolor* sp. n.; venation. — Fig. 4. *Antocha (Antocha) ophioglossa* sp. n.; venation. — Fig. 5. *Helius (Helius) graphipterus* sp. n.; venation. — Fig. 6. *Cylindrotoma pallidipes* sp. n.; male hypopygium. — Fig. 7. *Limonia (Metalimnobia) arta* sp. n.; male hypopygium. — Fig. 8. *Antocha (Antocha) ophioglossa* sp. n.; male hypopygium.

(Symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; t, tergite.)

the tips passing into dark brown, tarsal segments three and four dilated; wings with a very deep fulvous brown tinge; Sc_1 ending about opposite two-thirds the length of R_s ; $m-cu$ about one-third its length beyond fork of M ; male hypopygium with the dorsal dististyle a slender rod, its tip acute; gonapophysis with the mesal-apical lobe long and straight, the margin fringed with delicate setae.

Male. Length about 5 mm; wing 5.5 mm.

Described from an alcoholic specimen. Rostrum very reduced, brown; palpi brownish black, segments short. Antennae dark brown, the outer flagellar segments a trifle paler; basal flagellar segments globular, the outer ones passing into oval; verticils relatively short and inconspicuous, shorter than the outer segments; terminal segment about one-fifth longer than the penultimate. Head dark brown, oval in outline; anterior vertex relatively broad, exceeding twice the diameter of the scape; eyes relatively small.

Pronotum brown, darker laterally. Mesonotum apparently uniform dark reddish brown, the praescutum without clearly defined stripes; setae of mesonotum small and inconspicuous. Pleura reddish brown with a distinct dark brown longitudinal stripe extending from the cervical region to the base of abdomen. Halteres relatively long and slender, infuscated. Legs with the coxae brownish yellow; trochanters yellow; femora yellow, the tips passing into dark brown; tibiae and tarsi brown to brownish black; third and fourth tarsal segments somewhat dilated, about twice as broad as either the second or fifth, their lower face with abundant dense curved setae; claws small, apparently with only a single weak tooth at near midlength. Wings (Fig. 2) with a very deep fulvous brown suffusion, the base a trifle paler; stigma very small, oval, only slightly differentiated; veins brown. No macrotrichia on prearcular portion of vein *R*. Venation: *Sc* moderately long, *Sc*₁ weak, ending about opposite two-thirds the length of *Rs*, *Sc*₂ stronger, placed at its tip; cell *1st M*₂ relatively long, a little exceeding vein *M*₃, beyond it; *m-cu* about one-third its length beyond fork of *M*; vein *2nd A* gently sinuous, the cell subequal in width for virtually its whole length except at base.

Abdominal tergites dark brown, especially laterally, sternites more brownish yellow. Male hypopygium (Fig. 7) with the tergite, *9t*, broad basally, narrower but still wide at apex which is very shallowly emarginate, each low lobe with eight or nine strong setae; remainder of tergite with abundant setulae only. Basistyle, *b*, very long and slender, the ventromesal lobe small, oval, with setae of moderate length. Dorsal dististyle, *d*, a slender rod, strongly curved and acutely pointed at apex. Ventral dististyle, *d*, long-oval, produced into the long slender rostral portion. Gonapophysis, *g*, with mesal-apical lobe long and straight, pale, the outer margin fringed with delicate pale setae. Aedeagus, *a*, unusually broad at base, narrowed outwardly, terminating in two oval lobes.

Holotype, alcoholic ♂, Road at 40 Km east of Taunggyi, Southern Shan States, September 25–October 13, 1934 (MALAISE).

In its general appearance the present fly is most similar to species such as *Limonia* (*Limonia*) *striopleura* (EDWARDS). The type of the latter was a female but later males were discovered and according to EDWARDS (Journ. Fed. Malay St. Mus., 14: 73; 1928) the hypopygium is of simple structure with the dististyle very small. This would seem to indicate that this species is a true *Limonia* or at least not referable to *Metalimnobia* where the present fly seems to belong without question.

Limonia (*Metalimnobia*) *chalybeicolor* sp. n.

General coloration of entire body polished blue-black; halteres darkened; legs black, the femora with a narrow yellow subterminal ring; wings yellow, heavily patterned with brown; *Sc* relatively short, *Sc*₁ ending just beyond midlength of *Rs*, *Sc*₂ near its tip, cell *2nd A* wide; outer abdominal segments and valves of ovipositor orange.

