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NEW OR LITTLE-KNOWN SPECIES OF EXOTIC TIPULIDAE (DIPTERA) II

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The preceding part under this general title was published in 1943, *Proc. R. ent. Soc. Lond.* (B) **12** : 173–180. Most of the species discussed herewith are from the Netherlands East Indies and were included in collections sent to me for identification by Dr. M. A. Lieftinck. When conditions permit, the types of such novelties will be returned to Dr. Lieftinck for incorporation in the collection of one of the leading museums in Holland. The location of the other specimens will be discussed in conjunction with the forms in question.

Tipula (Acutipula) lieftinckiana sp. n.

Size large (wing, male, 20 mm.); general coloration dark brown, heavily pruinose; wings with a strong brownish tinge, veins *Cu* and *m-cu* seamed with darker; conspicuous pale obliterative areas before cord and beyond the stigma; no dark spot in cell *M*; abdomen black; male hypopygium with median appendage of ninth tergite bilobed at apex; outer dististyle broadest just beyond base; inner dististyle bearing two pairs of conspicuous black spines, its beak slender; eighth sternite with each outer lateral angle bearing a small pale lobe tufted with long setae.

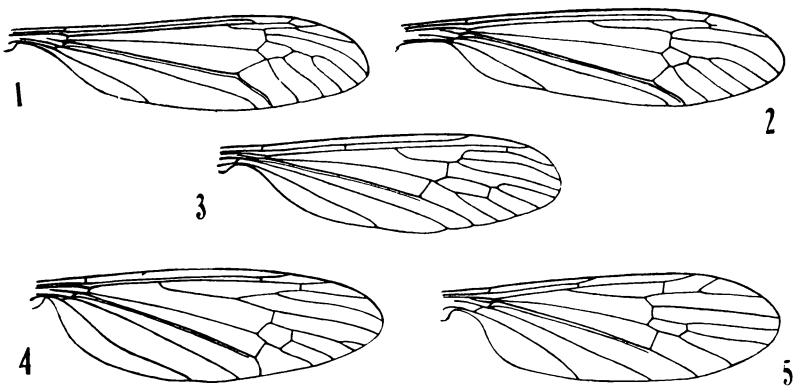
Male. Length about 18 mm.; wing 20 mm.; antenna about 3 mm.

Frontal prolongation of head relatively long, brown above, more reddish-brown beneath; nasus elongate, black; palpi black, the basal segment paler. Antennae relatively short; scape pale brown, pedicel light yellow; flagellar segments weakly bicoloured, dark brown basally, the outer portion obscure yellow; outer segments uniformly darkened; basal enlargements of segments only feebly developed; verticils exceeding the segments; terminal segment elongate-conical, about one-half the length of the penultimate. Head dark brown; vertical tubercle relatively low and inconspicuous; anterior vertex relatively wide, about three times the average diameter of the scape.

Pronotum dark brown, variegated with paler. Mesonotum chiefly dark brown, heavily pruinose, the coloration largely destroyed by water; apparently the ground colour is light grey, with darker brownish-grey stripes; posterior sclerites of notum dark brown, more or less pruinose, the scutellum and postnotum more uniformly dark; parascutella and lateral portions of scutellum somewhat paler; pleurotergite darkened. Pleura with the propleura and dorsopleural membrane pale, the mesepisternum darkened, the meral region again pale. Halteres dark brown. Legs with coxae dark brown, somewhat paler apically; femora reddish-brown, the tips brownish-black; tibiae reddish-brown, the tips somewhat more narrowly blackened; tarsi reddish-brown, passing into brownish-black. Wings (fig. 1) with a strong brownish tinge, the prearcular and costal fields somewhat more yellowish-brown; stigma long and narrow, darker brown; a restricted poststigmal whitened area, involving cell Sc_2 and adjoining portions of R_2; a much more extensive obliterative area extending from before stigma basad of cord, extending into proximal portion of cell M_3, crossing the basal third of cell *1st* M_2; broad and conspicuous brown seams along *m-cu* and distal section of vein *Cu* and less distinctly along the basal half of the main stem of *Cu* but with no darkening in cell *M*; veins dark brown, more yellowish-brown in the brightened

basal and costal portions. Venation: *Rs* shorter than *m-cu*; cell 1*st* M_2 of moderate size, its inner end only moderately pointed.

