

# *Nematopsephus* gen.n., a new genus of Psephenoidinae from Asia (Coleoptera: Psephenidae)

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## Abstract

*Nematopsephus*, a new genus of Psephenidae (Psephenoidinae) and one new species, *N. malickyi*. [Thailand] are described. The new genus is characterized by the unusual shape of the male antennae and by very long legs. *Microebrianax subopacus* PIC is transferred to the genus *Psephenoides* GAHAN.

**Key words:** Psephenidae, Psephenoidinae, *Nematopsephus*, new genus, taxonomy, Asia, Thailand

## Introduction

The Psephenidae subfamily Psephenoidinae is so far known only from tropical Africa (Zaire and Angola) and from Asia (India to Japan and Sulawesi). Two genera (including less than 10 described species) are so far recognized in this subfamily: *Psephenoides* GAHAN and *Afropsephenoides* BASILEWSKY. Numerous new species of both genera will be described in a forthcoming revision of the subfamily by JENG & YANG (in preparation).

In 1992, a remarkable new genus, deviating by several peculiar, apomorphic characters, was discovered by H. Malicky in northern Thailand.

## Acronyms

CSUS California State University, Sacramento  
MHNP Muséum national d'Histoire naturelle, Paris  
NMW Naturhistorisches Museum, Wien  
NTU National Taiwan University, Taipei, Republic of China  
SIW Smithsonian Institution, Washington, D.C. [= National Museum of Natural History]

## Acknowledgements

We thank Dr. Hans Malicky (Lunz, Austria) for donating the type series of *Nematopsephus malickyi* and Prof. W.D. Shepard (CSUS) for critically reading the manuscript.

## *Nematopsephus* gen.n.

*Sinopsephenoides* YANG 1994: 379 [= unavailable name].

Type species: *Nematopsephus malickyi* sp.n.

**DIAGNOSIS:** Length, 2.0 - 3.2 mm, male usually longer than female; weakly sclerotized; body form suboblong. Habitus as in Figs. 1 and 2.

Head transverse, hypognathous, exserted. Head capsule strongly reduced. Eyes very large. Labrum very small, oblong. Mouth probably non-functional. Mandibles lacking. Maxilla and

labium vestigial, only their palpi well developed; maxillary palpi 3- (female) or 4-segmented (male), labial palpi 2- (female) or 3-segmented (male). Antennae sexually dimorphic, short, filiform, 6-segmented in the female and 11-segmented and unusually shaped in the male sex: segments 1 - 5 very short, segments 3 - 5 with a filiform appendage of which the appendage on segment 3 is very long (approximately half as long as all antennal segments together) while the appendages on segment 4 and 5 are comparatively short, segments 6 - 8 moderately long, inconspicuously serrate, segments 8 - 11 very long and thin, the terminal segment being the longest.

Pronotum subtriangular, distinctly wider than long.

Mesonotum (mesoscutum + mesoscutellum) very large and almost completely exposed, transverse; mesoscutellum larger than mesoscutum and approximately as wide as the mesoscutum. Elytra distinctly reduced, medially produced in anterior third, weakly sclerotized, medially widely separated, leaving parts of the metanotum, the hind wings and the abdomen exposed; without distinct striae or punctures, but with a very indistinct, inconspicuous, gently curved carina extending from the anterior inner angle to approximately anterior 0.3 and which can be seen only in dried specimens.

Metanotum very large, as long as (female) or distinctly longer than (male) pro- and mesonotum together; metaprescutellum and metascutum obstructed by the large mesoscutellum, not visible from above; median parts of metascutellum and metapostnotum (metaphragmanotum, metapostscutellum) exposed, visible from above and more strongly sclerotized; sclerotized area of metascutellum undivided, paired in metapostnotum. Hind wing venation (Fig. 11) strongly reduced.

Prosternum strongly reduced and short, posterior processes very short and inconspicuous in male, absent in female. Mesosternum reduced to a narrow sclerotized band. Metasternum large, rectangular, with a shallow, narrow median groove and a short transverse suture near posterior margin. Legs unusually long, pro- and mesocoxa and female metacoxa distinctly projecting; tarsus as long as or distinctly longer than tibia, its fourth segment much shorter than remaining segments; claws of male simple, distinctly toothed in female.

