

NEW ORIENTAL SPECIES AND RECORDS OF  
SPHAEROCERINAE AND COPROMYZINAE (DIPTERA:  
SPHAEROCERIDAE)

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Two new species of the genus *Ischiolepta* – *I. baloghi* sp. n. from India and *I. peregovitsi* sp. n. from Nepal; one new species each of *Crumomyia* (*C. topali* sp. n. from India) and *Norrbomia* (*N. nepalensis* sp. n. from Nepal); and a new subspecies of *Metaborborus flavior* (VANSCHUYTBROECK), *M. f. orientalis* ssp. n. from Nepal, are described. Several other species of the two subfamilies are reported from the Oriental region (Nepal, India, Thailand and Taiwan). With 28 original figures.

Key words: Sphaeroceridae, Sphaerocerinae, Copromyzinae, new species, taxonomy, Oriental Region

INTRODUCTION

The Oriental species of Sphaeroceridae are rather little known (HACKMAN 1977), although some significant contributions were published in the last two decades. Several genera, which formerly were thought to be Afrotropical, were reported from Oriental areas: e.g. *Lotobia* LIOY (HAYASHI 1994), *Metaborborus* VANSCHUYTBROECK (NORRBOM & KIM 1985b), *Achaetothorax* HEDICKE (PAPP & NORRBOM 1992).

Last year, extra-Palaeartic specimens of Sphaeroceridae in the collection of the Hungarian Natural History Museum were studied. Some of the results relating to species in the subfamilies Sphaerocerinae and Copromyzinae are presented below. Both subfamilies are new to Taiwan (cf. LIN & CHEN 1999).

Terminology of male genitalia follows SINCLAIR (2000) whenever possible.

My annotations of label data and those of the preservation of the specimens are given in square brackets below. The specimens are in the Diptera Collection of the Department of Zoology, Hungarian Natural History Museum, Budapest (HNHM).

SPHAEROCERINAE

*Sphaerocera curvipes* LATREILLE, 1805 – 4 males: Nepal, Royal Chitwan National Park, Bandarjholā Island – Jungle Island Resort, 84°10'E, 27°35'N, 150 m, 1995.10.30. – swept on

*Elephas maximus* dung, leg. L. Peregovits (17 specimens captured but only these four were pinned). This species is by now almost cosmopolitan, spread by the human activity, although this is its first record from Nepal (known from Kashmir in the Oriental region: ROHÁČEK *et al.* 2001).

*Sphaerocera pseudomonilis asiatica* L. PAPP, 1988(a) – 1 female: India, Calcutta, West Bengal – No. 436, 30.V.1980, leg. Topál. New to India. The subspecies of *S. pseudomonilis* (ROHÁČEK *et al.* 2001) need revision, as they may well be true species.

### **Ischiolepta baloghi** sp. n.

(Figs 1–4)

Holotype male (HNHM): India, Goomti, Darjeeling Distr. – No. 113, 20. II. 1980, leg. Topál [abdomen with genitalia in a plastic microvial with glycerol].

Measurements in mm: body length 2.00, wing length 2.17, wing width 0.74 .

Body dark, blackish brown, grey microtomentose. Head as long as high, lunule short but broad, inner vertical seta pale short, on a minute tubercle, outer vertical seta short, thick, proclinate, on larger tubercle. Three pairs of orbital tubercles with short setae just above eye: anterior one reclinate, middle one latero-clinate, posterior one proclinate. Epistoma (facial plate) pentagonal, upper triangle much higher than broad, basal part. Clypeus dark, about twice as broad as high, dull grey microtomentose. Supragena and infragena subshiny, rubbed shiny on the left side on holotype. Facial ridge with thick but only slightly flattened vibrissa 0.106 mm long, only short pale setae ventral to vibrissa. Eye round, globular.

Thorax rather short. Acrostichal setae anteriorly in 4 irregular rows, posteriorly in ca. 6 rows, dorsocentral rows distinctly though very narrowly separate from acrostichal rows, bare area between them microtomentose. Scutellum more than twice as broad as long with 8 scutellar marginal tubercles. Katepisternum with very sparse hairs ventrally (unfortunately in glue on the holotype).

Legs as dark brown as thoracic pleura. Fore coxa yellowish brown laterally, mid and hind coxae and bases of mid and hind femora yellowish. Male femora not much thickened, fore femur 0.138 mm thick, hind femur without a tubercle, 0.112 mm thick at thickest, i.e. fore femur 1.23 times as thick as hind femur, hind femur and tibia almost straight, *not* bent dorsally. Ventral spur on apex of hind tibia thick black but only half as long as diameter of tibia subapically.

Wings not hyaline but light brownish, veins light brown. Knob of halteres ochre.

Preabdomen strongly sclerotized dark brown. Male tergite 1+2 large, almost twice as long as T3, T4 slightly longer than T3, tergite 5 symmetrical, ca. 4 times as broad as long, and less than 1/2 of length of T4, medially without the slightest sign of weakening. All sternites shorter than broad with a pair of blunt marginal setae, sternite 4 half as long as broad, sternite 5 slightly asymmetrical and as long and half as broad as tergite 5.