Female. Length about 8.5 mm; wing 7.5 mm.

Described from alcoholic material. Rostrum and palpi black. Antennae 15-segmented; scape and pedicel black, basal flagellar segments brownish black, the outer ones somewhat paler; basal flagellar segments very short-oval, each with one or two verticils of unusual length, these unilaterally arranged; outer segments passing through long-oval into elongate-cylindrical; terminal segment elongate, exceeding the penultimate, without the elongate verticil. In the unique type, with a single antenna

remaining, it is uncertain as to whether the outermost two flagellar segments are divided by a suture or are merely strongly constricted; in the latter case the segment would be of unusual length, being more than twice as long as the eleventh flagellar segment. Head blue black.

Thorax uniformly blue black, the notum unusually glabrous, especially the praescutum. Halteres very short, with large knobs, infuscated. Legs with the coxae blackened; trochanters brownish yellow; a single detached leg remains, apparently one of the hind pair; femora black, the basal fourth slightly paler, at near three-fourths the length with a clear yellow subterminal ring that is a little more than one-half as extensive as the black apex; remainder of legs brownish black; claw with about five teeth. Wings (Fig. 3) with the ground color yellow, the apical and caudal portions more clouded so as to greatly restrict the ground; a very heavy brown pattern, including a large quadrate area at origin of *Rs*, paler and not quite reaching vein *M* behind; a smaller spot basad of the last, not quite reaching *R*; stigma and a large confluent cloud over anterior cord; narrower seams on posterior cord and outer end of cell *1st M*₂; dusky washes in cubital and anal cells relatively inconspicuous; veins brown. Venation: *Sc* relatively short, *Sc*₁ ending just beyond midlength of *Rs*, *Sc*₂ near its tip; free tip of *Sc*₂ shorter than *R*₁ + *R*₂, the former section of this combination vein with trichia; *m-cu* just before fork of *M*; cell *1st M*₂ large, broad-rectangular; cell *2nd A* wide.

Abdomen blue-black, the posterior borders of the segments narrowly somewhat more intense; outer two abdominal segments abruptly orange; bases of hypovalvae blackened, the remaining valves orange. Ovipositor with cerci short and straight, slender, their tips acute.

Holotype, alcoholic ♀, Kambaiti, altitude 6500 feet, June 11, 1934 (MALAISE).

Limonia (Metalimnobia) chalybeicolor is readily distinguished from all other regional members of the subgenus by the venation and coloration of the body and legs. The most similar species is *L. (M.) nigronitida* (ALEXANDER), of northern Japan, which is much larger, with *Sc* long and with the pattern of the legs and wings quite distinct.

Genus *Antocha* OSTEN SACKEN

Antocha (Antocha) ophioglossa sp. n.

General coloration dark brown; antennae (male) elongate, nearly one-half as long as body, flagellar segments not protuberant on lower face; wings with a weak brownish tinge, the prearcular field abruptly whitened; male hypopygium with the outer dististyle a slender glabrous horn, its tip narrowly obtuse; aedeagus elongate, projecting from the genital chamber, at apex split into two slender black spines.

Male. Length about 4.4–4.5 mm; wing 4.7–4.8 mm; antenna about 2–2.1 mm.

Described from alcoholic material. Rostrum and palpi brown. Antennae dark brown throughout, of unusual length for a member of this subgenus, as shown by the measurements; basal flagellar segments nearly cylindrical, the outer ones more elongate oval; terminal segment small, about one-third the size of the penultimate; flagellar segments clothed with an abundant dense erect pubescence, verticils inconspicuous. Head dark brown; eyes large; anterior vertex relatively broad, approximately four times the diameter of scape.

Thorax almost uniformly dark brown, presumably with more or less pruinosity in fresh material. Halteres pale, knobs weakly darkened. Legs with the fore coxae

brown, the remaining ones paler; trochanters yellow; a single detached leg, broken at tarsi, this brown throughout. Wings (Fig. 4) with a weak brownish suffusion, the prearcular field abruptly white, including the veins; wings unpatterned; veins pale brown. Venation: R_{1+2} and R_2 subequal; R_2 and $r-m$ about in transverse alignment; $m-cu$ shortly before the fork of M , the distance somewhat variable, the greatest distance about one-fifth the length of $m-cu$.