Abdomen with basal half of second tergite reddish-brown, the posterior half and broad lateral portions of the basal half brownish-black; succeeding tergites and all but the basal sternites uniformly blackened. Male hypopygium (figs. 6, 7) with the median lobe of tergite, 9*t*, relatively broad, depressed, at apex with two short lobes that are separated by a slightly narrower U-shaped notch that is fringed with delicate setulae; each lobe with abundant blackened spines to produce a macelike appearance; the surface and margin of the lobe back from apex with a few scattered spines and numerous long setae. Outer dististyle, *od*, broadest just beyond base, thence gradually narrowed outwardly, the setae chiefly marginal in distribution. Inner dististyle, *id*, with the lower beak slender; outer lobe with two powerful black spines; in axil between outer lobe and lower beak with a smaller lobe that terminates in two even longer black spines. Ventromesal portion of ninth sternite, on either side of midline, with a conspicuous brush of reddish setae that are directed



FIGS. 1–5.—1, *Tipula* (*Acutipula*) *lieftinckiana* sp. n.; venation. 2, *Tipula* (*Oreomyza*) *hoogerwerfi* sp. n.; venation. 3, *Nipponomyia nigrocorporis* sp. n.; venation. 4, *Hexatoma* (*Eriocera*) *celebesiana* sp. n.; venation. 5, *Erioptera* (*Empeda*) *baluchistanica* sp. n.; venation.

ventrad. Eighth sternite, 8*s*, sheathing, its caudal border broadly truncated, with pale membrane set with numerous setae and delicate marginal setulae; each lateral angle produced into a small pale lobe bearing a brush of much longer setae.

Holotype, ♂, Mount Leuser (Loser), east summit; Atjeh, North Sumatra; altitude 3300–3500 metres; February 1937 (*A. Hoogerwerf*).

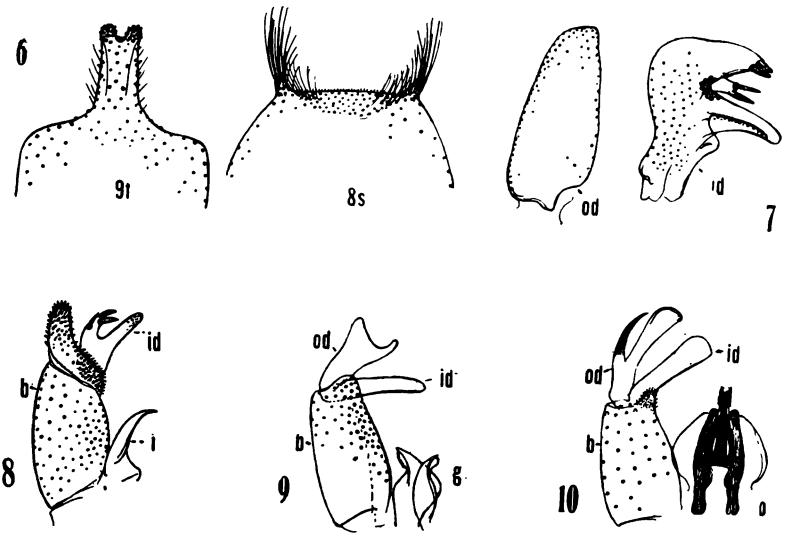
I am pleased to name this interesting fly in honour of Dr. M. A. Lieftinck, to whom I am greatly indebted for many past favours. The species is quite distinct from the other species that have been described from the Indomalayan region. These various species or subspecies include *Tipula* (*Acutipula*) *de meijerei* Edwards, *T.* (*A.*) *jacobsoni* Edwards, *T.* (*A.*) *pseudofulvipennis* de Meijere, and *T.* (*A.*) *umbrinoides* Alexander. It should be noted that these species have been placed in the synonymy of *T.* (*A.*) *quadrinotata* Brunetti, but I am very dubious of such a procedure. We now know that there are many valid species of the genus in Asia and I believe that a critical study of the structure of the male hypopygium must be made before any synonymy can be asserted. It is certain that as regards *umbrinoides* I can see little similarity between this species and *quadrinotata*, of which I have an abundance of material;

all details of venation, as length of *Rs*, shape of upper radial cells, conformation of cell 1*st* M_2, and other features, being entirely different in the two flies.

Tipula (Oreomyza) hoogerwerfi sp. n.

