

# Ascalaphid Studies II. New Genera and Species of Tribe Ascalaphini Weele 1908 from Palaeartic Region (Neuroptera: Ascalaphidae)

Z. MÉSZÁROS<sup>1</sup> and L. ÁBRAHÁM<sup>2</sup>

<sup>1</sup>Department of Entomology of Szent István University,  
H–1502 Budapest, P. O. Box 53, Hungary, e-mail: rovr@omega.kee.hu

<sup>2</sup>Somogy County Museum, Natural History Department,  
H–7400 Kaposvár, P. O. Box 70, Hungary, e-mail: levi@smmi.hu

The present study gives a description of two new genus belonging to Ascalaphini tribus according to the classification of Ascalaphinae Lefévre, 1842 [=Schizophthalminae Weele (1908)]; the *Horischema* gen. n. and *Perissoschema* gen. n. It also describes some of their species, *Horischema ronkayorum* sp. n. and *Perissoschema evae* sp. n. from the area of the Himalayas, Pakistan, and Nepal. Key for all genera of the tribus is given. With 8 photos.

Keywords: Taxonomy, Ascalaphid genera and species, Palaeartic region, Himalayas.

During the last decade, Hungarian lepidopterologists have frequently taken part sampling trips in different areas of Inner-Asia, the Himalayas, Pakistan and Nepal. In the course of night samplings, besides Lepidoptera species, several other insects have been collected including Neuroptera species. The processing of the collected Ascalaphid material is still underway (Ábrahám and Mészáros, 2002). This study aims to present a description of the new species (Aspöck et al., 2001; Gosh, 1988; Sziráki, 1998) found in the area of the Himalayas, which belong to so far unknown genera.

## ***Horischema* gen. n.**

Type species: *Horischema ronkayorum* sp. n.

Sexual dimorphism absent. Medium to large sized species: males length of body 22–24 mm, males length of forewing 24–34 mm; females length of body 31–33 mm, females length of forewing 39–40 mm. Head wider than thorax. Eyes large, oval, divided superficially by a furrow. Vertex narrow. Frons, genae without hairs. Antennae unicoloured, hairless, as long as distance between base of forewing and pterostigma. Club subglobular-shaped. Thorax rather short-haired. Pronotum narrow. Tarsi segments 1 and 5 long, the others as long as wide. Tibial spurs almost as long as segment 1. Wings elongately oval about 3× longer than broad with rather acute apices, hairless. Forewing and hindwing sub-equal, hindwing slightly shorter than forewing. Anal area of forewing

angled. Membrane hyaline, with a spot right below pterostigma. Pterostigma opaque, strongly brown pigmented. Venation not dense, apical area with 2 or 3 rows of cells. 5 or 6 radial crossveins before origin of Rs in forewing, 3 or 4 in hindwing.

Abdomen shorter than the hindwing. Tergite 1 split dorsally into a pair of lateral plates in both sexes. Tergite 9 fused, but a central suture like inflection.

Male: ectoprocts not fused dorsally, with forceps forming an ellipsoid shape in dorsal views, apex club-like curved upwards. Gonarcus hood-like, fused with parameres, pelta present, pulvini bag-like.

Female: 2–7 segments of abdomen form cask-like shape. Ectoprocts, a pair of convex plate. Ventrovalvae longer than wide with small interdens.

#### REMARKS

Considering the morphology of the species and the structure of male genitals, this genus seems to be closely related to the species of *Deleproctophylla* Lefébvre, 1842 genus. However, it is more robust than the species of *Deleproctophylla* genus: on the average, it is approximately twice bigger in size than the known *Deleproctophylla* species.

Etymology: *Horischema* = unicoloured wing.

#### ***Horischema ronkayorum* sp. n.**

##### *Material examined:*

*Holotype*: ♂ Pakistan, Margalla Hills, 600 m, 20 km of Islamabad, Pir Sohava, 8. 07. 1994., leg.: B. Herczig, Gy. M. László, G. Ronkay (gen. prep.: 522)

*Paratypes*: 1♀ as holotype; 2♂ Nepal, Ganesh Himal, Valley of Mailung Khola, 1150 m, 22. 05. 1995, leg.: Gy. Fábián, L. Ronkay; 1♂ Nepal, Annapurna Himal, Talbagar, 1950 m, 24. 06. 1996, leg.: M. Hreblay, Cs. Szabóky; 1♀ Nepal, Annapurna Himal, Valley of Kali Gandaki, 1300 m, near Tatopani, 3. 06. 1996, leg. Gy. M. László, G. Ronkay (gen. prep. 523)