Abdomen, including the hypopygium, dark brown, the extreme posterior borders of the segments a trifle darker. Male hypopygium (Fig. 8) with the outer dististyle, d , slender, appearing as a glabrous horn, rather strongly curved to the narrow obtuse tip. Inner dististyle a little longer, widened distally, the apex broadly obtuse, the surface and especially the margins with coarse scattered setae. Aedeagus, a , elongate and protruding from the genital chamber, compressed-flattened for about three-fourths the length, thence split into two slender blackened spines. Gonapophysis, g , appearing as a flattened pale blade, dilated on basal part, the distal end narrow and obtuse, apparently provided with very delicate setulae to produce a fuzzy appearance.

Holotype, alcoholic ♂, Kambaiti, altitude 7000 feet, April 30, 1934 (MALAISE).
Paratopotype, alcoholic ♂.

Antocha (Antocha) ophioglossa is entirely distinct from the other numerous species of the subgenus in the Chinese-Himalayan region. It is readily told from all by the unusually long antennae and, especially, the male hypopygium, notably the aedeagus. The conformation of the latter has suggested the specific name of the fly. Superficially it suggests *A. (A.) lacteibasis* ALEXANDER but the resemblance is not particularly close.

Genus *Helius* ST. FARGEAU

Helius (Helius) graphipterus sp. n.

Size large (wing, female, over 9 mm); general coloration of thorax chestnut brown or fulvous; rostrum black, of moderate length; legs black, the femoral bases brightened; wings pale yellow, with a heavy brown pattern; Sc very long, Sc_1 ending beyond fork of R_s , Sc_2 at its tip; cell $1st M_2$ large, rectangular in outline; $m-cu$ beyond the fork of M .

Female. Length, including rostrum, about 10–10.5 mm; wing 9.5–10 mm; rostrum about 0.7–0.8 mm.

Described from alcoholic material. Rostrum black, of moderate length only, about one-third longer than remainder of head; palpi black. Antennae with the scape dark brown, pedicel a trifle paler; flagellum broken. Head dark.

Pronotum fulvous yellow, darker medially. Mesonotum chiefly light chestnut brown or fulvous, the humeral region of praescutum more yellowed. Pleura fulvous brown. Halteres with stem weakly darkened, knob yellow. Legs with the coxae pale brown; trochanters yellow; a single (hind) leg remains, femora brownish black, the basal third yellow; tibiae and tarsi black. Wings (Fig. 5) with the ground color pale yellow, the prearcular field clear light yellow; a heavy brown pattern, arranged as follows: A small postarcular spot in bases of cells R and M ; a major subquadrate area at origin of R_s , extending from R to M , only slightly involving the base of cell R_1 ; stigma and a broad confluent seam along cord, narrowed behind, especially over $m-cu$; outer end of cell $1st M_2$; a small brown marginal spot at end of R_3 ; extreme wing margin and longitudinal veins beyond cord very narrowly and insensibly

bordered by brown; basad of cord, veins *Cu* and *2nd A* with conspicuous brown borders, the former invading cell *M*, all of cell *Cu*₁ and the base of *Cu*₂; axillary border weakly darkened; cells *C* and *Sc* uniformly brownish yellow; veins brown, darker in the patterned areas, brighter in the clear portions, yellow at the wing base. Venation: *Sc* very long, *Sc*₁ ending beyond the fork of *Rs*, *Sc*₂ at its tip; *Rs* strongly arcuated at origin; basal section of *R*₄₊₅ lacking or nearly so, subpunctiform, or with *r-m* at or just before the fork of *Rs*; cell *1st M*₂ large, rectangular in outline, about as long as vein *M*₄ beyond it; *m* a little shorter than the basal section of *M*₃; *m-cu* from one-third to one-fourth its length beyond the fork of *M*.

Abdomen brown, the subterminal segments blackened to form a ring; genital segment obscure fulvous. Ovipositor with the valves horn-yellow; cerci long and slender, their tips gently upcurved.