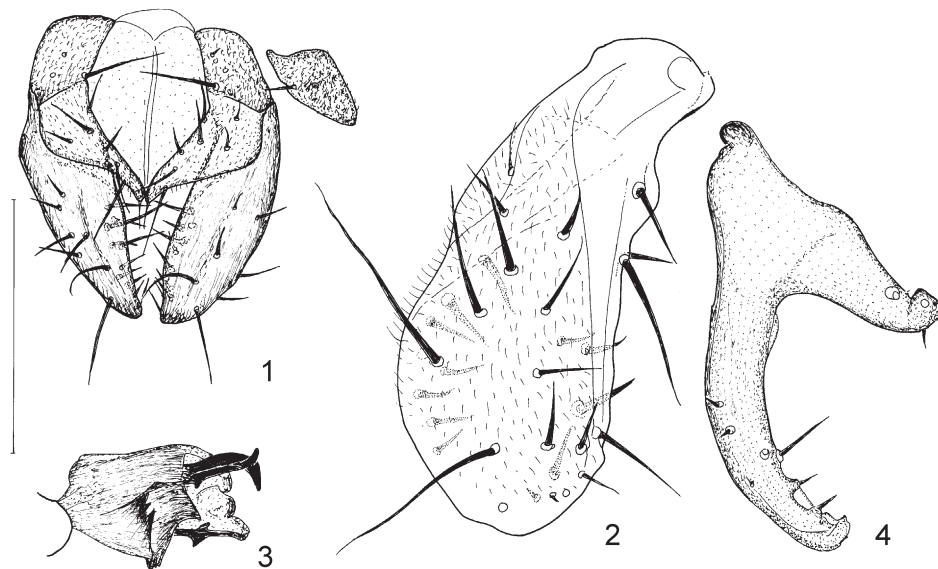
Male terminalia (Figs 1–4) and postabdomen comparatively short but broad. Hypandrium normal. Periandrium (of ROHÁČEK & PAPP 1984, in all probability ventral/posterior part of epandrium, cf. ROHÁČEK 1998: 465) in two lateral parts (Fig. 1), trapezoidal with 1 long seta, partly fused with cerci (pseudocerci of ROHÁČEK & PAPP 1984). Cerci basally broad, projecting downward to about middle of surstyli, apically much narrowed but not pointed, subapically with a pair of long but not thick setae, otherwise with a number of medium-long setae. Surstylus (Fig. 2) without from medially to anterally torn part on caudal edge as in *I. pusilla*. Surstylus in broadest extension broadly rounded apically but not narrow even basally, slightly asymmetrical (at least on the holotype, Fig. 1), lateral surface with several long and medium-long setae, medial surface with even more medium-long setae.

Postgonite (Fig. 4) very characteristic with its long, curved, but apically blunt apical process, and comparatively slender, almost unarmed basal process. Apical process with two short subapical and one longer submedial setae. Distiphallus (Fig. 3) in contrast to *I. pusilla*, with no apical tubuliform processes, its sclerotized pair of processes comparatively thin and very asymmetrical.

Female unknown.

*Ischiolepta baloghi* sp. n. runs to the species group of *I. pusilla* in the key of HAN and KIM (1990): thoracic dorsum normal, body not as small as in *scabricula* or *minuscula*, outer vertical seta small and sitting on a small tubercle, mesonotal setae originate on very weak tubercles, epistoma and clypeus dark, genal area not distinctly granulated, mesonotum microtomentose, male hind femur without a small ventral tubercle, and acrostichals in 4 or more irregular rows. Its male genitalia are characteristic with a broad surstylus, a distiphallus (Fig. 3) with no apical tubuliform processes, and a pair of comparatively thin, very asymmetrical sclerotised processes, only one of which is hooked upwards. Its postgonite is markedly different from that of both *I. pusilla* and *I. vaporariorum*.

**Etymology.** This species is dedicated to the honour of the late Professor JÁNOS BALOGH, master of generations in Hungarian zoology, incl. both the collector and the author of this new species.



**Figs 1–4.** *Ischiolepta baloghi* sp. n., holotype male, genitalia: 1 = terminalia caudally with caudal end of right hypandrial arm, 2 = surstylus, broadest extension, 3 = distiphallus, lateral view, 4 = postgonite, widest (nearly lateral) view. Scales: 0.2 mm for Figs 1, 3, 0.1 mm for Figs 2, 4

***Ischiolepta peregovitsi* sp. n.**  
(Figs 5–9)

Holotype male (HNHM): Nepal, Royal Chitwan National Park, Bandarjholra Island – Jungle Island Resort, 84°10'E, 27°35'N, 150 m, 1995.10.30. – swept on *Elephas maximus* dung, leg. L. Peregovits [abdomen with genitalia in a plastic microvial with glycerol, left wing though intact, glued on the card below specimen].

Paratypes: 2 females (HNHM): same data as for the holotype [abdomen of one of them in a plastic microvial with glycerol].

Measurements in mm: body length 1.96 (holotype), 2.04–2.26 (paratype females), wing length 1.70 (holotype), 1.70–1.87 (paratypes), wing width 0.64 (holotype), 0.64–0.69 (paratypes).

Body dark brown with rather weak shine, legs ochre or light brownish yellow.

Head as long as high; lunule comparatively small, inner vertical setae indistinct, outer vertical setae short, thick, on small tubercles, 2 pairs of comparatively short proclinate upper orbital (fronto-orbital) setae on weak tubercles. Epistoma (facial plate) pentagonal, granulated, upper triangle only as high as broad basal part. Clypeus more than twice as broad as high. Epistoma and clypeus light brown, i.e. contrasting gena, etc. Supragena, infragena and facial ridge subshiny, definitely granulated; facial ridge with thick but only slightly flattened vibrissa (0.07 mm long on holotype), sub-vibrissal hairs minute. Eye subspherical.

Thorax not long, mesonotal setae sparse and rather strong. Acrostichal setae in 2 rather well-ordered rows on anterior half of mesonotum, in 4 irregular rows prescutellarly; dorsocentral rows distinctly separate from acrostichal rows, bare area between them dark microtomentose. Scutellum twice as wide as long with 8 scutellar marginal tubercles, medial tubercles somewhat reduced, smaller than lateral 3 pairs. Katepisternum with very sparse hairs ventrally.

Legs light, brownish yellow or ochre. Male fore femur very thick, 0.603 mm long and 0.195 mm thick, mid femur 0.117 mm thick, hind femur 0.258 mm thick, i.e. 2.21 times as thick as mid femur and 1.32 times as thick as fore femur; both hind femur and tibia bent dorsally. Hind tibia with a normal ventroapical spur, which is comparatively short and not thick, only half as long as tibial diameter subapically, i.e. shorter and thinner than in *I. orientalis* or in *I. draskovitsae*. Also this new species possesses a short sharp perpendicular spur posteriorly on the tibial apex.