*Deposited*: Entomological Collection of Somogy County Museum, Kaposvár

#### DESCRIPTION

*Head*: Vertex narrow, yellow with larger brown irregular-shaped drawing and with pale and brownish hairs. Frons, genae, clypeus and labrum brown. Both edges of the frons, on the anterior tentorial pits long tuft of pale and brownish hairs curved upward towards the vertex. Labrum with brownish hairs on margin curved towards mandibula. Clypeus with some rare black hairs curved towards frons. Maxilla brown with black apex. Maxillary and labial palpi brown. Occiput yellow. Antennae 26–27 mm long. Scape and pedicel brown. Scapes and area between scapes with long dense tuft of whitish yellow hairs, intermingled with some brownish ones ventrally and dorsally as well. Flagellum segments brownish yellow, hairless. Club unicoloured, dark brown with short black setae, subglobular-shaped. Eyes rather big, divided, brownish dorsally and yellowish ventrally.

*Thorax*: Pronotum short, yellow with gradually broadening brown stripe transversally. Lateral projection brown with brownish hairs. Mesonotum: prescutum yellow with dark brown stripe on the edge anteriorly and in the middle longitudinally. Mesoscutum

yellow with dark brown stripe in the middle longitudinally and with board dark brown stripes laterally. Mesoscutellum yellow with dark brown pattern in the middle longitudinally. Hairs on mesonotum long brownish. Metanotum: postnotum and metascutum yellow. Metascutellum brown. Hairs on metanotum long and brownish. Sides brown with a board yellow stripe. Hairs on sides medium length and brownish. Coxa, trochanter, femur of all legs dark brown with stiff black hairs. Tibia and tarsus black with stiff black hairs. Tibial spurse as long as tarsal segment 1. Forewings: 31–32 mm long, 9 mm wide, hindwings: 25–26 mm long, 7 mm wide. Membrane transparent light brownish pigmented but some dark brown cells right below pterostigma and at the base of wing. Longitudinal veins and cross-veins mainly brown. C with short black hairs, the others veins with rare black hairs. Sc and R yellowish brown. Cu2 and A1 run very close to each other and fused in the middle of the anal area. Pterostigma dark brown and opaque with 4 cross veins, rhombic-shaped. Apical area beyond vein Sc+R with two rows of cells. Hindwing colour and pattern similar to forewing but pigmentation larger and stronger below pterostigma on membrane. Parallel, narrow dark brown stripe between cross veins of pterostigma.

*Abdomen:* 16–18 mm long. Tergite 1 dark brown with long brownish hairs. Tergite 2 dark brown. Following segments dark brown with larger yellow pattern in the middle. Sternit rather yellowish brown. Hairs on segments rare short black (*Figs 1, 2*).

*Genitalia:* Male ectoprocts not fused dorsally, with an ellipsoid-shaped pair of forceps, apex club-like curved upwards. Colour brownish but their apex lighter with black stiff short setae. Gonarcus hood-like, hairless fused with parameres, pelta present, pulvini bag-like their hairs long and brownish. Gonosetae black as long as hairs on pulvini.

Female: Tergite 1 divided, tergites 2–7 black with yellow pattern in medial line. Pleurites 3–5 enlarged, unicolour brown, the others with yellow striped. In dorsal views tergites 8–9 brown with yellow medial line and a central suture like inflection. Ectoprocts a pair of convex plates, brown with yellow narrow stripe margin dorsally and long stiff black hairs. In ventral views ventrovalvae brown twice longer than wide, their rounded apices with black stiff hairs, interdens small. Distivalvae brown long and also with stiff black hairs caudo-ventrally (*Figs 3, 4*).

*Etymology:* We name this species in honour of the lepidopterologist brothers, Dr. László Ronkay (HNHM, Budapest) and Gábor Ronkay.

#### DISTRIBUTION

Pakistan and Nepal

#### *Perissoschema* gen. n.

Type species: *Perissoschema evae* sp. n.

Sexual dimorphism unimportant, difference mostly in size. Medium to large sized species: males length of body 22–29 mm, males length of forewing 28–36 mm; females length of body 27–33 mm, females length of forewing 36–44 mm.