General coloration dark brown, the praescutum with three slightly darker brown stripes that are scarcely differentiated from the ground; antennae bicoloured; wings whitish, handsomely patterned with dark and lighter brown; tip of vein R_{1+2} atrophied; *Rs* unusually long, exceeding three times *m-cu*; abdominal tergites reddish, grey pruinose; sternites reddish, trivittate with dark brown; cerci long and slender, their margins smooth.

Female. Length about 23 mm.; wing 19 mm.; antenna about 3 mm.



FIGS. 6–10.—6, 7, *Tipula* (*Acutipula*) *lieftinckiana* sp. n.; details of male hypopygium. 8, *Nipponomyia nigrocorporis* sp. n.; male hypopygium. 9, *Erioptera* (*Podoneura*) *peregrinator* sp. n.; male hypopygium. 10, *Erioptera* (*Empeda*) *baluchistanica* sp. n.; male hypopygium.

(Symbols: *b*, basistyle; *g*, gonapophysis; *i*, interbase; *id*, inner dististyle; *od*, outer dististyle; *p*, phallosome; *s*, sternite; *t*, tergite.)

Frontal prolongation of head relatively short, brown dorsally, more blackened on sides; nasus distinct; palpi black, the incisures narrowly more reddened; terminal segment broken. Antennae with scape and pedicel yellow; basal two flagellar segments yellow, the succeeding segments bicoloured, their bases infuscated, becoming darker to almost black on the outer segments; basal enlargements only weakly developed; longest verticils a trifle exceeding the segments. Head black, sparsely pruinose, to appear blackish-grey; anterior vertex about twice as wide as the diameter of scape.

Pronotum brown. Mesonotum chiefly dark brown, the praescutum of the unique type badly bent; ground colour brown, with a sparse yellow pollen or weak pruinosity that obscures the ground; three darker brown entire praescutal stripes, the median one vaguely divided by a central vitta; praescutal interspaces with black setigerous punctures that are more or less confluent. Pleura and pleurotergite chiefly dark brown. Halteres with stem yellow, knob weakly darkened. Legs with the coxae and trochanters reddish-brown, sparsely pruinose; remainder of legs broken. Wings (fig. 2) with the ground colour whitish,

handsomely patterned with dark and lighter brown; the major dark areas lie at arculus, origin of *Rs*, fork of *Rs*, and at stigma, the latter two confluent; major paler brown areas in outer radial field, chiefly in cell R_3; before and beyond midlength of cell *M*; in outer end of cell 1*st A* and occupying most of cell 2*nd A*; most of the veins, including *M*, 2*nd A*, and all veins beyond cord with the exception of R_3, narrowly but very conspicuously bordered by dark brown; prearcular field brownish-yellow, brighter behind; cells *C* and *Sc* light brown, the latter brightening to yellow before stigma; a continuous brown marginal seam from vein R_{4+5} to *Cu*; veins yellow in the ground areas, dark brown in the infuscated portions. Macrotrichia on all veins beyond cord and for almost the whole length of *M*. Venation: Tip of R_{1+2} atrophied, with only the basal third persistent; *Rs* unusually long, exceeding three times *m-cu*; cell M_1 about three times its petiole; *m-cu* shortly before fork of M_{3+4}; cell 2*nd A* wide.

Abdominal tergites with the first blackened, more reddish on sides; succeeding tergites rich reddish-yellow, the sublateral portions dark brown, the extreme lateral margins beyond the basal rings yellowish, grey pruinose; subterminal segments narrowly dark brown; sternites reddish, conspicuously and continuously trivittate with dark brown, only the extreme caudal borders of the segments pale. Ovipositor with cerci long and slender, their margins smooth; hypovalvae very short.

Holotype, ♀, Mount Leuser (Loser), east summit; Atjeh, North Sumatra; altitude 3300–3500 metres; February 1937 (*A. Hoogerwerf*).

Tipula (*Oreomyza*) *hoogerwerfi* is dedicated to the collector of the small but interesting series of flies from Mount Leuser. Among the described regional species having heavily patterned wings, it appears to be closest to *Tipula gedehana* de Meijere, differing conspicuously in the venation, as the long *Rs* and atrophied R_{1+2}. I had earlier referred *gedehana* to the subgenus *Vestiplex* Bezzi but in the light of much confusion still existing as to the strict subgeneric characters of *Vestiplex* and *Oreomyza*, the assignment must be considered as being provisional.