Abdomen with 6 (female) or 7 (male) externally visible sternites.

Aedeagus (Figs. 8 - 10): Strongly deviating. Penis short and stout, laterally slightly depressed; basal apophyses moderately long; ventral sac present, without distinct fibula or corona. Phallobasis and parameres inseparably fused, suture between parameres and phallobasis hardly visible; parameres baso-ventrally and baso-dorsally fused, their apices divided into a large, bluntly rounded, ventral apex and a small, short, acute, dorsal one; baso-dorsally connected with penis.

Ovipositor (Fig. 14): Generally, as in other Dryopoidea; very short. Oviduct expelled in all specimens which we have examined, probably as a result of treatment with alcohol.

**SEXUAL DIMORPHISM:** The new genus is characterized by a very conspicuous sexual dimorphism which is most evident in the dimorphous shape of the antennae and the maxillary and labial palpi. Numerous other sexually dimorphic characters include colouration, body length, retraction of head, shape of pronotum, metascutellum, metapostscutellum, pro-, meso- and metasternum, metacoxae and sixth ventrite, position of meso- and metacoxae and pubescence of meso- and metanotum, abdomen and legs.

**LARVA:** The larva of *Nematopsephenoides* gen.n. is still unknown.

**DISTRIBUTION:** North India to North Thailand and Southeast China.

This genus was reported from China (Fujian Province) and illustrated by YANG (1994: p. 379, Fig. 17.119) under the name "*Sinopsephenoides*" (= unavailable name). A description of "*Sinopsephenoides*" was never published.