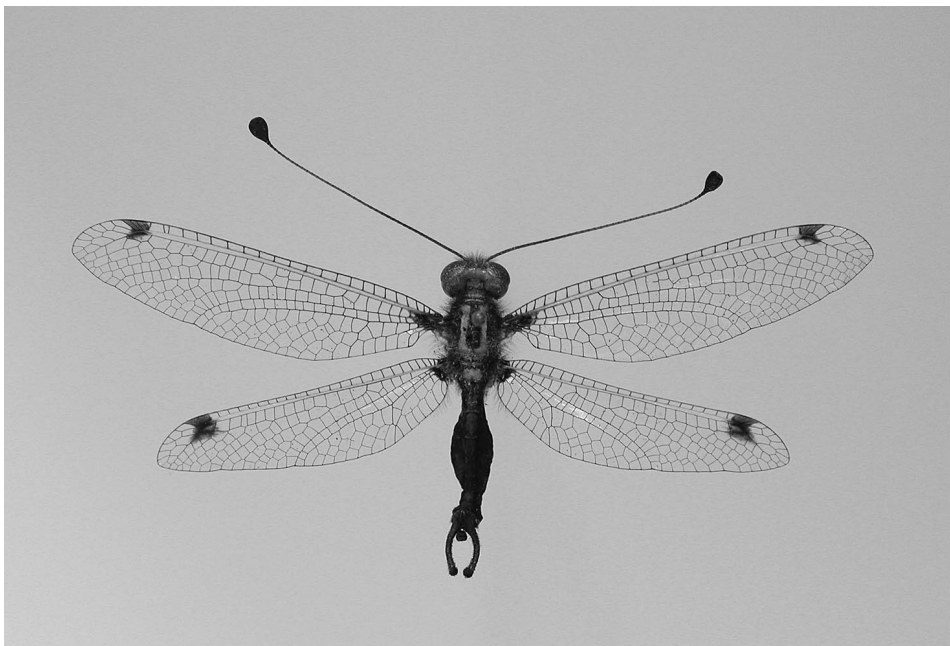


Fig. 1. *Horischema ronkayorum* imago, male



Fig. 2. *Horischema ronkayorum* imago, female

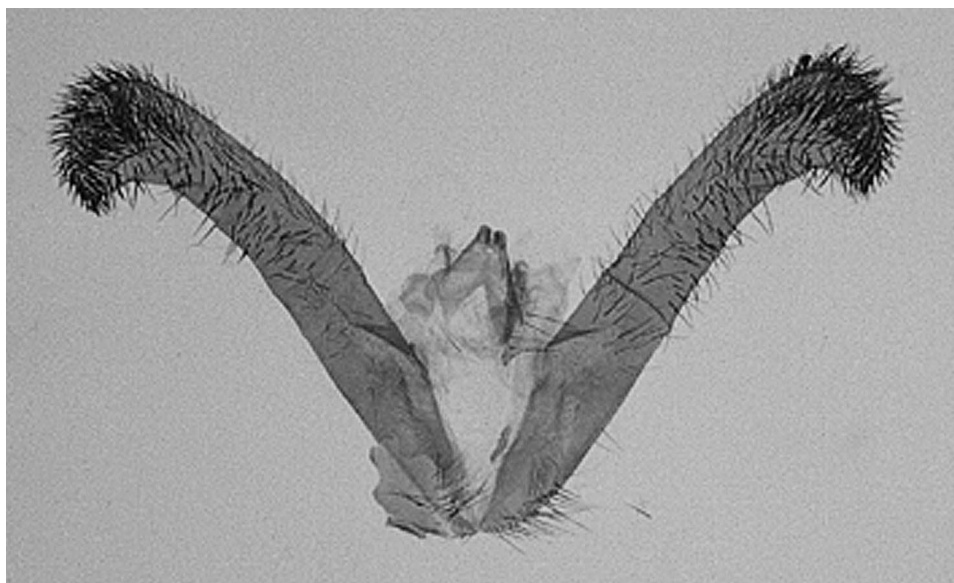


Fig. 3. *Horischema ronkayorum* male



Fig. 4. *Horischema ronkayorum* female

Head wider than thorax. Eyes large, oval, divided superficially by a furrow. Vertex narrow. Frons, genae without hairs. Antennae unicoloured, hairless, a bit shorter than distance between base of forewing and pterostigma. Club subglobular-shaped. Thorax long-haired. Pronotum narrow. Tarsi: segments longer than broad, not equal. Tibial spurs as long as segments 1–3, but different in both sexes. Wing elongated oval about 3× longer than broad with rounded apices, hairless. Forewing and hindwing sub-equal, the hindwing slightly shorter than the forewing. Anal area of forewing slightly angled. Membrane coloured spotted, pterostigma opaque, strongly pigmented. Venation not dense, apical area with two rows of cells. 5–6 radial crossveins before origin of Rs in forewing, 4–5 in hindwing.