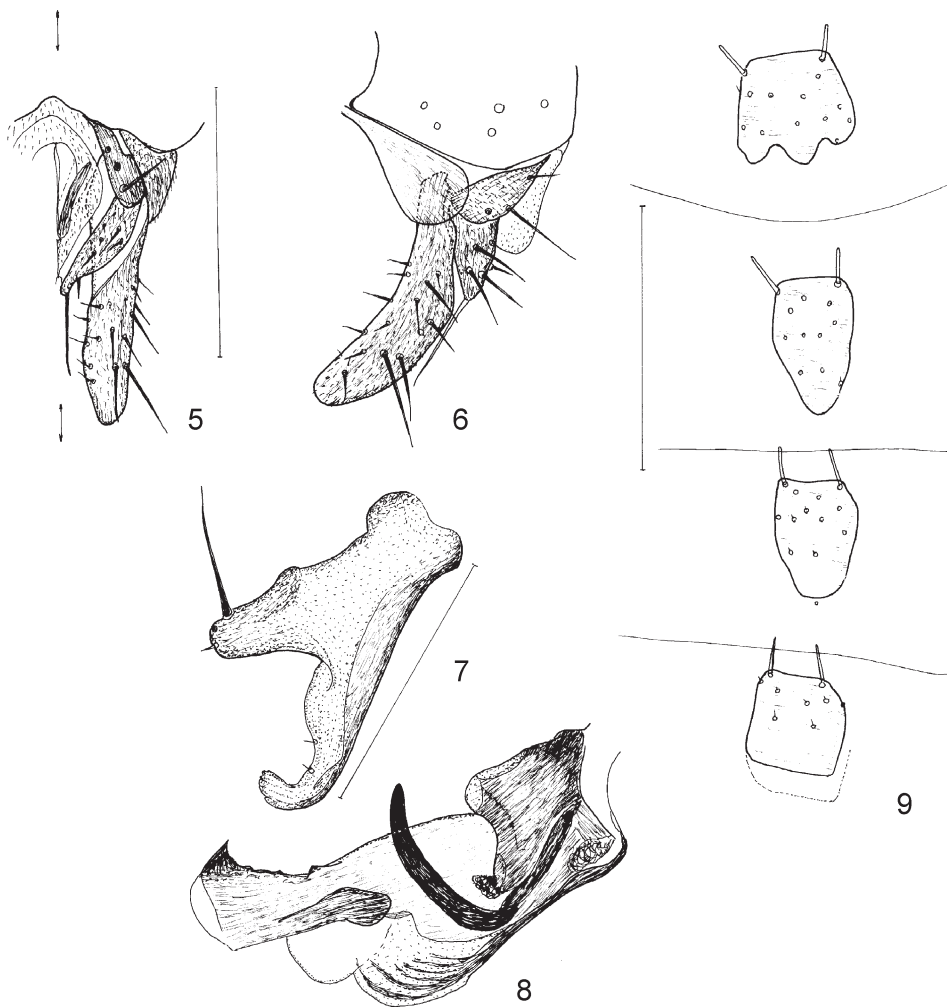
Wings not hyaline but light brownish, veins yellow, costal vein ochre. Apex of  $R_{4+5}$  only slightly upcurved, apex of M slightly downcurved, consequently apices divergent. Halteres yellow.

Preabdomen strongly sclerotized. Male tergite 1+2 large as usual, tergites 3 and 4 transverse rectangular. Both tergite and sternite 5 very short, tergite 5 not weakened medially.

Male terminalia (Figs 5–8) not large, symmetrical, postabdomen largely hidden under tergite 5. Hypandrium with normal subepandrial part. Surstylus (Figs 5–6) about as long as in *draskovitsae* but less long than in *orientalis* with blunt or even rounded apex, medial edge with short setae, in profile surstylus slightly proclinate, lateral surface with one long and several medium-long setae. Cerci comparatively long and narrow, seemingly separated from periandrium, projecting downward to less than middle of surstyli, apically more narrowed but not pointed, with a pair of long and rather thick setae, and also with some other long and medium-long setae. Periandrium in form of a pair of narrow sclerites with 2 pairs of rather long setae. Postgonite (Fig. 7) not much similar to that of its congeners, apical process straight with a rather short, blunt curved apical part, basal process massive with a long subapical seta. Distiphallus (Fig. 8) somehow similar to that of *I. draskovitsae* (cf.

ROHÁČEK & PAPP 1984: fig. 6), however, apical tubuliform process shorter with a definite, well-sclerotized dorsal apex, lateral processes (hooks) slender, extremely curved, i.e. directed dorsally.

Female tergite 1+2 laterally 1.4 times as long as T3, T4 only slightly longer than T3, T5 only 1/2 of the length and breadth of T4, tergite 5 and sternite 5 not divided, without even a sagittal emargination (depression). Sternites 2–5 (Fig. 9) with a pair of long blunt and thick setae. Sternite 2 subquadrate, sternite 3 much longer than broad with rather straight caudal edge, sternite 4 longish, rather pentagonal, sternite 5 almost as long as broad, caudally with 2 emarginations. Female



**Figs 5–9.** *Ischiolepta peregovitsi* sp. n.: 5–8 = holotype male, genitalia: 5 = right surstylus and cercus, caudal view, 6 = left face of terminalia laterally (both 5 and 6 with caudal part of hypandrium), 7 = postgonite, broadest extension, 8 = distiphallus, lateral view. 9 = female paratype, preabdominal sternites, ventral view. Scales: 0.4 mm for Fig. 9, 0.2 mm for Figs 5–6, 0.1 mm for Figs 7–8

postabdomen as long as preabdomen when exposed. Two globular spermathecae, sclerotized duct shorter than spermatheca itself. Cercus with 2 medium-long subapical hairs dorsally and laterally, as well as a long apical hair.