Nipponomyia nigrocorporis sp. n.

General coloration uniform black, including the entire thorax and abdomen, the surface subnitidous; legs black; wings pale yellow, handsomely patterned with dark and paler brown, including a series of brown dots and spots along the cephalic half of cell *C*; cell 1*st* M_2 closed; male hypopygium with three black spines on outer lobe of the inner dististyle.

Male. Length, excluding head, about 12 mm.; wing 11·5 mm.

Head broken.

Entire prothorax and mesothorax black, the surface subnitidous; praescutum with long conspicuous erect setae on interspaces. Halteres with stem obscure yellow, the knob weakly infuscated. Legs with the coxae black; trochanters dark brown; remainder of legs brownish-black. Wings (fig. 3) with the ground colour pale yellow, handsomely patterned with brown, including about six major areas in the costal field, the first at and beyond arculus, including cells *Sc*, *R* and *M*; second area at Sc_2, including cells *C*, *Sc* and *R*; third area at and above origin of *Rs*, involving cell *Sc* above the origin, continued distad as a paler seam along *Rs* almost to its fork; fourth and fifth dark areas before and beyond the conspicuous yellow stigma, the former confluent with a somewhat paler brown seam along cord; sixth dark area including the narrow wing tip in cells R_2 to M_1, inclusive; besides the major dark areas there are further paler washes beyond the fork of *Rs*, following veins R_4 and R_5, outer end of cell 1*st* M_2, and as marginal darkenings at ends of all veins beyond the apical area, largest at 2*nd A*; a series of more than a score of brown spots and dots along cell *C*, both before and beyond the humeral cross-vein, occupying the cephalic half of cell, the posterior half clear yellow, these areas small, ill-delimited and more or less

longitudinal in position, not forming clear-cut transverse black dashes as in some allied species; before *h* the dots form a continuous streak, farther distad becoming more scattered and confluent; veins pale brown, somewhat darker in the patterned areas. Costal fringe relatively short but dense. Venation: *r-m* more than one-half its length before fork of *Rs*; cell 1*st* M_2 closed; *m-cu* before fork of *M*.

Abdomen, including hypopygium, black, the more basal sternites slightly more piceous, the extreme caudal borders of tergites four and five whitened. Male hypopygium (fig. 8) with the outer dististyle or lobe of basistyle elongate, closely applied to apex of basistyle, more or less sigmoid in outline, the surface with abundant short black spines distributed throughout the length. Inner dististyle, *id*, bifid, the inner lobe a slender simple blade, the shorter outer lobe terminating in two conspicuous black spines, with a third smaller spine on outer margin just back from tip. Basistyle, *b*, with numerous long setae, those of mesal face unusually long, yellow. Interbase, *i*, acutely pointed at apex.

Holotype, ♂, Mount Leuser (Loser), Atjeh, North Sumatra; altitude 2000–3500 metres, 30 January, 1937 (*A. Hoogerwerf*).

Nipponomyia nigrocorporis is very different from the other described species of the genus, particularly in the uniform black coloration of the body and legs. By my key to the known species of *Nipponomyia* (1935, *Philipp. J. Sci.* **56**: 551–552), the fly runs with some difficulties to *N. symphyletes* (Alexander), of Formosa, which differs conspicuously in the coloration of the body and legs. The only other species of the genus known from Sumatra is *N. sumatrana* (de Meijere), the type of which was taken in June 1917 by Edward Jacobson on Mount Talamau (Mount Ophir of Wallace and other early workers). Since the specimens were collected in June it is probable that such material was taken at or near the exact summit of Talamau (2912 metres) where Jacobson collected on 6 June, 1917. This latter fly is entirely distinct from the species herewith described as new.

Hexatoma (Eriocera) celebesiana sp. n.

Belongs to the *dichroa* group; general coloration black, abdominal segments two to six bright orange, the tergites with a narrow transverse black line immediately before apex; halteres and legs black; antennae black, the basal two flagellar segments brownish-yellow; wings conspicuously blackened; cell M_1 present; abdomen (male) flattened dorsoventrally, its greatest width about two-thirds that of wing.

Male. Length about 13 mm.; wing 11·5 mm.