Abdomen shorter than the hindwing. Tergite 1 split dorsally into a pair of lateral plates in both sexes. Tergite 9 fused.

Male: ectoprocts with an ellipsoid-shaped forceps, apex club-like in dorsal views. In ventral views slightly curved downwards. Gonarcus hood-like fused with parameres, pelta present, pulvini bag-like.

Female: ectoprocts, a pair of convex plate. Ventrovalvae right-angled isosceles triangular-shaped with strong interdens. Distivalvae elongate.

#### REMARKS

According to its external morphology as well as its male genital structure, this genus – just like the previous ones – also belongs to the *Ascalaphini* tribus (Weele, 1908). However, its mottled wings and body as well as the bright ochre-yellow colour of its pterostigma makes it significantly different from the species of other (though closely related) genus e.g. *Deleproctophylla* Lefébvre, 1842 and *Puer* Lefébvre, 1842 genus. The wing surface is remarkably speckled, its mottle stands close to the mottle pattern of the species of *Libelloides* Schöffer, 1763 genus.

Etymology: *Perissoschema*=colourful wing.

#### *Perissoschema evae* sp. n.

*Material examined:*

*Holotype:* ♂ Pakistan, Margall Hills, Pir Sohawa 1000 m, 27. 08. 1998, leg.: Z. Varga, G. Ronkay (gen. prep.: 524)

*Paratypes:* 1♀ as holotype (gen. prep.: 525); 1♂ 3♀ Pakistan, Islamabad, Margalla Hills, 1000 m, 21. 08. 1997, leg.: Gy. Fábán, G. Ronkay; 3♂ 6♀ Pakistan, Himalaya, 750 m, Kashmir, Nara 20 km, Muzafarrabad, 12. 09. 1997, leg.: Gy. Fábán, G. Ronkay; 2♀ Pakistan, Islamabad, Margalla Hills, 1000 m, 13. 09. 1997, leg.: Gy. Fábán, G. Ronkay;

*Deposited:* Entomological Collection of Somogy County Museum, Kaposvár

#### DESCRIPTION

*Head:* Brown vertex narrow with long dense brownish hairs. Frons, genae, clypeus and labrum yellow. Frons and labrum both with one larger irregular shaped, contourless brownish spot. Both edges of the frons, on the anterior tentorial pit long dense whitish yellow hairs curved upward towards the vertex. Scape yellow with long dense pale hairs,

