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Description of a new *Rhegmoclema* from Nepal (Diptera, Scatopsidae) (Taxonomic notes on Oriental Scatopsidae. II)

by J.-P. Haenni

Abstract: *Rhegmoclema khukri* n. sp. (East Nepal) is described, figured and distinguished from the two other oriental species of the genus. Its systematic position within genus *Rhegmoclema* and its origin are discussed.

Key words: Diptera Scatopsidae – *Rhegmoclema* – Nepal, Oriental Region – taxonomy – new species.

Introduction

Among the material collected in East Nepal (Arun Valley) in a 1983 trip of the Naturhistorisches Museum Basel conducted by Dr. Michel Brancucci, there is a rather strange Scatopsid belonging to genus *Rhegmoclema* Enderlein that will be described below.

Rhegmoclema khukri n. sp.

Figs 1–7.

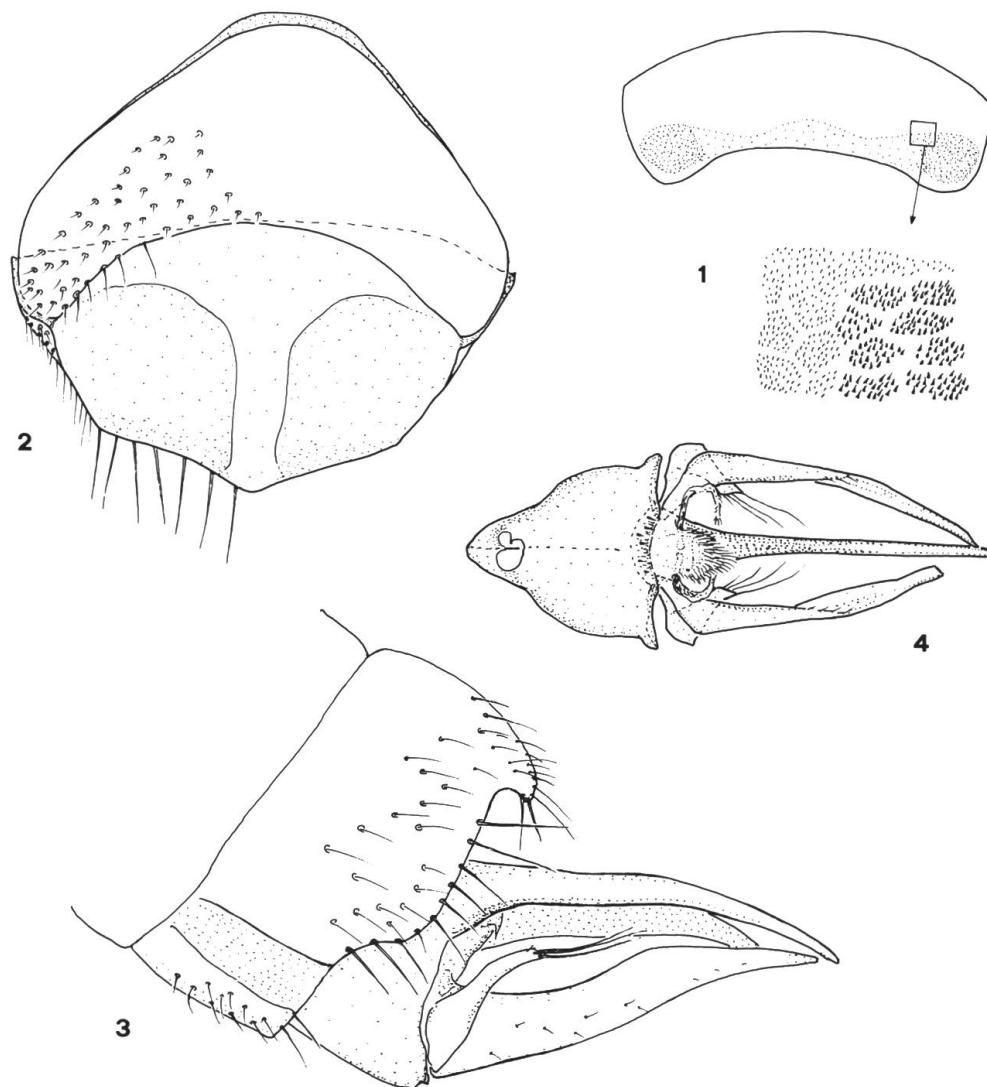
Diagnosis: This small, light coloured species of *Rhegmoclema* may be recognized in ♂ by its very apparent sword-like projections of genitalia (Figs 3–4) which are unique among species of *Rhegmoclema* as well as among Scatopsidae in general; in ♀, venation, especially the short r-m and the swelling of basal section of m (Fig. 5) distinguish it well from *formosanum* (Duda) and *palliditarsis* (De Meijere), the only other oriental species of genus.