Holotype, alcoholic ♀, Kambaiti, altitude 7000 feet, June 11, 1934 (MALAISE).
Paratopotype, alcoholic ♀, 6800 feet, April 10, 1934 (MALAISE).

Helius (Helius) graphipterus is very different from all described regional species, differing especially in the large size and in the heavily patterned wings. In size it almost equals species such as *H. (H.) amplus* EDWARDS but is entirely distinct.

Helius (Helius) stenorhynchus sp. n.

General coloration of praescutum reddish brown, darker medially; posterior sclerites of notum and the pleura darker brown; rostrum long and very slender, about equal in length to the combined remainder of the head and the thorax, black throughout; halteres yellow; femora obscure yellow, the tips narrowly infuscated, tibiae and tarsi pale brownish yellow; wings pale gray; stigma conspicuous, brown; a very restricted dark seam on cord; cell *R*₃ at margin approximately four times cell *R*₁; cell *1st M*₂ relatively large, longer than vein *M*₄ beyond it; *m-cu* shortly beyond the fork of *M*; abdomen brown, the caudal borders of the segments very narrowly brownish black; male hypopygium with the outer dististyle unequally bifid at tip.

Male. Length, including rostrum, about 9.3 mm; wing 7.3 mm; rostrum 2.2 mm; antenna about 1.2 mm.

Described from alcoholic material. Rostrum unusually long and slender, black throughout, about equal in length to the combined remainder of head and the thorax; palpi 4-segmented, at tip of rostrum, pale brown, the incisures whitened. Antennae with scape and pedicel black, flagellum paler; basal flagellar segments oval, relatively crowded, with short verticils; outer segments becoming long and attenuated, with very long verticils that exceed the segments. Head black, probably pruinose in fresh specimens; eyes large, with delicate ommatidia; anterior vertex narrow, less than the diameter of scape.

Pronotum reddish brown, narrowly darkened medially. Mesonotal praescutum and scutum reddish brown, the former more infuscated medially, the scutal lobes scarcely darkened; vestiture sparse and scattered but relatively long and erect; posterior sclerites of notum darker brown. Pleura dark brown. Halteres relatively long and slender, yellow. Legs with all coxae white, contrasting with the pleura; trochanters whitened, with a dark spot beneath; femora obscure yellow, the tips narrowly and inconspicuously infuscated, the amount subequal on all legs; tibiae and tarsi pale brownish yellow; claws simple. Wings (Fig. 9) pale grayish subhyaline, the base and costal region more whitened; stigma oval, dark brown, relatively conspicuous; inconspicuous dark seams on cord and outer end of cell *1st M*₂, most

evident over the anterior cord; vein *Cu* inconspicuously seamed with dusky; veins brown, paler in the whitened fields. Macrotrichia on *Rs* and all veins beyond cord. Venation: *Sc*₁ atrophied, *Sc*₂ ending about opposite fork of *Rs*; branches of *Rs* strongly divergent, cell *R*₃ on margin approximately four times *R*₁; cell 1st *M*₂ relatively large, slightly narrowed apically, longer than vein *M*₄ beyond it; *m-cu* about one-third to one-fourth its length beyond the fork of *M*; cell 2nd *A* relatively broad.

Abdomen brown, the caudal borders of the segments very narrowly brownish black; hypopygium paler brown. Male hypopygium (Fig. 14) with the mesal face of basistyle, *b*, with a longitudinal row of coarse black setae. Outer dististyle, *d*, nearly straight, shallowly and unequally bidentate at apex, the lower tooth very short and stout; inner dististyle with distal third narrowed and pendant, outer margin with conspicuous setae, those at midlength stouter, extended into a long delicate hair. Lateral tergal lobe appearing as a flattened blade, its lateral portion produced into a strongly curved spine.

Holotype, alcoholic ♂, Kambaiti, 7000 feet, June 4, 1934 (MALAISE).

The present fly is readily told from other generally similar regional species by the unusual length and slenderness of the rostrum. The most similar forms include *Helius (Helius) pluto* ALEXANDER (Western China), *H. (H.) rufithorax* ALEXANDER (Formosa), and *H. (H.) tenuirostris* ALEXANDER (Japan), all having the rostrum somewhat as in the present fly but differing in the coloration of the body, legs and wings, and in the details of venation and structure of the male hypopygium.