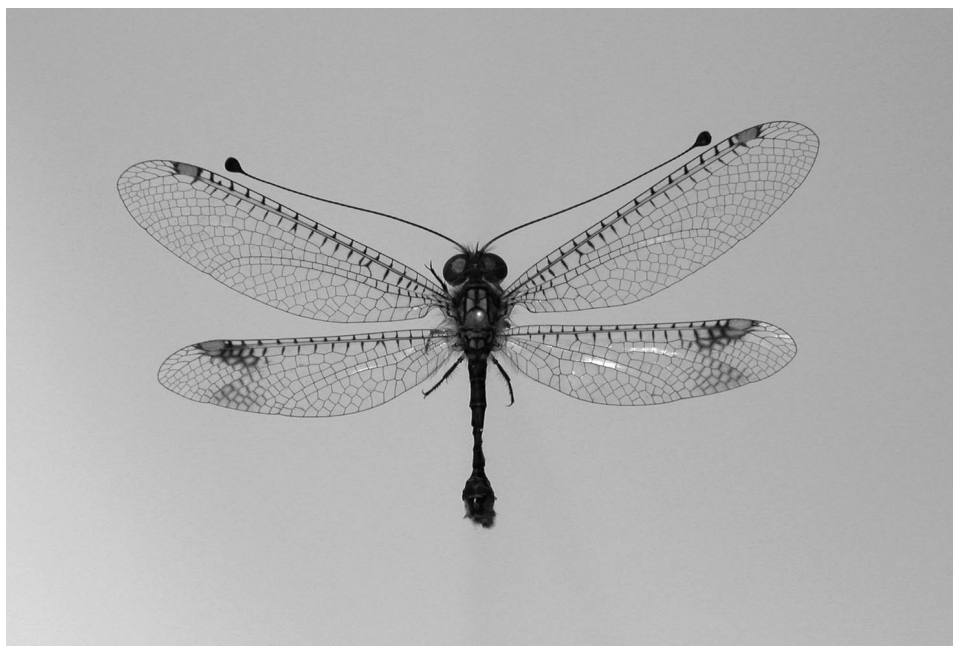


Fig. 5. *Perissoschema evae* imago, male

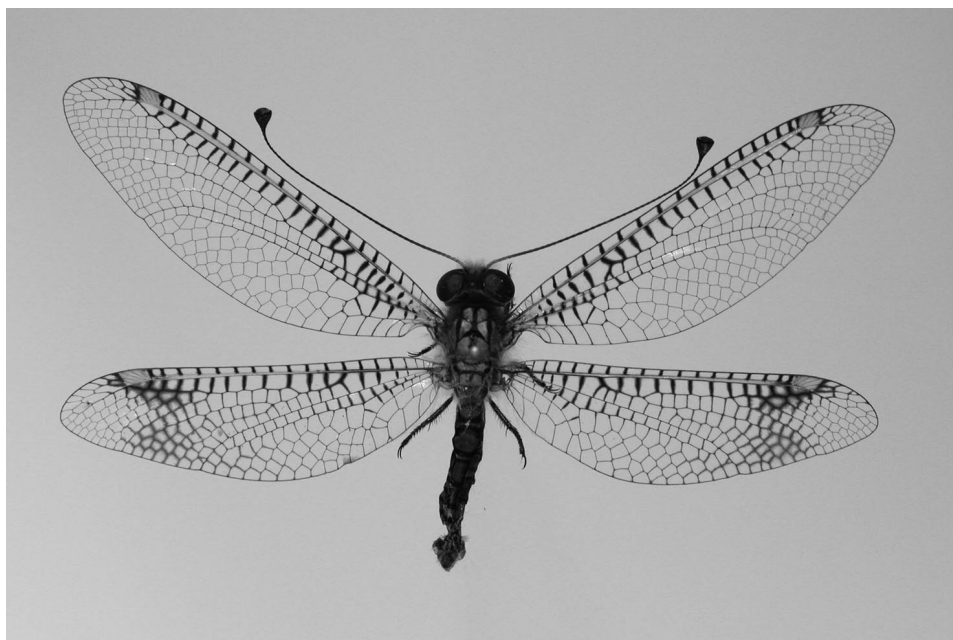


Fig. 6. *Perissoschema evae* imago, female

intermingled with some brownish long ones ventrally. Labrum with rather rare whitish hairs on margin curved towards mouthpart. Maxilla mostly yellow, but rather dark brown at the end of apex. Maxillary and labial palpi yellow except the last two amber ones. At their joins with short black hairs. Occiput yellow. Antennae 26–27 mm long. Scape and pedicel yellow. Flagellum segments brownish, but a bit lighter, yellowish brown proximally than distally, hairless. Club unicoloured, dark brown with short black verticils, subglobular-shaped.

*Thorax:* Pronotum short, yellow with brown stripe transversally and with long pale hairs. Lateral projection yellow with pale hairs. Mesonotum: prescutum yellow with dark brown stripe on the edge anteriorly, on both sides and in the middle. Mesoscutum yellow with dark brown stripe longitudinally in the middle and with dark brown pattern along the suture. Hairs long dense pale. Mesoscutellum yellow with dark brown pattern on the anterior edge and in the middle longitudinally and with long dense pale hairs. Metanotum: postnotum yellow. Metascutum yellow with dark brown drawing from posterior margin to central part transversally. Metascutellum also yellow with dark brown decreasing narrow stripe longitudinally in the middle. Metanotum long dense pale hairs. Sides yellow with whitish hairs. Dark brown stripes on metathorax and along the suture of mesothorax and metathorax. Foreleg dark brown with stiff black hairs except tibia anteriorly with stiff light hairs. Coxa on middle leg and hind leg yellow with long dense whitish hairs. Trochanter, femur tibia and tarsus dark brown with stiff black hairs except femur yellowish anteriorly and proximally. Tibial spur as long as tarsal segments 1–3. Forewings: 35–36 mm long 10–11 mm wide, hindwings: 29–30 mm long 8–9 mm wide. Membrane light ochraceous pigmented, longitudinal veins mainly brown, cross-veins also brown except cross veins 1–4 in the costal area proximally. Sc yellow and R also yellow partly. Mp yellow proximally, brown distally. Membrane yellow between Sc and R. Cross veins with narrow dark brown shade in costal area between R and M, and M and Cu1 especially at base of forewing. Pterostigma dark ochraceous and opaque with 4 cross veins, rhombic-shaped. Apical area beyond vein Sc+R with two rows of cells. Veins with rare short black setae. Hindwing colour and pattern similar to forewing but anal veins yellow.