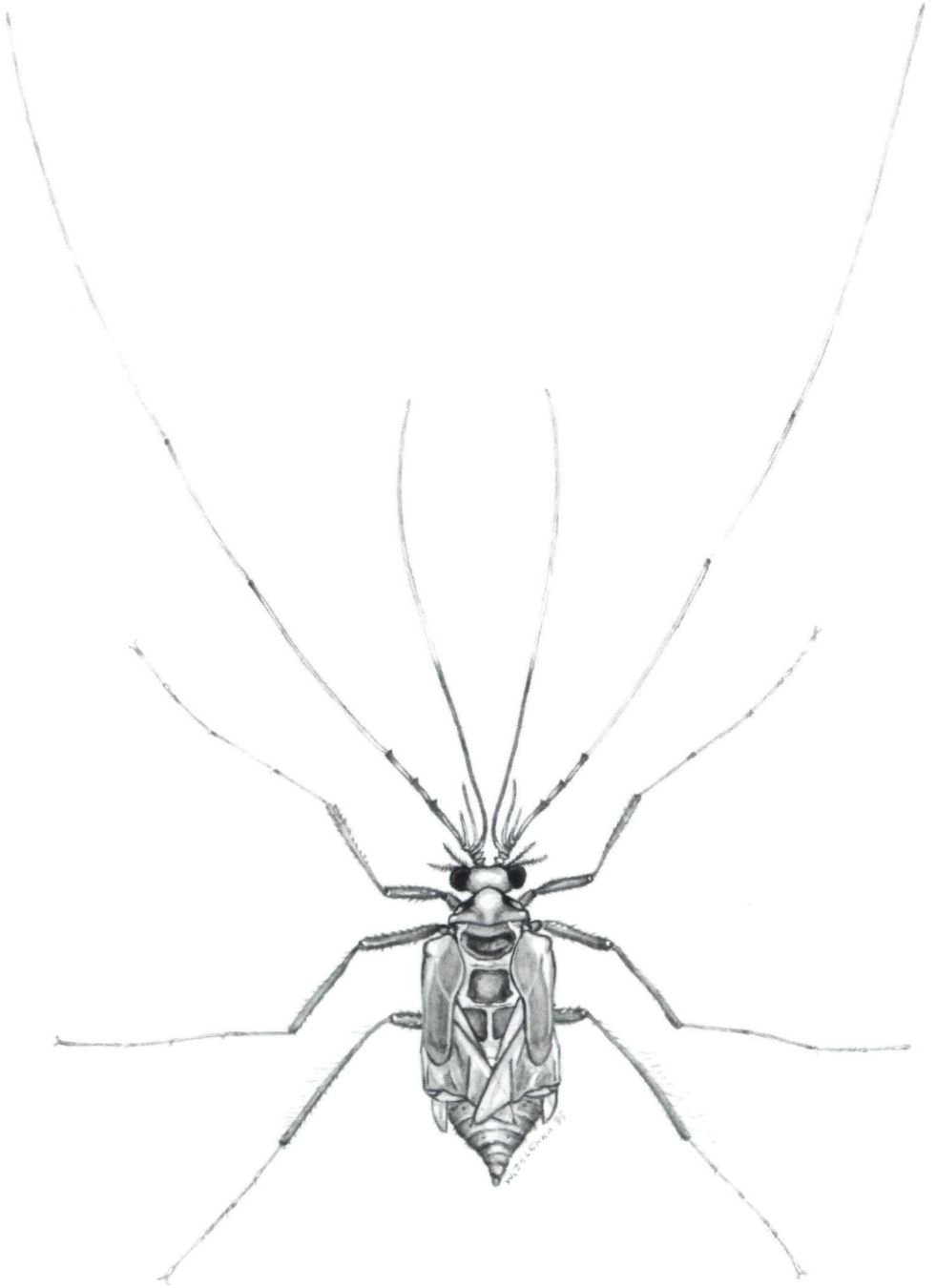


Fig. 1: *Nematopsephus malickyi*, habitus, male

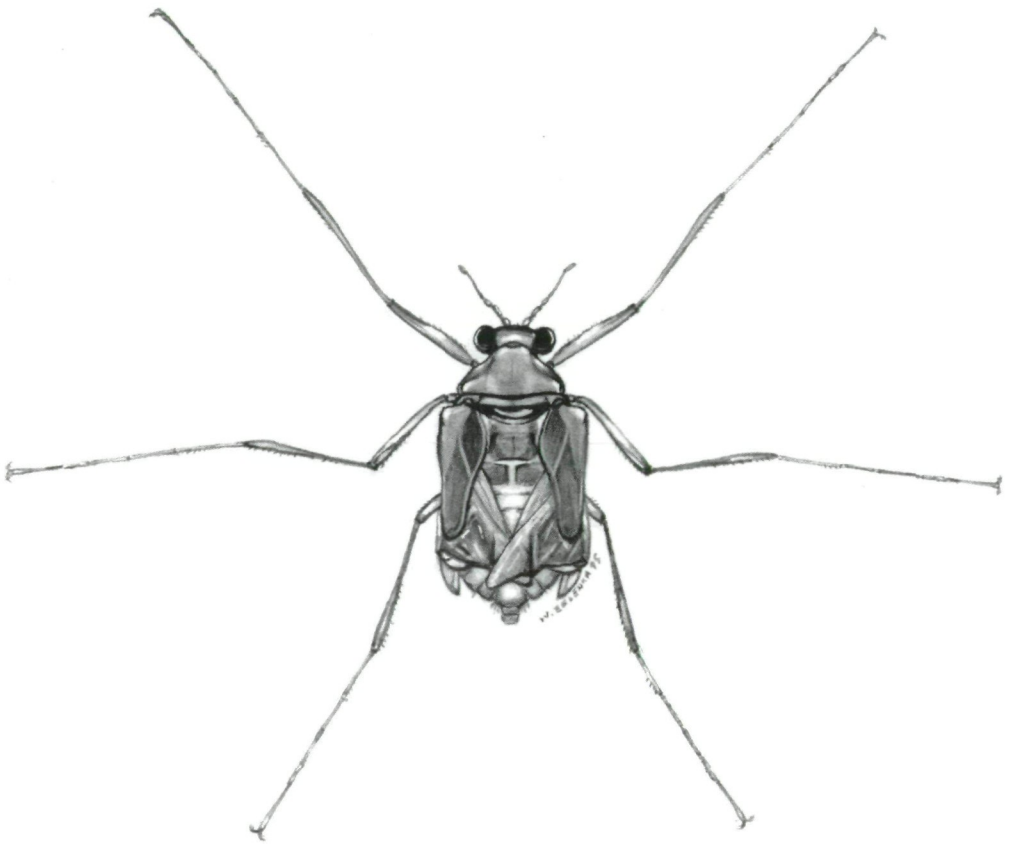


Fig. 2: *Nematopsephus malickyi*, habitus, female

In an unpublished thesis (JENG & YANG 1994), this genus was reported from northern India (Uttar Pradesh).