*Ischiolepta peregovitsi* sp. n. keys to couplet 8 in the key of HAN and KIM (1990): thoracic dorsum normal, body not as small as in *scabricula* or *minuscula*, outer vertical seta minute and sitting on a minute tubercle, mesonotal setae originate on dorsum, i.e. not on tubercles, epistoma and clypeus light brown, not dark, so it is closer to *I. orientalis* and *I. draskovitsae*, rather than to the rest of the *Ischiolepta* species. Indeed, I think, its closest relative is *I. orientalis* (DE MEIJERE). As for the relative thickness of fore to hind femur, it is transitional between *draskovitsae* and *orientalis*: hind femur 1.2. times as thick as fore femur. Its male genitalia, although structurally similar to those of the two related species, in details of surstylus, postgonite and distiphallus are also rather characteristic.

Etymology. I name this new species after my dear colleague, LÁSZLÓ PEREGOVITS (Department of Zoology, HNHM), the collector of the type specimen and many other interesting sphaerocerids on elephant dung in Nepal.

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*Lotobia* spp. – Dr TOSHIHIKO HAYASHI and I found five new species in the Oriental region, where *Lotobia* was not recorded earlier than HAYASHI (1994). They will be described in a separate paper co-authored with T. HAYASHI (cf. HAYASHI 1994), including one male specimen of a new species from Taiwan (Pingtung Hsien, Kenting National Park, grassy hillside, on cow pats, October 5, 2000, leg. L. Papp, No. 17), which represents the first record of this subfamily of Sphaeroceridae from that Oriental island.

#### COPROMYZINAE

*Achaetothorax malayensis* L. PAPP et NORRBOM, 1992 – 1 male, 2 females: Thailand: Kaeng Krachan (Phetchaburi), leg. L. & S. MAHUNKA – Kaeng Krachan National Park, 7 Feb. 1994, No. 51 (fresh cattle dung). Body characteristics are the same as published in its original description (cf. PAPP & NORRBOM 1992). Much to our satisfaction, the features of the male genitalia fit well not only in their key, but also in the cladistic analysis published by NORRBOM & PAPP (1994), i.e. we managed to determine its relegation correctly based just on the characteristics of the female body.

***Crumomyia topali* sp. n.**  
(Figs 10–13)

Material studied (HNHM): holotype male: India, Daitari, Jajpur-Keonjhar – 1–5.I.1967., leg. Topál.

Paratype male (HNHM): *ibid.*, 31. XII. 1966. [left first flagellomere lost, abdomen with genitalia in a plastic microvial with glycerol, left wing of the specimen prepared between two pieces of cover glass glued to a paper card, below the specimen].

Measurements in mm: body length 2.70 (holotype), 3.19, wing length 2.60 (holotype), 3.32, wing breadth 1.03 (holotype), 1.33.

General colour dark to black; some parts of body with brownish grey microtomentum.

Head slightly longer than high. Head with frons broad, frons mostly dark microtomentose, only orbital plates and narrow frontal triangle shiny.. Lunule microtomentose. Face (prefrons) shining black, with relatively deep and strongly microtomentose antennal concavities. Interantennal tubercle red. Parafacialia black, with glossy black margins. Vibrissal angle reddish microtomentose. Gena at genal seta 0.3 as high as longest eye diameter. Gena with a subquadrate microtomentose area on and above peristoma, which widens apically up to almost eye margin. Occiput and postgena black, wholly microtomentose. All cephalic macrosetae relatively thin; a pair of small postocellar setulae only; outer and inner verticals long and subequal to ocellars in length; 2 subequal (or posterior slightly longer), closely set, laterocline orbitals; 6 fine interfrontals subequal in length; numerous additional setulae between orbits and interfrontalia, and a series of small, mostly laterocline setulae on orbits. Vibrissa long, subvibrissa about one-third of its length and much thinner. Genal seta well-developed, long; peristomal setulae numerous and fine, postoculars numerous and unarranged. Eye not reduced, slightly oval, its longest (oblique) diameter about 1 1/3 times as long as shortest. Scape and pedicel black, first flagellomere rounded, dirty red to reddish brown. Arista long, about 4 times as long as antenna, with long cilia.

Thorax black, dorsally mostly (except notopleuron and scutellum) dark microtomentose. Pleura bare, microtomentose pattern most resembling that of *Crumomyia fimetaria* (MEIGEN, 1830), i.e. microtomentose only behind halteres and on metanotum. All characteristic setae of mesonotum long and thin: 1 proepisternal, 2 notopleural (anterior definitely longer than posterior), 1 short supra-alar and 1 very long postalar, 1 long presutural, 1+2 relatively weak dorsocentrals, 4 irregular rows of sparse and fine acrostichal setulae, 2 very long scutellars (basal only slightly shorter than apical, no additional scutellars). Propleuron finely setulose, anepisternum without setae. Katepisternum with 4–5 fine pale setulae at dorsal margin.