Description: Male. 1.6 mm long (in alcohol). Body and legs light brownish with a brown pilosity, except on pleurae and basal abdominal terga which are bare; head darker brown; wings very slightly infuscated, due to micropilosity; halteres lighter brownish; knees somewhat darkened with basal $\frac{2}{3}$ of all tibiae and apical third of hind femora darker brown; tarsi yellowish-brown.

Head higher than long, trapezoidal in side view; eyes $\frac{2}{3}$ of length of head; antennae less than 1.5 times as long as head, 12-segmented, 2nd segment longer than wide, widened towards apex, nearly twice as long as 1st flagellar segment; flagellum 10- segmented, slightly widened towards apex, 1st segment rather quadrate, its width about $\frac{2}{3}$ of width of last segment which is a little more than twice as long as preceding one; palpi small, obovate, labella short.

Thorax: notum covered with a rather rough pilosity with supraalar setae rather indistinct, one pair of strong prescutellar lateral setae, 2 pairs of lateral marginal scutellar setae, the basal pair stronger; spiracular sclerite elongate, triangular, with small anterodorsal spiracle; pleurae bare, shining.

Wings 1.25 mm long, covered with dense erect micropilosity; presence of macrosetae on r_s and r_{4+5} , on all posterior veins where they are



Figs 1–4: *Reginoclema khukri* n.sp. ♂: 1, Tergum 1 (diagrammatic view) showing modified areas (stippled), and detail of microtrichia pattern. 2, Segment 7 (sternum above). 3, Tip of abdomen (unprepared, side view) showing strongly protruding genitalia. 4, Genitalia (morphologically ventral view).

sparse and rather short and weak, as well as on membrane posterior to last vein as usual in genus, and along anterior margin in the distal half of wing; posterior veins very faint, m_1 reduced, traceable only in distal third, m_2 slightly converging towards m_1 at apex; $C_1/C_2/C_3$ (costal sections) = 2.5/1/4.1; $C_1 + C_2/WL$ (radial sector/wing length) = 1/2.1.

Halteres devoid of setae on pedicel which is somewhat lighter than knob.

Legs: fore femora with an elongated patch of short, stout, erect, somewhat spiny setae on basal half of ventral surface; fore tibiae curved, widened regularly towards apex, with a sinuous line of spiny erect inner setae extending along whole length of tibiae; hind tibiae clavate, widened regularly from base to middle.

Abdomen with 7 segments before the genitalia; tergum 1 as usual in *Rhegmoclema*, with modified structure on the basal half, especially laterally (Fig. 1); terga 2 and 3 largely devoid of pilosity, 4 to 6 becoming gradually more pilose; tergum 7 (Fig. 2) with an internal fold, trapezoidal, posteriorly bordered with very long posterior setae that are light coloured and thick (resembling the typical cephalic setae of many Tephritidae); sternum 1 unsclerotized, 2 to 5 much broader than long, covered with pilosity like the rest of body; posterior margin of sternum 6 with a medial group of about 6 short stout spiny setae, more or less arranged in a double line; sternum 7 (Fig. 2), basally medially enlarged, the disc shining and completely devoid of pilosity, posterior margin laterally bordered with long posterior setae that are however shorter than on tergum 7.