Genus *Paradelphomyia* ALEXANDER

Paradelphomyia (Oxyrhiza) minutoides sp. n.

Size small (wing under 5 mm); general coloration yellow, the head, anterior part of thoracic notum and the sternopleurite weakly darkened; legs yellow; wings pale yellow, unpatterned; macrotrichia of cells very sparse; *R*₂₊₃₊₄ oblique to suberect; cell *M*₁ present; *m-cu* more than one-half its length beyond the fork of *M*; male hypopygium with the basistyle produced into a lobe beyond the point of insertion of the dististyles; outer dististyle slender, with two major and a few microscopic teeth at tip.

Male. Length about 4 mm; wing 4.6–4.8 mm.

Described from alcoholic material. Rostrum brownish yellow; palpi pale brown. Antennae 16-segmented; scape yellow, pedicel and flagellum brown; basal flagellar segments oval, slightly enlarged, beyond the fourth or fifth becoming more elongate, with conspicuous verticils. Head infuscated; eyes relatively large.

Thorax almost uniformly yellow or very pale brownish yellow; pronotum and praescutum with indications of a weak brown median stripe, best indicated on cephalic portion; sternopleurite weakly darkened. Halteres yellow. Legs yellow throughout or with the fore coxae slightly darkened. Wings (Fig. 10) pale yellow, the prearcular field a little clearer; stigma not differentiated; veins yellow, poorly delimited against the ground. Macrotrichia of cells very sparse and inconspicuous, virtually restricted to a few in outer end of cell *R*₄; costal fringe relatively long and conspicuous. Venation: *Rs* strongly arcuated at origin; *R*₂₊₃₊₄ oblique to suberect; cell *R*₃ relatively short; cell *M*₁ less than one-half its petiole; *m-cu* more than one-half its length beyond the fork of *M*, in cases at midlength of cell.