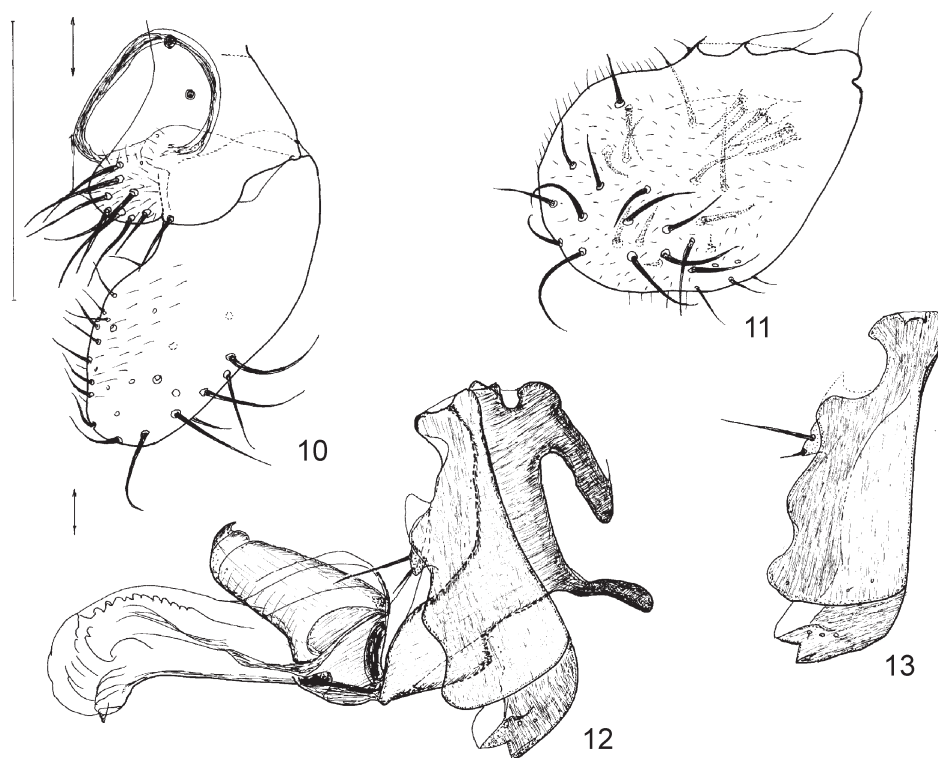
Legs as in *fimetaria*, black, but trochanters, knees, apices of tibiae, and tarsi yellowish. Fore femur somewhat thickened, with longer but hair-like setae in posteroventral and posterodorsal rows. Mid femur with 4 thick preapical setae and with a number of hair-like setae ventrally. Hind femur as in *fimetaria*. Fore tibia with 1 short dorsal preapical seta and ventroapical brush of dense, darker brown setulae. Mid tibia with usual subapical crown of setae, 6 rather thick anterodorsal setae, 1 strong anteroventral seta at apical 2/7, and 1 much weaker posteroventral seta opposite or slightly distal to anteroventral. Hind tibia with the usual dorsal preapical seta, without an anteroventral seta but with 2 apical spurs (the anterior short, the ventral strong, curved, about as long as tibial width). Fore and hind basitarsi with a well developed, small, black ventroapical hook, hind basitarsus and 2nd hind tarsal segment with dense ventral brush of dark brown hairs.

Wing normal with normal venation; membrane and veins unicolorous light brownish, but both cross-veins brown infuscated, R-M more strongly so. Costal vein dark brown distally to R<sub>1</sub>, veins otherwise lighter brown. Wing vein ratios: C-index (paratype) = 1.692 mm / 0.577 mm = 2.93, M vein

index =  $0.923 \text{ mm} / 0.88 \text{ mm} = 1.05$ , dM-Cu 0.295 mm, R-M-dM-Cu / dM-Cu ratio 3.13. Vein stub of Cu posterior to discal cell 0.07 mm long. Haltere dirty yellow, knob usually darker than stem.

Abdomen with well-sclerotized preabdominal sclerites. Terga black, broad, rather shiny, with fine setulae longest at lateral margins. Preabdominal sterna comparatively narrow, like in *fimetaria*, sterna 2–5 of almost equal breadth, 5th sternum unmodified. Postabdominal sclerites well-sclerotized, dark; 6th and 7th sterna strongly asymmetrical and fused as in congeners, 8th sternum also asymmetrical and relatively short, dorsally strongly convex and partly bare.

Male genital morphology is similar to that of *C. fimetaria* and *C. roserii*. Epandrium strongly convex, with the usual ventral lateral cleft and densely uniformly haired, without extremely long setae. Cerci distinct but fused with epandrium (Fig. 10) and medially well separated, each with a number of long and almost straight hair-like setae and a number of fine setulae. Subepandrial sclerite well developed (Fig. 10). Surstylus (Fig. 11) broad and round in broadest extension, in this view anterior border not broken (as in *C. roserii*), practically no apex on surstylus (cf. fig. 105 of *C. fimetaria* of NORRBOM & KIM 1985a); lateral surface in apical half covered by medium long setae, i.e. no such setae in basal half (cf. figs 100 and 105 of NORRBOM & KIM 1985a). Hypandrium as in congeners. Aedeagal complex (Fig. 12) of the *C. fimetaria*-subgroup type, resembling that of *C. fimetaria* but



**Figs 10–13.** *Crumomyia topali* sp. n., paratype male, genitalia: 10 = right half of terminalia caudally, 11 = surstylus, broadest extension (setae on inner (medial) surface not depicted), 12 = phallus and postgonite, lateral view, 13 = postgonite laterally. Scale: 0.2 mm for all



differing as follows: basiphallus somewhat more slender with thicker and straight epiphallus (resembling more to that of *C. roserii*), pre-epiphallus arising rather distally (similar to *C. fimetaria* but contrary to *C. roserii*) but stronger than in *C. fimetaria*. Distiphallus with differently formed paired dorsal hooks. Postgonite with broader apical part in profile, i.e. the lobe dorsal to it projects only slightly more anteriorly (Fig. 13), seta on lateromedial edge seems longer than that of *C. fimetaria*. Ejaculatory apodeme rather slender, situated in posterodorsal opening of phallosome.

Female unknown.

**Discussion.** This new species is a member of the *Crumomyia setitibialis*-group, *fimetaria* subgroup sensu NORRBOM and KIM (1985a: 184). Based on similarities in the male genitalia, it appears intermediate between *Crumomyia roserii* (RONDANI, 1880) and *C. fimetaria* (MEIGEN, 1830), which are consequently its sister-species. All these species share similar, very small (if any) microtomentose pattern on anepisternum, only a few setae on dorsal part of katepisternum, no additional marginal setae on scutellum, male femora, tibiae and abdominal membrane with rather short setae, hind tibiae without an anteroventral seta, and similar structure of inner male genitalia. However, with its bare scutellum, similar colouration of legs, and details of genital structures, the new species seems closer to *C. fimetaria*. Indeed, only details of genital structures, described above, differentiate this species from *C. fimetaria* (Figs 10–13, cf. NORRBOM & KIM 1985a: figs 105–106).

The new species, like *C. fimetaria*, is terricolous but probably not cave-dwelling.

The genus *Crumomyia* MACQUART is new to the Oriental region.