Genitalia (Figs 3–4) capsule-like, extended posteriorly into 3 very long curved blade-like projections, as long as abdominal segments 6 and 7 together, one pair of lateral and 1 dorsal, converging nearly to touch at apex and strongly protruding beyond tip of abdomen; the lateral appendages are articulated to the distal margin of the capsule and bear at base a transverse smaller articulated pointed process with very long apical setae, while the dorsal projection appears to be an elongated extension of genital capsule; in addition there is a ventral setaceous triangular lobe and 2 weakly sclerotized pilose curved processes.

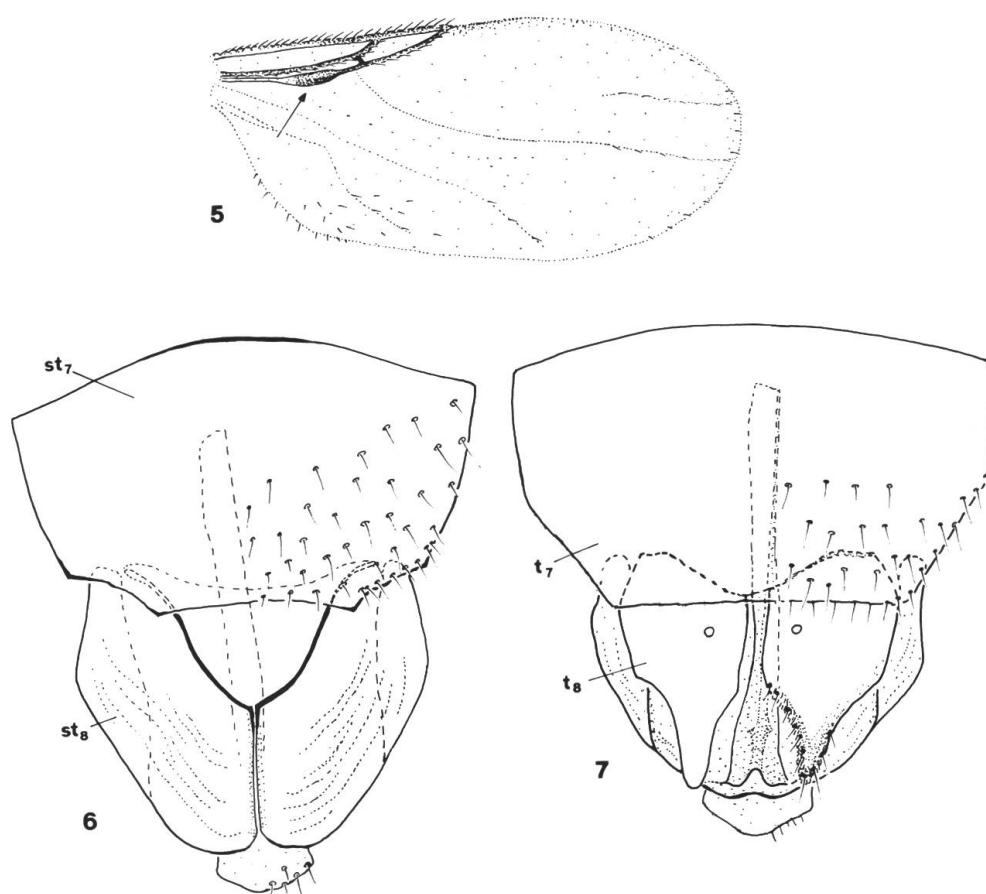
Female. 1.4 mm long (in alcohol); like male in colour, even lighter yellowish.

Head more triangular in side view, eyes smaller, bordered along posterior margin with a row of about 10 campaniform sensillae; antennae only little longer than height of head, shorter than in male, and with flagellum practically not widened from base to apex.