Rostrum and palpi black. Antennae 7-segmented; scape and pedicel brownish-black; basal two flagellar segments brownish-yellow, the outer ones black; flagellar segments long-cylindrical, with conspicuous black setae. Head blackish-grey; vertical tubercle poorly developed.

Thorax almost uniformly blackened, the surface very sparsely pruinose; mesonotum with relatively abundant, coarse, black setae. Halteres black, the extreme base of stem brighter. Legs black throughout. Wings (fig. 4) conspicuously blackened, the basal and costal portions somewhat more intense; a pale streak in basal half of cell 1*st A* adjoining the vein; veins dark brown. Macrotrichia of veins beyond cord abundant and conspicuous, especially in outer radial field, becoming more sparse on medial veins, on M_4 restricted to two or three trichia at extreme outer end. Venation: *Sc* long, Sc_1 ending beyond mid-length of vein R_{2+3}; R_{1+2} and R_{2+3+4} subequal in length, both longer than R_{2+3}; cell M_1 present but relatively small and weak, about two-thirds its petiole; cell 1*st* M_2 short-rectangular; *m-cu* about two-thirds its own length beyond the fork of *M*.

Basal abdominal segment dark brown; tergites two to six, and the lateral portions of seven, bright orange with a narrow transverse black line just before apex of tergites two to

six, inclusive; terminal segments, including the small hypopygium, black; sternites coloured like the tergites but with the blackened lines lacking; abdomen conspicuously flattened dorso-ventrally, its greatest width about two-thirds that of the wing.

Holotype, ♂, Lonrong Wasampone, south-western Celebes, altitude 150 metres, June 1936 (*L. J. Toxopeus*); returned to Dr. Lieftinck.

Hexatoma (*Eriocera*) *celebesiana* is most similar to species such as the Chinese *H.* (*E.*) *abdominalis* (Alexander) and *H.* (*E.*) *platysoma* Alexander, where the abdomen of the male sex is similarly very wide and conspicuous. Both of these species have cell M_1 of the wings lacking. The Philippine *H.* (*E.*) *lativentris* (Bezzi) has the abdomen somewhat similarly dilated but is an entirely distinct species. By Edwards' key to the Old World species of the subgenus (1921, *Ann. Mag. nat. Hist.* (9) **8** : 70–78), the present fly runs to *H.* (*E.*) *xanthopyga* (de Meijere), which is again entirely different, with the abdomen of the male of normal form.

Erioptera (**Podoneura**) **peregrinator** sp. n.

General coloration of mesonotum buffy to grey, the praescutum with three approximated brown stripes, the lateral pair interrupted by the long black pseudosutural foveae; legs uniformly brownish-black; wings brownish-yellow, abundantly dotted with pale brown; male hypopygium with the outer dististyle broadly expanded outwardly, entirely glabrous; inner style a relatively slender, flattened blade.

Male. Length about 5 mm.; wing 5·5 mm.

Rostrum and palpi brown. Antennae relatively short, dark brown throughout; flagellar segments suboval to subcylindrical. Head grey; anterior vertex more than twice the diameter of scape.

Pronotum buffy on sides, dark brown above. Mesonotal praescutum brownish-buff, with three approximated brown stripes, the lateral pair interrupted by the long conspicuous black pseudosutural foveae; scutum grey, the lobes vaguely patterned with brown; scutellum brownish-grey, with a dark brown median dash; postnotum brownish-grey, vaguely patterned with brown. Pleura brownish-grey, including the dorsopleural membrane. Halteres infuscated. Legs with the coxae brownish-grey; trochanters brown; remainder of legs uniformly brownish-black. Wings with the ground colour brownish-yellow, abundantly dotted with pale brown, the basal portions almost as far as the general level of origin of *Rs*, cells *C* and *Sc*, and the vicinity of the cord more nearly free from pattern; extreme wing tip and cell *2nd* A_2 also nearly unpatterned; elsewhere the dots are very abundant and more or less confluent; veins brown, paler in the more brightened areas. Macrotrichia of veins beyond cord almost lacking except on R_{1+2} and tip of R_5. Venation: Sc_1 ending opposite R_2, Sc_2 almost exactly opposite midlength of *Rs*; R_{2+3} and R_2 subequal; *m-cu* oblique, more than one-third its length before the fork of *M*; the *Podoneura* cell (*2nd* A_2) moderately sprawly.