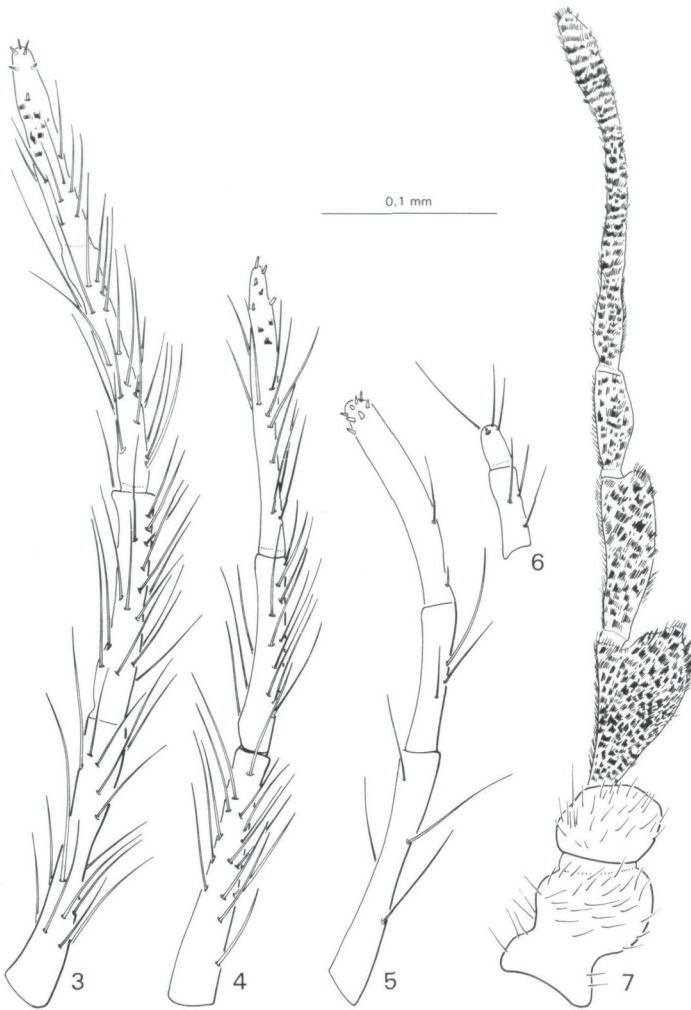
ETYMOLOGY: Nematodes (Greek: thread-like, referring to the unusually long and thread-like tarsi and male antennae), and psephus, a derivate of *Psephenus* (type genus of the family).

*Nematopsephus malickyi* sp.n.

TYPE LOCALITY: Ban Mae Kap, Nam Mae To, 18°51'N 98°37'E, 600 m a.s.l., northern Thailand. All specimens were collected at light.

TYPE MATERIAL: **Holotype** ♂ (NMW): "N-THAILAND 18°51'N 98°37'E Ban Mae Kap Nam Mae To \ 600m, Lichtfalle 14.3.1992 leg. Malicky". **Paratypes** (NMW, NTU, CUS, SIW): 27 ♂♂ + 28 ♀♀ from the same locality as the holotype. The holotype and 8 paratypes are mounted on cards, the remaining paratypes are kept in alcohol.

DIAGNOSIS (MALE): Length, 2.5 - 3.2 mm. Habitus as in Fig. 1. Colouration greyish brown, metasternum and metacoxae, legs except tarsi and antennae except segments 9 - 11 and apical half of appendage of segment 3 dark brown; tarsi and antennal segments 9 - 11 paler yellowish; apices of antennal segments 9 - 11 slightly darkened; elytra variegated.



Figs. 3 - 7: *Nematopsephus malickyi*, 3) maxillary palp of ♂, 4) labial palp of ♂, 5) maxillary palp of ♀, 6) maxillary palp of ♀, 7) antenna of ♀.