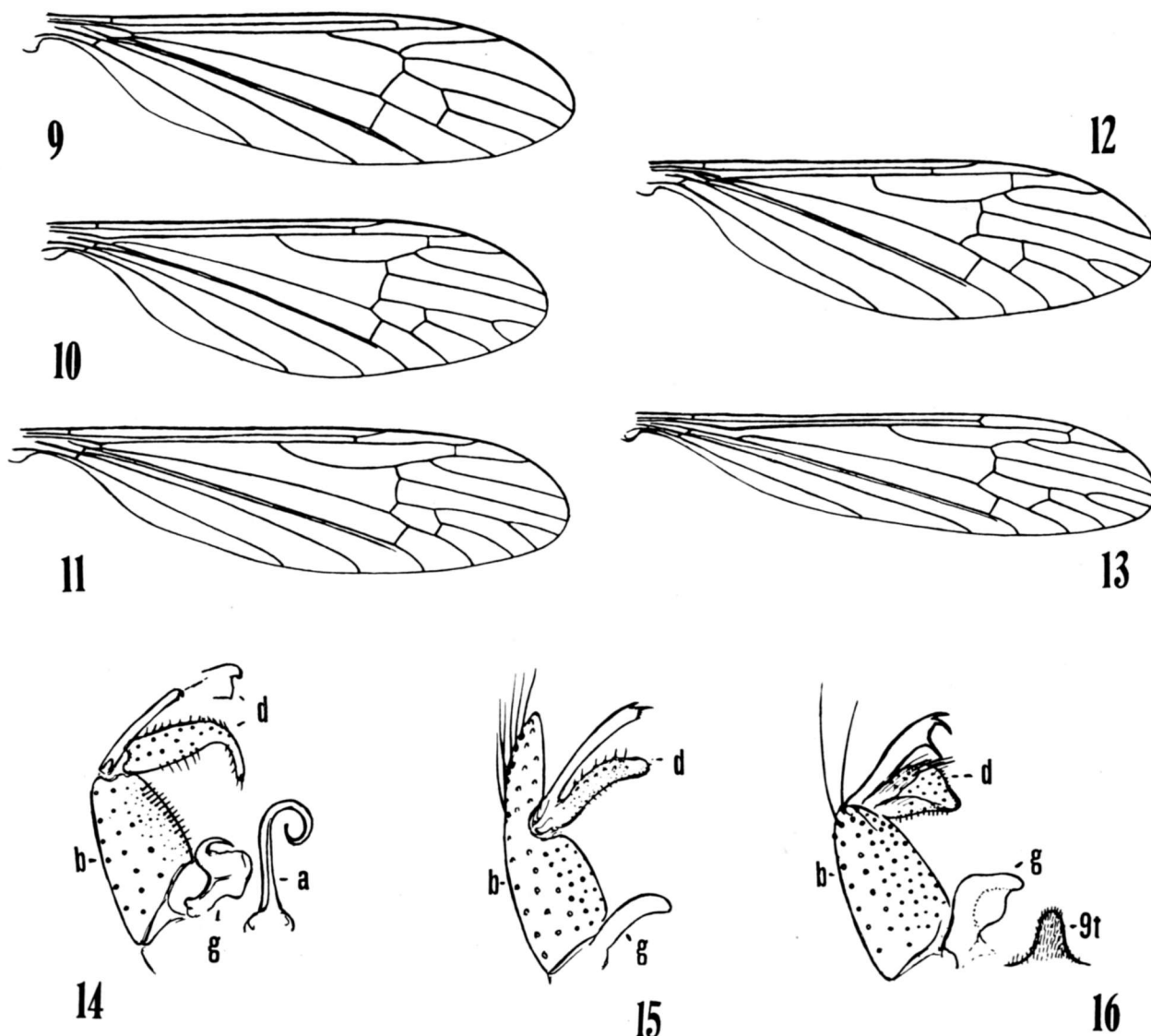


Fig. 9. *Helius (Helius) stenorhynchus* sp. n.; venation. — Fig. 10. *Paradelphomyia (Oxyrhiza) minutoides* sp. n.; venation. — Fig. 11. *Paradelphomyia (Oxyrhiza) distivena* sp. n.; venation. — Fig. 12. *Paradelphomyia (Oxyrhiza) amabilis* sp. n.; venation. — Fig. 13. *Pseudolimnophila kambaitiae* sp. n.; venation. — Fig. 14. *Helius (Helius) stenorhynchus* sp. n.; male hypopygium. — Fig. 15. *Paradelphomyia (Oxyrhiza) minutoides* sp. n.; male hypopygium. — Fig. 16. *Paradelphomyia (Oxyrhiza) distivena* sp. n.; male hypopygium.

(Symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; t, tergite.)

Abdomen brownish yellow, the caudal borders of the more proximal tergites very vaguely darkened; eighth sternite a little darker. Male hypopygium (Fig. 15) with the basistyle, *b*, produced beyond the point of insertion of the dististyles as a stout lobe that is longer than the inner dististyle and almost equal to the outer style; along outer margin of lobe with a single row of unusually long strong setae, the remaining vestiture smaller. Outer dististyle, *d*, unusually slender, gently widened outwardly, terminating in a strong acute spine, with a slightly smaller subapical spine on outer margin, and three or four microscopic denticles on lower margin before tip. Ventral fork of aedeagus with unusually slender spines.

Holotype, alcoholic ♂, Kambaiti, altitude 7000 feet, June 4, 1934 (MALAISE). *Paratopotypes*, 3 alcoholic ♂♂.

The most similar species are *Paradelphomyia (Oxyrhiza) flavescens* (BRUNETTI),

of the eastern Himalayas, and *P. (O.) cerina* (ALEXANDER), of southwestern China. In the structure of the male hypopygium, the fly is much more like the latter but differs in the details, as the stout apical lobe of the basistyle with a different arrangement of major setae. In *cerina* the wings are narrower with corresponding differences in the venation. It may be recalled that the present genus was formerly known as *Adelphomyia* and later as *Oxydiscus*.

Paradelphomyia (Oxyrhiza) distivena sp. n.

General coloration dark brown; legs brown, the tarsi somewhat paler; wings brownish yellow, the stigma pale brown; outer cells of wing with rather numerous trichia; *Sc* moderately long, *Sc*₁ ending a short distance before the level of the fork of *Rs*, shorter than *R*₂₊₃₊₄; vein *R*₂ subobsolete or very faintly indicated, lying unusually far distad, *R*₂₊₃ exceeding *R*₂; male hypopygium with the basistyle not produced beyond origin of the dististyles; outer dististyle trispinous at apex, inner style unusually broad and expanded, the margins more or less convoluted or folded, near base with a more or less distinct lobe.