Abdominal tergites dark brown, sparsely pruinose, the median area more reddish-brown; sternites more greyish, with a brown median vitta, the extreme caudal borders of the segments more brightened; hypopygium dark. Male hypopygium (fig. 9) with the outer dististyle, *od*, broadly expanded outwardly, entirely glabrous; inner angle produced into a narrow arm, the tip obtuse. Inner dististyle, *id*, a long, relatively slender, flattened blade, the tip obtuse. Basistyle, *b*, with numerous long setae near apex and along mesal face but these sparse or lacking on basal portion of outer face. Gonapophyses, *g*, flattened, the larger outer blade terminating in a flange that bears a few obtuse teeth or crenulations.

Holotype, ♂, Central Asiatic U.S.S.R.; label (in Russian) translated reads: "Second mill, Mendeynk, Snegirev, 20 April, 1926"; Alexander Collection.

Received in exchange with Lackschewitz, who also distributed specimens to the British Museum (Natural History), through Edwards.

All other known species of the subgenus *Podoneura* Bergroth are African (Alexander, 1930, The African Republic of Liberia and the Belgian Congo, *Rept. Harvard African Expedition* 1926–1927, **2**: 1017–1018). The present fly is readily distinguished by the abundantly dotted wings and, especially, the structure of the male hypopygium.

Erioptera (Empeda) baluchistanica sp. n.

General coloration dark grey; halteres yellow; femora brown, a trifle brightened at base; tibiae and basitarsi yellow, the tips narrowly infuscated; wings greyish-yellow, the veins yellowish-brown, relatively inconspicuous; *Sc* short; vein R_3 unusually short and oblique; cell 1*st* M_2 closed; *m-cu* more than one-half its length beyond the fork of M; male hypopygium with the outer dististyle bifid, the outer arm a blackened rod that narrows to an acute spinous point; phallosome relatively large and conspicuous.

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

Rostrum dark brown, grey pruinose; palpi dark brown. Antennae brownish-black, relatively short; flagellar segments oval. Head grey; anterior vertex relatively wide, at narrowest point nearly three times the diameter of scape.

Pronotum and mesonotum almost uniformly dark grey, the pretergites a little more brownish-yellow; pseudosutural foveae and tuberculate pits black. Pleura dark grey; dorsopleural membrane brown. Halteres clear light yellow, especially the knobs. Legs with the coxae grey pruinose; trochanters obscure yellow; femora brown, a trifle brightened at base; tibiae and basitarsi yellow, the tips narrowly infuscated; remainder of tarsi passing into black. Wings (fig. 5) greyish-yellow, the stigmal region not or scarcely darker; prearcular and costal fields clearer yellow; veins pale yellowish-brown, relatively inconspicuous against the ground. Costal fringe short but dense; veins beyond cord almost glabrous; distal section of R_5 with numerous trichia over virtually the whole length. Venation: *Sc* short, Sc_1 ending about opposite one-third the length of *Rs*, Sc_2 slightly removed from its tip, at near mid-distance between origin of *Rs* and tip of Sc_1; R_{2+3+4} subequal to R_2; R_3 unusually short and oblique, cell R_3 thus being more like *Gonempeda*; distance on wing margin between veins R_{1+2} and R_3 about equal to the latter vein; cell 1*st* M_2 closed, about one-half as long as vein M_3 beyond it; *m-cu* at near one-third the length of cell, or more than one-half its own length beyond fork of M; Anal veins divergent.

Abdomen, including hypopygium, dark brownish-black, sparsely pruinose. Male hypopygium (fig. 10) with the outer dististyle, *od*, bifid, its outer arm a little shorter, appearing as a slender rod that narrows to an acute spinous point; inner arm expanded outwardly, the apex short-cultriform. Inner dististyle, *id*, a simple brownish-yellow flattened blade that has somewhat the same outline as the inner arm of the outer stylè; surface, especially the ventral edge, with a few microscopic setulae. Phallosome, *p*, relatively large and conspicuous, sclerotised and darkened, appearing about as shown.

Holotype, ♂, Quetta, northern Baluchistan, April 1931 (*Haroonkhan*); returned to the Imperial Institute of Entomology, London.

This fly is readily told from all other regional members of the subgenus by the venation, especially the short oblique vein R_3 and the closed cell 1*st* M_2. In the venation, the fly is somewhat more as in the subgenus *Gonempeda* Alexander, but from the structure of the male hypopygium it is a member of the typical subgenus.