### ***Metaborborus flavior orientalis* ssp. n.**

(Figs 14–23)

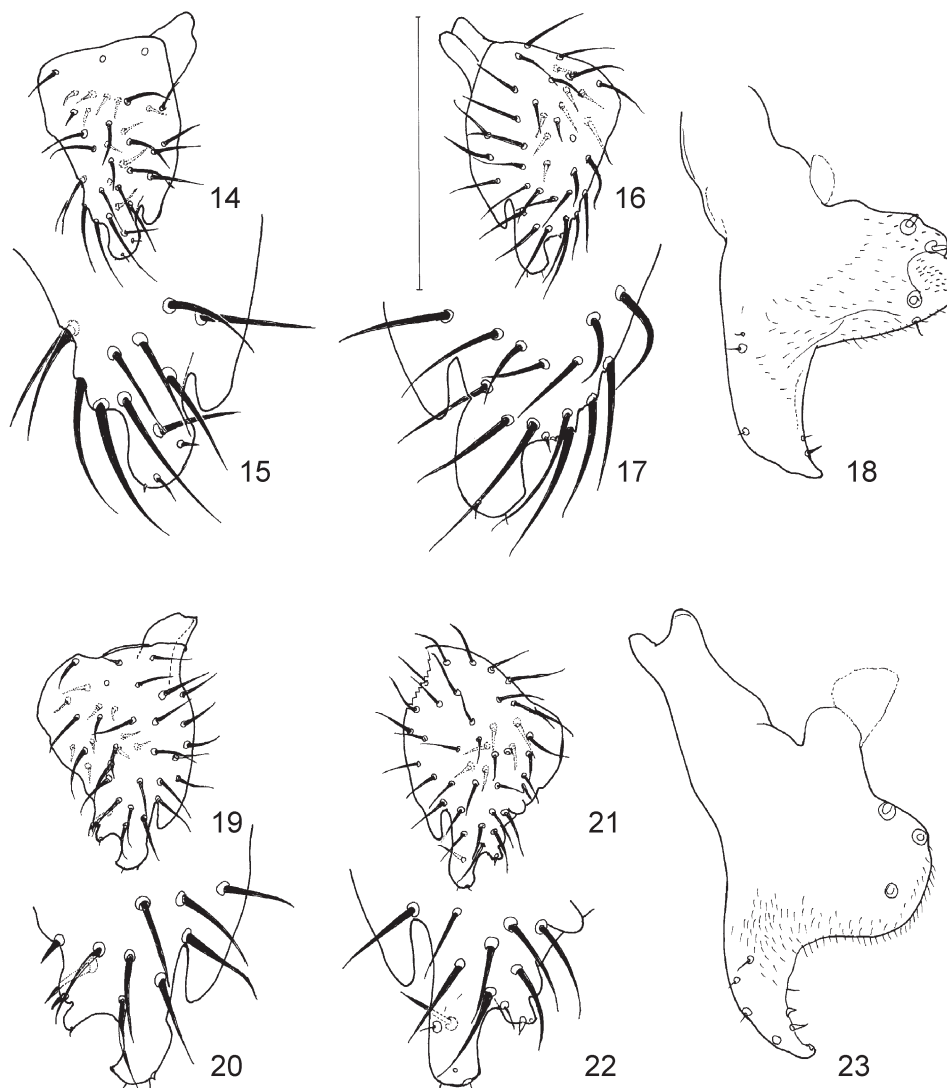
**Holotype male (HNHM):** Nepal, Royal Chitwan National Park, Bandarjholia Island – Jungle Island Resort, 84°10'E, 27°35'N, 150 m, 1995.10.30. – swept on *Elephas maximus* dung, leg. L. Peregovits [abdomen with genitalia in a plastic microvial with glycerol, left hind leg glued on the card below]. **Paratype female (HNHM):** data same as for holotype.

Measurements in mm (measured in alcohol before minuten-pinning): body length 1.34 (holotype), 1.55 (paratype), wing length 1.38, 1.34, wing width 0.53, 0.60.

Body characteristics are the same as in *M. flavior* (VANSCHUYTBROECK), though thorax and abdominal tergites seem darker brown than the African specimens.

Head all bare, shiny, without antenna slightly longer than high (0.30 vs 0.29 mm), vibrissa 0.207 mm long, arista 0.26 mm long, longest rays of arista 0.048 mm. Ocellars in line of anterior ocellus, consequently lateral to the line from anterior to posterior ocelli, postocellars slightly anterior to verticals, 4 interfrontal pairs. Gena extremely narrow, height only 1/9 height of eye.

Mesonotum mostly bare, shiny. 1+2 pairs of dorsocentrals, anterior dorsocentrals longer than prescutellars. Two acrostichal rows.



**Figs 14–23.** *Metaborborus* spp., male genitalia. 14–18 = *M. flavior orientalis* ssp. n., holotype: 14 = left surstylus, broadest extension, 15 = apex of left surstylus, higher magnification, 16 = right surstylus, broadest extension, 17 = apex of right surstylus, higher magnification, 18 = postgonite, broadest extension. 19–23 = *M. flavior* (VANSCHUYTBROECK, 1959), Tanzania: 19 = left surstylus, broadest extension, 20 = apex of left surstylus, higher magnification, 21 = right surstylus, broadest extension, 22 = apex of right surstylus, higher magnification, 23 = postgonite, broadest extension.  
Scales: 0.2 mm for Figs 14, 16, 19, 21, 0.1 mm for Figs 15, 17, 20, 22 and Figs 18, 23, respectively

Femora and tibiae shiny, bare. No posteroventral seta on mid tibia. Hind femur extremely thick in both sexes, 0.40 mm long and 0.10 mm thick in holotype, longest dorsal seta 0.11 mm, ventral spur 0.10 mm, seta proximal to spur 0.12 mm long. Wing evenly infuscated light brown, veins light brown, M vein ratio 0.414/0.362 mm, i.e. 1.143, lower edge of discal cell rounded.