Head moderately densely pubescent. Maxillary palp (Fig. 3) 4-segmented; all segments approximately equally long, moderately densely covered with long hairs; apical segment with a few scale-like setae and apically with a few short sensory hairs. Labial palpi 3-segmented, shorter than the maxillary palpi; hairs, setae and sensory hairs as in the maxillary palpi. Antennae 11-segmented; segments 1 and 2 short, sparsely covered with short hairs; segments 3 - 11 densely covered with scale-like setae; comparative lengths of segments 3 - 11 = 1 : 1 : 2 : 11 : 6 : 10 : 44 : 29 : 90; segments 3 - 5 each with a filiform appendage; appendage of segment 3 very long, almost as long as segment 11; appendage of segment 4 slightly longer than segment 6; appendage of segment 5 comparatively short, approximately as long as segment 7; segments 6 - 8 inconspicuously serrate; segments 9 - 11 filiform.

Pronotum short, subtriangular, moderately densely pubescent; anterior margin medially

produced; posterior margin slightly sinuous; with a prominent callosity near posterior angles.

Mesoscutum densely covered with short setae, mat; mesoscutellum superficially reticulate, moderately densely pubescent, hairs longer than on mesoscutum. Elytra densely pubescent, microreticulate.

Median parts of metascutellum microreticulate and moderately densely pubescent; metapostnotum approximately as long as metascutellum, reticulate, mat.

Metacoxae separated by a narrow gap into which a pair of short metasternal processes projects. Femora, tibiae and tarsi of front and middle leg moderately densely covered with moderately long hairs; femur, tibia and tarsus of hind leg with distinctly longer hairs, but median surface of metafemur entirely glabrous; pro- and mesotibia straight, hind tibia gently curved; tarsi very long, pro- and mesotarsus longer than tibia, metatarsus approximately as long as metatibia; claws simple.

Abdomen with 7 externally visible sternites; ventrites II - IV densely covered with short hairs and moderately densely covered with moderately long, dark hairs; fifth ventrite U-shaped, densely covered with short hairs, moderately long, dark, hairs restricted to posterior angles; sixth ventrite short, U-shaped (Fig. 12), apically with groups of moderately long, dark hairs; apex of seventh ventrite (Fig. 14) pubescent, externally visible.

Aedeagus (Figs. 8 - 10): ca. 0.4 mm long. Apex of penis bluntly rounded; endophallus everted, with a pair of short sclerites. Parameres surpassing apex of penis, slightly shorter than phallobasis.

**SEXUAL DIMORPHISM:** The female of *Nematopsephus malickyi* sp.n. (Fig. 2) differs from the male in a number of characters: length 2.0 - 2.6 mm; legs more or less unicoloured yellowish, antennae unicoloured brownish, ventral surface unicoloured yellowish; maxillary (Fig. 5) and labial (Fig. 6) palpi distinctly shorter, 3- respectively 2-segmented and less densely pubescent. Antennae only 6-segmented, short, approximately as long as width of head; comparative lengths of segments 3 - 6 = 1 : 1.1 : 0.8 : 2.5; segment 3 distinctly, segment 4 weakly serrate; segments 5 and 6 filiform (Fig. 7).

Pronotum slightly longer than in male, more trapezoidal; anterior margin less distinctly produced anteriorly; postero-lateral callosity less prominent.

Mesoscutellum only sparsely pubescent, glabrous. Median part of metascutellum shorter, only sparsely pubescent, glabrous; metapostnotum distinctly shorter.

Prosternum without posterior process. Mesosternum wider. Metasternum shorter; metasternal processes distinctly separated.

Mesocoxae more widely separated; metacoxae medially more distinctly projecting, more widely separated; metatibiae straight; hind legs without conspicuous pubescence; claws toothed.

Dark hairs of abdomen confined to lateral margins and to apical margins of ventrite V and VI. Ventrite VI (Fig. 15) with a pair of long, basal appendages.