Male. Length about 6.5 mm; wing 7 mm.

Described from alcoholic specimens. Rostrum and palpi dark brown. Antennae of moderate length, if bent backward extending about to the wing root; scape and pedicel dark brown, the flagellum paler; outer flagellar segments becoming more elongate, with unusually long outspreading verticils. Head dark brown.

Thorax almost uniformly dark brown. Halteres with stem pale, knob very weakly darkened. Legs with coxae dark brown, the posterior pair a trifle brighter; trochanters yellow; femora dark brown, tibiae paler brown, the tarsi still paler. Wings (Fig. 11) with a brownish yellow tinge, the prearcular and costal fields somewhat clearer yellow; stigma oval, pale brown; a scarcely indicated brown cloud on anterior cord, best indicated by a deepening in color of the veins; veins beyond cord pale brown, basad somewhat paler, in cases becoming yellow in the more brightened fields (better shown in paratype than in the holotype). Macrotrichia of cells beyond cord relatively numerous, especially near the wing tip. Venation: *Sc* moderately long, *Sc*₁ ending a short distance before the level of the fork of *Rs*, *Sc*₂ some distance from its tip, *Sc*₁ shorter than *R*₂₊₃₊₄; vein *R*₂ very faintly indicated to subobsolete but evidently lying unusually far distad for a member of the genus, *R*₂₊₃ exceeding *R*₂; cell *M*₁ present; *m-cu* about opposite midlength of cell 1st *M*₂.

Abdomen dark brown, including hypopygium. Male hypopygium (Fig. 16) with what appears to represent the ninth tergite, *9t*, projecting caudad as a conspicuous depressed-flattened lobe that is covered with abundant setae. Apex of basistyle, *b*, not produced beyond the point of insertion of the dististyles. Outer dististyle, *d*, a slender blackened rod basally, more expanded beyond, at apex with two strong curved spines, the outermost a little more slender and straighter, before apex on lower margin with an additional erect straight spine. Inner dististyle large and complex, dark-colored, with a more or less distinct more basal lobe on outer portion, this bearing four or five strong setae; remainder of style further expanded or dilated and strongly convoluted, the total area extensive; apex obtuse. Gonapophysis, *g*, a very broad flattened plate. Ventral fork of aedeagus with each arm a small slender gently curved spine, these decussate across the midline (not figured).

Holotype, alcoholic ♂, Kambaiti, altitude 6800 feet, April 10, 1934 (MALAISE).
Paratopotype, alcoholic ♂.

The most similar regional species is *Paradelphomyia (Oxyrhiza) flavescens* (BRUNETTI), which likewise has the basistyle of the male hypopygium unproduced. The present fly differs in all details of the male hypopygium.

Paradelphomyia (Oxyrhiza) amabilis sp. n.

General coloration dark brown; knobs of halteres infuscated; wings light yellow, sparsely but handsomely patterned with pale brown, the markings restricted to the vicinity of the veins; Sc_1 unusually long, nearly twice R_{2+3+4} ; cell M_1 present; inner end of cell *1st* M_2 lying basad of cells R_4 and R_5 ; *m-cu* at near midlength of the lower face of cell *1st* M_2 .

Female. Length about 7 mm; wing 7 mm.

Described from alcoholic material. Rostrum and palpi dark brown, terminal segment of the latter subequal in length to the penultimate but more slender. Antennae with scape and pedicel dark brown, flagellum paler, especially the outer segments; basal two or three flagellar segments somewhat enlarged, the outer ones becoming linear, with relatively long and conspicuous verticils; terminal segment elongate. Head dark brown.