Abdominal tergites 3–5 pruinose. Male surstyli asymmetrical (Figs 14–15 vs 16–17, etc). Surstyli (Figs 14–17) with more numerous and longer setae on apical part than in *M. flavior* (African specimens, e.g. ours from Tanzania, Figs 19–22). Left surstylus with shorter and more rounded medial subapical process (Figs 14–15, cf. Figs 19–20), apical process also broader and widely rounded apically, contrary to that of *M. flavior*, practically there is no lateral subapical process in the new subspecies, unlike *M. flavior*. Right surstylus (Figs 16–17, cf. Figs 21–22) with somewhat shorter medial subapical process, apical process slightly latero-clinate (straight and almost parallel-sided in *M. flavior*) practically no lateral subapical process, (a definite process in *M. flavior*). Postgonite (Fig. 18) with a broader apical part viewed when seen in its broadest extension, compared to *M. flavior* (Fig. 23).

Female abdominal tergites less broad than abdomen, i.e. membranous parts are also visible dorsally. Three long hair-like setae on cercus, longest one 0.216 mm long.

NORRBOM and KIM (1985*b*) produced an excellent key to the *Metaborborus* species. This new form keys readily to *M. flavior*. However, the differences in details of its genitalia (surstyli, postgonite) do not allow us to name it simply as *M. flavior*. In several other groups of sphaerocerid flies, the measure of differences found would be sufficient to name it as a separate species. However, since NORRBOM and KIM (1985*b*) did not separate their specimen from Tambunan (Sabah) specifically from the African ones, I prefer to describe the Asian specimens as a subspecies only, awaiting more material and application of more biologically reliable methods, other than morphological ones, to evaluate the differences.

*Norrbomia indica* L. Papp, 1988 – 40 males, 17 females (HNHM): Nepal, Royal Chitwan National Park, Bandarjholra Island – Jungle Island Resort, 84°10'E, 27°35'N, 150 m, 1995.10.30. – swept on *Elephas maximus* dung, leg. L. Peregovits; 32 males, 9 females (HNHM): Taiwan: Pingtung Hsien, Kenting National Park, grassy hillside, on cow pats, October 5, 2000, leg. L. Papp, No. 17. A species new to Nepal and Taiwan.

In the World Catalogue of Sphaeroceridae (ROHÁČEK *et al.* 2001), NORRBOM elevated the varietal name *sordidus* var. *tropicus* DUDA, 1923 to species and formally designated a lectotype with label data identical to the holotype for my species *N. indica* L. PAPP, 1988. There are a number of reasons why the name *tropicus* cannot be used and why the lectotype designation cannot be accepted. DUDA, in 1923 identified a series of specimens from Abyssinia and East India as *sordidus* (ZETTERSTEDT, 1847). When I examined the series that is housed in the Hungarian Natural History Museum, it was apparent to me that there were two species, neither of which was *sordidus* ZETTERSTEDT. I described the specimens from India as *N. indica*, and the specimens from Abyssinia as *N. demeteri* L. PAPP, 1988. I was un-

able to use the name *tropicus* for either of the species because I regarded it as unavailable according to the Code (Third edition, Article 12(a.)). There is a definite ruling about infrasubspecific names in the International Code Z. N., Fourth Edition, Article 45.6.4.1., which says that if an infrasubspecific name had not been "...either adopted as the valid name of a species or subspecies or was treated as a senior homonym" before 1985, that remains infrasubspecific. In fact, neither DUDA himself, in 1938, nor HACKMAN in 1977 accepted the name *tropicus*, this notwithstanding the fact that DUDA had recognised the said series of specimens as different from typical *sordidus*. His description of the variety *tropicus* is not sufficient to enable any subsequent worker to differentiate it from either *sordidus* or *marginatis* ADAMS, 1905. Also, he did not label any specimens as var. *tropicus*. I consider NORRBOM to have been incorrect in raising the status of *tropicus* to species. Furthermore, NORRBOM did not examine any of this material, nor did he label any specimen as lectotype. This is not the accepted practice in lectotype designation (ICZN, Fourth Edition, Article 74 particularly 74.1, 74.7) even if he were correct in his interpretation of the status of the species in question.

For these reasons, I propose that the name *N. indica* L. PAPP, 1988 remains the valid species name and should not have been sunk as a synonym of *tropicus* DUDA. I also propose that the name *tropicus* is in fact an unavailable name.

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*Norrbomia marginatis* (ADAMS, 1905) – 1 male (HNHM): Nepal, Royal Chitwan National Park, Bandarjholā Island – Jungle Island Resort, 84°10'E, 27°35'N, 150 m, 1995.10.30. – swept on *Elephas maximus* dung, leg. L. Peregovits; 28 males, 4 females: Taiwan: Pingtung Hsien, Kenting National Park, grassy hillside, on cow pats, October 5, 2000, leg. L. Papp, No. 17. A species new to the fauna of Taiwan (cf. PAPP 1988b).

***Norrbomia nepalensis* sp. n.**  
(Figs 24–28)

Holotype male (HNHM): 1 male (HNHM): Nepal, Royal Chitwan National Park, Bandarjholā Island – Jungle Island Resort, 84°10'E, 27°35'N, 150 m, 1995.10.30. – swept on *Elephas maximus* dung, leg. L. Peregovits [abdomen with genitalia in a plastic microvial with glycerol].

Measurements in mm: body length 1.57, wing length 1.66, wing breadth 0.64.