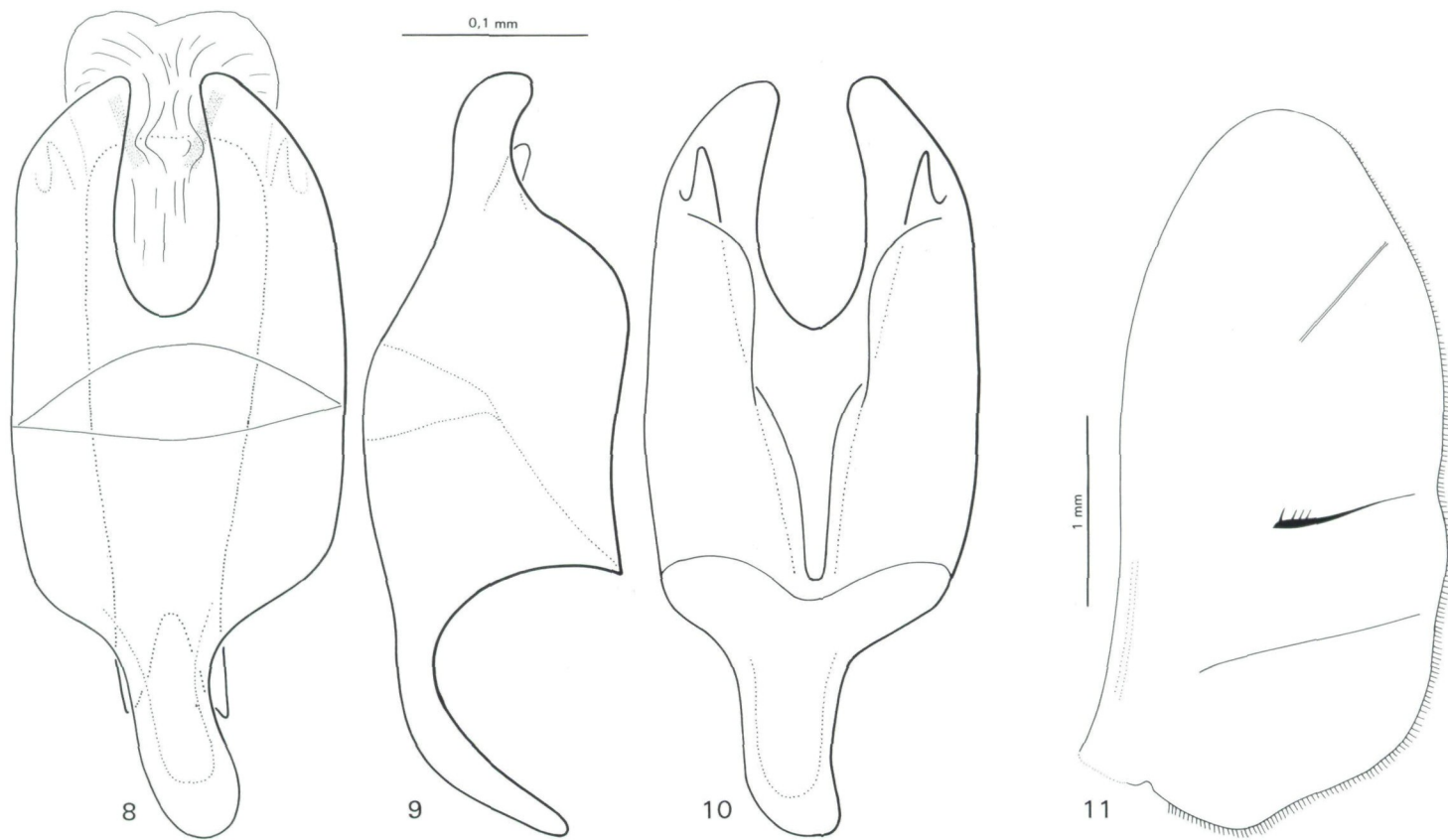
**DISTRIBUTION:** So far known with certainty only from the type locality. The specimens reported by JENG & YANG (1994) and YANG (1994) from India (Uttar Pradesh) and China (Fujian) probably represent different species.

**ETYMOLOGY:** Named in honour of Dr. Hans Malicky in recognition of his remarkable skills in attracting rarely collected insects with light traps.