Thorax almost uniformly dark brown, the praescutum without evident stripes, the surface glabrous or virtually so, scutellum still darker. Halteres with stem pale, knob infuscated. Legs with the fore coxae dark brown, the remaining coxae yellow; trochanters obscure yellow, the tips a little darker; remainder of legs broken. Wings (Fig. 12) with the ground color light yellow, sparsely but handsomely patterned with pale brown, as follows: A cloud at origin of *Rs*, confined to the cell; a broad band over cord, not quite connected with another cloud over vein R_2 ; outer end of cell *1st* M_2 ; small and insignificant clouds over Sc_2 and fork of M_{1+2} ; certain of the veins beyond cord, especially R_5 , M_{1+2} , distal section of Cu_1 , and outer ends of medial veins vaguely seamed with darker, best-indicated by a deepening in color of the veins; veins yellow, brown in the patterned areas. Macrotrichia of cells relatively numerous in apical portion, from cells R_2 to Cu , inclusive, most numerous in the distal ends of the cells; wings relatively broad, widest opposite the origin of *Rs* and termination of vein *2nd A*. Venation: Sc_1 ending about opposite fork of *Rs*, unusually long, nearly twice R_{2+3+4} ; *Rs* angulated at origin; R_{2+3} about one-half R_2 ; R_{1+2} relatively long and gently sinuous, about twice R_{2+3+4} ; inner end of cell *1st* M_2 narrowed, lying basad of level of cells R_4 or R_5 ; cell M_1 about two-thirds its petiole; *m-cu* at near midlength of lower face of cell *1st* M_2 .

Abdomen dark brown, especially outwardly, the more proximal tergites with obscure yellow incisures; basal sternites clearer yellow. Ovipositor darkened basally, the elongate valves yellow; cerci strongly upcurved.

Holotype, alcoholic ♀, Kambaiti, altitude 6800 feet, April 10, 1934 (MALAISE).

Paradelphomyia (Oxyrhiza) amabilis is readily told from all other regional species by the pattern of the wings. The unusually long vein Sc_1 and the basal production of cell *1st* M_2 are noteworthy characters.

Genus *Pseudolimmophila* ALEXANDER

Pseudolimmophila kambaitiae sp. n.

General coloration dark brown, the lateral praescutal borders brighter; wings grayish, restrictedly patterned with pale brown clouds, including origin of *Rs*, stigma, cord and outer end of cell *1st* M_2 ; Sc_1 ending opposite fork of *Rs*, Sc_2 at its tip; R_{2+3+4}

moderately arcuated, a little shorter than R_{2+3} ; R_{1+2} and R_2 subequal; cell M_1 about one-half longer than its petiole; $m-cu$ at near one-third to two-fifths the length of cell $1st M_2$.

Female. Length about 8 mm; wing 8 mm.

Described from an alcoholic specimen. Rostrum and palpi brown. Antennae of moderate length, brown; flagellar segments oval, the outer segments a very little more elongate; longest verticils subequal in length to the segments. Head dark brown, more grayish above; anterior vertex wide.

Pronotum light brown. Mesonotum almost uniformly dark brown, the lateral praescutal borders brighter; no clearly defined praescutal stripes excepting the darker median area. Pleura brown, the ventral sternopleurite darker. Halteres relatively long, yellow. Legs with the fore coxae infuscated, the remaining coxae yellow; trochanters yellow; remainder of legs broken. Wings (Fig. 13) with the ground color grayish, restrictedly patterned with pale brown clouds to produce a weak pattern, arranged as follows: Origin of R_s ; stigma; broad seams over cord and outer end of cell $1st M_2$; prearcular field slightly more yellowed; veins brown, a little more brightened in the yellowed field. Venation: Sc of moderate length, Sc_1 ending opposite fork of R_s , Sc_2 longer, at its tip; R_{2+3+4} moderately arcuated, a little shorter than R_{2+3} ; R_{1+2} and R_2 subequal; cell M_1 about one-half longer than its petiole; cell $1st M_2$ long-rectangular, with $m-cu$ at near one-third to two-fifths the length; cell $2nd A$ relatively narrow; anterior arculus lacking.

Abdomen brown, the terminal segments darker; extreme caudal borders of both tergites and sternites darkened, outer discal portions of sternites more yellowed. Ovipositor with the valves horn-yellow; cerci long and slender, gently upcurved.

Holotype, alcoholic ♀, Kambaiti, altitude 6800 feet, April 10, 1934 (MALAISE).

Pseudolimnophila kambaitiae is readily told from other described regional members of the genus by the distinctive but unusually pale and restricted wing pattern. Other species either have the wings immaculate, except for the stigma, or else have a distinct and heavy darkened pattern. The loss of the anterior arculus may indicate that the generic assignment is incorrect and that the fly may better be placed in *Austrolimnophila* ALEXANDER.