Head black, mostly shiny, occiput and all of posterior surface of head grey microtomentose. Frontal triangle to lunule, and all orbitalia, shiny, area between them strongly and rather darkly microtomentose. Facial plate, except for a marginal (supraclypeal) band, grey microtomentose. Two vertical pairs, ocellars as well as 2 laterocline fronto-orbitals, comparatively long, postocellars very weak, postocular setulae in 1 row. Four minute *ifr* pairs. Vibrissa medium-long, as long as fore

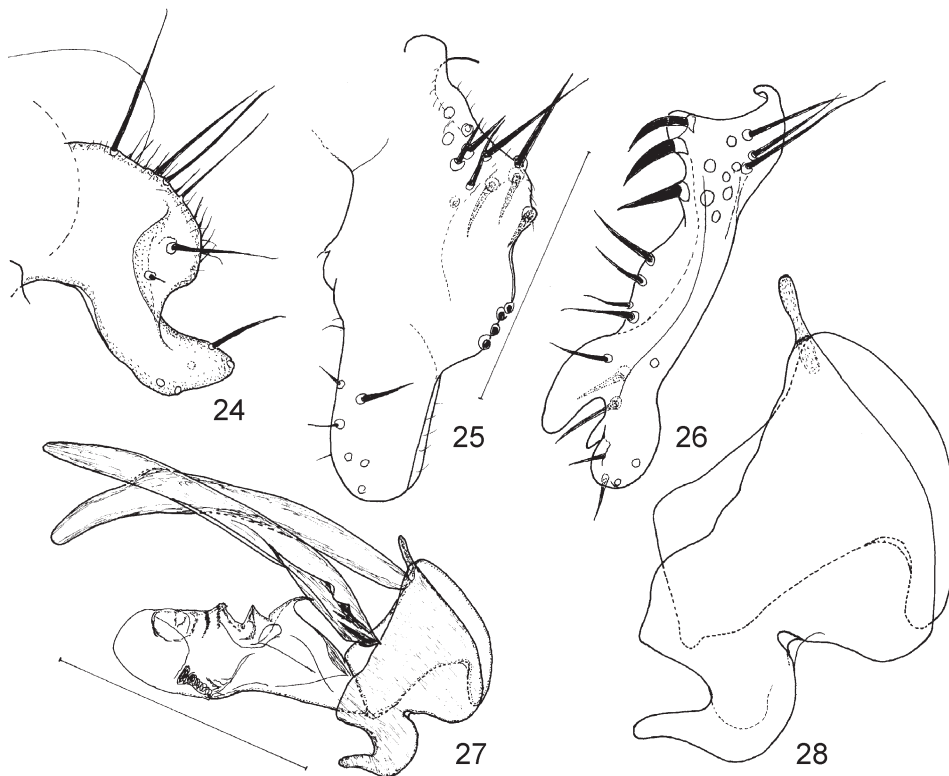
metatarsus. Gena with a medial microtomentose stripe, i.e. subocular and peristomal part shiny. Antenna actually not lighter than head, but seemingly so, by virtue of its covering of dense short grey hairs. Arista as long as diameter of vertex.

Thorax all black, bare, shiny. 1+2 dorsocentral pairs. Two rather well-ordered rows of acrostichal microchaetae.

Mid tibia with strong anterodorsal seta. Fore metatarsus with the usual medial ventroapical hook. Ventroapical spur on hind tibia 0.13 mm long, dorsal preapical seta 0.155 mm.

Wing almost hyaline, with only a very faint yellowish hue. Veins light yellow. Costal vein thickened, 0.034 mm thick distal to  $R_1$ , longest costal fringe 0.043 mm long.

Male preabdomen shiny black, without any peculiarities. Male cerci (Fig. 24) as usual, apical third however thick, curved dorsally (dorsocaudally), subapically with a medium-long seta. Basal part with a number of long, rather straight setae. Surstylus (Figs 25–26) “misleading” in lateral view: its bifid apical part hardly appears bipartite and the strong mediocaudal setae, being perpendicularly oriented, do not appear as setae. Caudal view reveals the bifid apical part of the surstylus. Medial lobe bare, blunt and evenly narrowly rounded apically, lateral lobe medio-basally with an additional small lobe, mediocaudal part with 4 strong setae, basal part latero-caudally with some long straight setae,



**Figs 24–28.** *Norrbomia nepalensis* sp. n., holotype male, genitalia. 24 = cercus laterally, 25–26 = surstylus: 25 = laterally and 26 = caudally, 27 = inner genitalia, lateral view, 28 = basiphallus and postgonite, higher magnification. Scales: 0.2 mm for Fig. 27, 0.1 mm for Figs 24–26, 28

medially with 3 curved extremely thick thorn-like setae. Aedeagal apodeme and anterior apodeme of hypandrium long, as in other species of *Norrbomia*, basiphallus (Figs 27–28) with a blunt, rather thick epiphallus. Distiphallus without peculiar processes. Postgonite (Fig. 28) very high with a large, anteriorly curved ventral process.

Female unknown.

*N. nepalensis* sp. n. is easily differentiated from the known Oriental species (see key below) and it keys to *N. sarcophaga* L. PAPP in the key to the Afrotropical species. The other two species in the Afrotropical key with shiny black mesonotum, i.e. *N. utukuruensis* (VANSCHUYTBROECK) and *N. gravis* (ADAMS) are not closely related, since they have 4 or 5 pairs of dorsocentrals, while there are only 3 pairs of *dc* in this new species. The male genital parts are also very different. With its completely shiny thorax, this new species has no relatives in the Palaearctic region (cf. key of PAPP & ROHÁČEK for the Israeli Sphaeroceridae).

#### KEY TO THE ORIENTAL SPECIES OF NORRBOMIA L. PAPP

- 1 (2) Mesonotum and episterna strongly shiny. 1+2 *dc* pairs *N. nepalensis* sp. n.
- 2 (1) Mesonotum and almost all episterna heavily microtomentose. One strong posterior *dc* pair only
- 3 (4) Gena with a linear bare area only below eye *N. marginatis* (ADAMS, 1905)
- 4 (3) Gena with a broader or triangular bare area below eye
- 5 (6) Episterna wholly grey microtomentose. Male postgonite with two blunt anterior apices (PAPP 1988*b*: fig. 17), surstylus in lateral view with less broad base and broader, definitely bifid apical part (PAPP 1988*b*: 16)  
*N. indica* L. PAPP, 1988
- 6 (5) Katepisternum with a shiny black spot. Male postgonite with a small anterior apex (PAPP 1988*b*: fig. 30), surstylus in lateral view with a broad base and comparatively narrow apical part (PAPP 1988*b*: 29)  
*N. sordida* (ZETTERSTEDT, 1847)  
Not Oriental. Oriental records (HACKMAN 1977) must be revised.

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