*Abdomen:* 19–20 mm long with yellow and dark brown drawing: Tergite 1 split dorsally, yellow with dark brown pattern laterally and long dense brownish hairs. Tergite 2 mostly dark brown with yellow spots and decreasing amount hairs distally. The others as coloured and patterned as tergite 2. Hairs on following segments rare short black (*Figs 5, 6*).

*Genitalia:* Male: Tergite 9 very large, rhomboid-shaped with yellow and brownish pattern and medium-long stiff black hairs on margin caudally. In lateral views tergite 9 with an acute apex caudo-ventrally. Ectoprocts yellow, with ellipsoid-like forceps, apex club-like in dorsal views. On ectoprocts short, stiff, black setae, stronger inside than outside. In ventral views ectoprocts slightly curved downwards. Gonarcus hood-like, hairless fused with parameres, anterior side of parameres with tooth. Pelta present with setae, pulvini bag-like their hairs long and brownish. Setimere black a bit longer than hairs on pulvini.

Female: Tergites 2–9 yellow with irregular brown shape pattern. Pleurites 2–7 enlarged with brown and yellow stripes. Tergite 9 yellow, subrectangular shape with black stiff hairs in lateral views. Ectoprocts a pair of convex plate yellow with rare, stiff,





Fig. 7. *Perissoschema evae* male

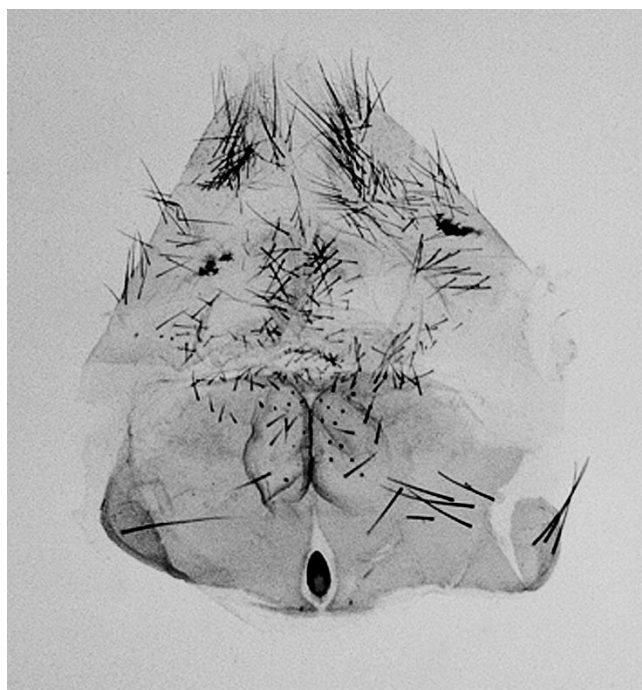


Fig. 8. *Perissoschema evae* female

black hairs. Hairs on margin dense, pale caudally. In ventral views ventrovalvae yellow, right-angled isosceles triangular-shaped with their rounded apex and black stiff hairs on margins, interdens strong chitinized. Distivalvae elongate, yellow with black stiff hairs (Figs 7, 8).

**Etymology:** The new species is dedicated to Éva (Eve), Z. Mészáros' wife

**DISTRIBUTION**

Pakistan

**Keys to the genera of tribe Ascalaphini Weele, 1908**

- |   |                         |
|---|-------------------------|
| 1. Wings with different sized spots and cross veins with narrow shade   | 2                       |
| – Membrane of wings spotless and veins without shade                    | <i>Ascalaphodes</i>     |
| 2. Wings of imagines only with brown spots                              | 3                       |
| – Wings of imagines at least with bicoloured spots                      | 5                       |
| 3. Large to medium-sized, wing 30–40 mm long, brown spots on both wings |                         |
|   | <i>Horischema</i>       |
| – Small-sized, wing 15–25 mm long, brown spots mainly on hindwing       | 4                       |
| 4. Brown spot or stripe on hindwing below or around pterostigma         | <i>Deleproctophylla</i> |
| – Hindwing with extend brown spots or stripe                            | <i>Puer</i>             |
| 5. Large-sized, wing 31–45 mm long                                      | <i>Perissoschema</i>    |
| – Medium-sized, wing 16–30 mm long                                      | <i>Libelloides</i>      |

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