Thorax with a row of 4–5 supraalar setae, 1 strong postspiracular seta, 1 pair of strong praescutellar setae and 2 pairs of scutellar setae like in male. Wings (Fig. 5) 1.25 mm long, very similar to those of male but with basal section of m with a spindle-shaped medially brown coloured swelling; some macrosetae on membrane behind last vein; $C_1/C_2/C_3 = 2.5/1/4.3$; $C_1 + C_2/WL = 1/2.2$.

Legs like in ♂; f_1 with spinose pilosity along inner margin less developed, hind tibiae less clavate; hind coxae with a short inner basal pointed projection.

Abdomen proximal half of tergum 1 modified like in ♂, terga 4 to 7 and all sterna (except 1 unsclerotized) pilose; sternum 6 with a double row of 8 short spiny setae along posterior margin medially; sternum 7



Figs 5–7: *Rhegmoclema khukri* n. sp. ♀: 5, Wing, with spindle-shaped enlargement of base of m (arrow). 6, Tip of abdomen (ventral view) (st_7 = sternum 7, st_8 = sternum 8). 7, Tip of abdomen (dorsal view) (t_7 = tergum 7, t_8 = tergum 8).

trapezoidal; weakly sclerotized sternum 8 medially narrowly divided (Fig. 6); tergum 8 (Fig. 7) nearly completely divided; genitalia as in Figs 6–7.

Type locality: East Nepal, Upper Arun Valley (Num region).

Type material: holotype ♂: *Rhegmoclema khukri* n.sp. ♂ J.-P. Haenni 1989 / 319–83 / East Nepal, Arun Valley, path from Num to Mure, 1600–1700 m, 7.VI.1983, J.-P. Haenni; allotype ♀, same data as holotype; both types in author's collection deposited in the Musée d'histoire naturelle, Neuchâtel.

Etymology: *khukri* (used as an apposition) refers to the unusual posterior projections of male genitalia; the name is derived from the nepali word for a kind of sword which is of general use in Nepal.

Ecology: The 2 known specimens were collected by sweeping in grassy, scrubby, old culture terraces very extensively grazed by cattle, at an altitude of about 1700 m. The area is a northern slope covered with a mosaic of more or less degraded forest, scrubs, pasture and culture lands.

Distribution: known presently only from type locality in Eastern Nepalese Himalaya.

Discussion

There is no doubt on the generic placement of this new species despite of the very unusual appearance of ♂ genitalia. The reticulate structure on first tergite of ♂, the row of stout spinose setae along posterior margin of 6th sternum, the wing venation, the presence of macrosetae on hind veins and membrane and many other morphological features are characteristic of *Rhegmoclema*. With approximately 50 known species, the genus *Rhegmoclema* Enderlein is fairly well represented in all zoogeographical parts of the world except in the oriental region. Only 2 previously described scatopsid species, *Scatopse palliditarsis* De Meijere from Java and *Aldrovandiella formosana* Duda from Taiwan (♀♀ only) have been referred to this genus respectively by SPEISER (1920) as *Aldrovandiella palliditarsis* and by COOK (1973). However, after the original drawing of wing (DUDA, 1928) the latter looks rather unusual and its generic placement may be questionable.

As for *Rh. khukri* n.sp., the strange male genitalia does not clearly indicate a relationship with any already known species. On the other hand several characters of the female suggest a rather close relationship

with a group of 5 australian species: the spindle-shaped swelling of base of m and the structure of genitalia, especially the shape of tergum 8 and cerci resemble those of *Rh. angustipenne* Cook, *collessi* Cook and *noscum* Cook (COOK, 1971). Such a swelling also exists in 2 afrotropical species (see discussion in HAENNI, 1989). On the contrary, there is no evidence of relationship with any palaearctic species. This would suggest that *Rh. khukri* is a true oriental element of gondwanian origin.

Acknowledgments

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