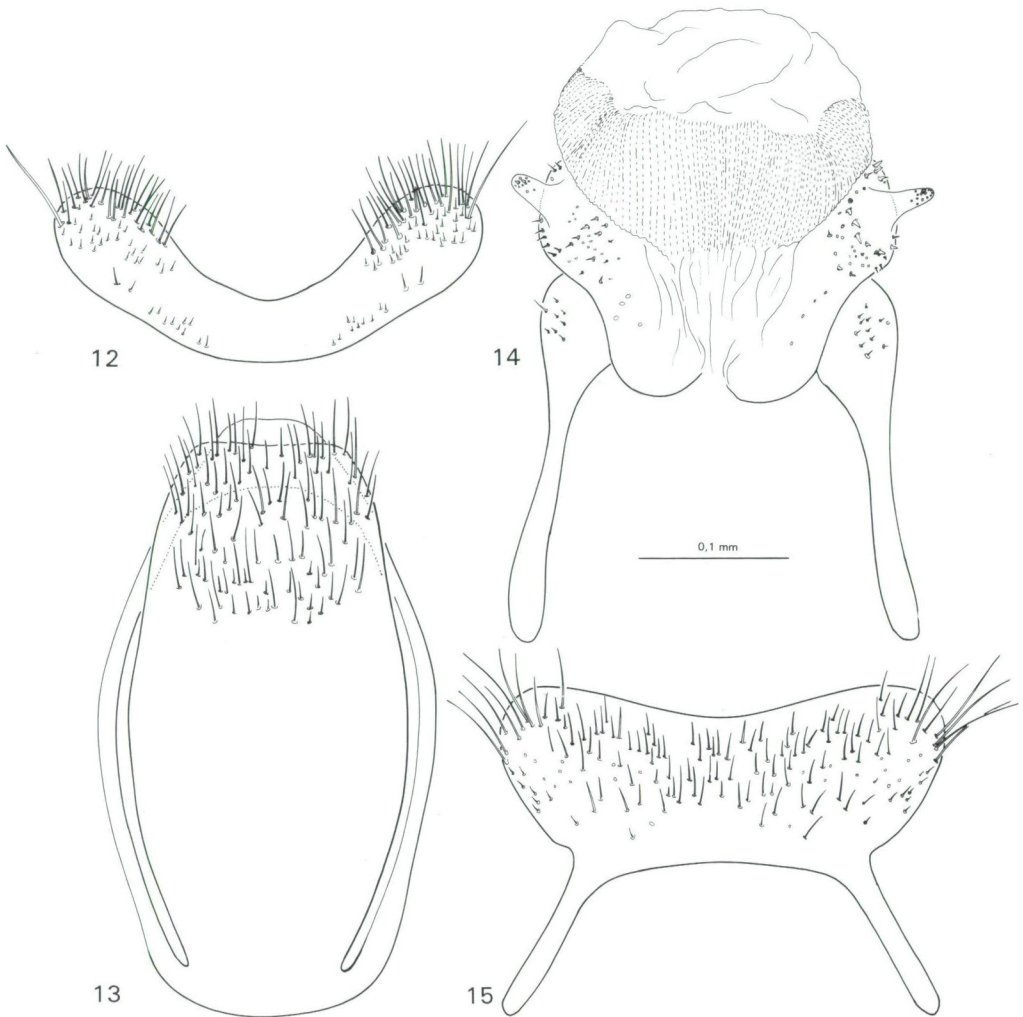
### *Psephenoides* GAHAN

*Psephenoides* GAHAN 1914: 189.

*Microebrianax* PIC 1954: 64. [= unavailable name]



Figs. 8 - 11: *Nematopsephus malickyi*, 8) aedeagus, ventral aspect, 9) tegmen, lateral aspect, 10) tegmen, dorsal aspect, 11) metathoracic wing.



Figs. 12 - 15: *Nematopsephus malickyi*, 12) ventrite VI of ♂, 13) ventrite VII of ♂, 14) ovipositor, 15) ventrite VI of ♀.

The type species of the genus *Psephenoides* is *P. immsi* GAHAN (by original designation).

The name "*Microeubrianax*" was used by PIC (1954) for the description of *Microeubrianax subopacus* [= *Psephenoides subopacus* (PIC)], but it was never formally introduced and is thus not an available generic name in the sense of the ICZN and was thus not listed in EDWARDS & HOPWOOD (1966). A male syntype of *Psephenoides subopacus*, deposited in the MHNP, was examined by the senior author.

### Zusammenfassung

*Nematopsephus*, eine neue Gattung der Familie Psephenidae (Unterfamilie Psephenoidinae) und eine neue Art, *N. malickyi* [Thailand], werden beschrieben. Die neue Gattung ist durch die



außergewöhnliche Form der männlichen Antennen und die langen Beine charakterisiert. *Microebrianax subopacus* PIC wird in das Genus *Psephenoides* GAHAN transferiert.

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