



## A new remarkable species of *Probles* with clavate antennae from Vietnam (Hymenoptera: Ichneumonidae: Tersilochinae)

### Новый примечательный вид *Probles* с булавовидными антеннами из Вьетнама (Hymenoptera: Ichneumonidae: Tersilochinae)

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**Abstract.** *Probles* (*Euporizon*) *chernetsovi* Khalaim **sp. nov.** characterised by strongly clavate antennae with unusual sensillar areas, is described as new to science from Central Vietnam.

**Резюме.** *Probles* (*Euporizon*) *chernetsovi* Khalaim **sp. nov.**, характеризующийся сильно булавовидными антеннами с необычными полями сенсилл, описан как новый для науки из Центрального Вьетнама.

**Key words:** Oriental region, Asia, tropics, taxonomy, parasitoids, new species

**Ключевые слова:** Ориентальная область, Азия, тропики, таксономия, паразитоиды, новый вид

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## Introduction

*Probles* Förster, 1869 is a moderately large tersilochine genus with the majority of species in the Holarctic region. It is represented by 52 species in the Palaearctic region while the Nearctic fauna is virtually undescribed (Yu et al., 2016; Khalaim, personal observation). Only a few species of *Probles* are known beyond the Holarctic region: two species in the Oriental region (Khalaim, 2011) and one species in the Afrotropical region (Khalaim, 2013). Townes (1971: 37) mentioned a worldwide distribution of the genus, and later undescribed taxa of *Probles* were reported from Australia (Gauld, 1984: 314), Mexico and Central America (Khalaim, 2011: 134–135).

Only one species of *Probles*, *P. vietnamica* Khalaim, 2011, was known from Vietnam hitherto. The aim of this work is to describe a second

Vietnamese species characterised by unique sensillar areas on clavate antennae.

## Material and methods

Material of the new species was loaned from the National Museum of Natural History (Naturalis), Leiden, the Netherlands (RMNH). Two paratypes will be deposited in the Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia (ZIN).

Morphological terminology follows that of Townes (1971) with changes according to Khalaim (2011). Wings of one specimen (Fig. 10) were slide-mounted using Solakryl BMX. Layer photographs were taken in ZIN, with a Canon EOS 70D digital camera attached to an Olympus SZX10 stereomicroscope. Partly focused images were assembled with Helicon Focus 6 Pro software.

## Taxonomic part

Order **Hymenoptera**

Family **Ichneumonidae**

Subfamily **Tersilochinae**

Genus ***Probles*** Förster, 1869

***Probles (Euporizon) chernetsovi* sp. nov.**

(Figs 1–10)

*Holotype*. Female, **Central Vietnam, Ha Tinh Prov.**, Vu Quang National Park, 18°20'45"N, 105°26'39"E, 59 m, Malaise trap 3, 22.IX–6.X.2009, coll. C. v. Achterberg & R. de Vries, RMNH'09 (RMNH).

*Paratypes*. **Central Vietnam**: 1 female, same label as holotype (RMNH); 1 female, same locality, date and collectors, N 18°21'02", E 105°26'33", 50 m, Malaise trap 9 (RMNH); 10 females, same locality and collectors, various traps, 104–180 m, 24.IX–5.X.2009, coll. C. v. Achterberg & R. de Vries, (8 specimens in RMNH, 2 ones in ZIN); 1 female, same locality and collectors, 97 m, 23.IX–5.X.2009 (RMNH).

*Etymology*. The species is named in honour of a well-known Russian ornithologist, researcher of the Biological Station "Rybachy" (Kaliningrad Prov., Russia), Nikita Chernetsov.

*Comparative diagnosis*. ***Probles chernetsovi* sp. nov.** is immediately distinguished from all other species of the genus (as well as any species of the subfamily) by its strongly clavate antennal flagellum (Fig. 2) with ventral surfaces of thickened subapical flagellomeres uniformly covered with unusual sensillae (Fig. 9, arrow); such sensillar areas are unknown in other tersilochine species. The new species also possesses a remarkable short ovipositor with a strong dorsal subapical tooth and lower valve ventrally expanded (Fig. 8).

*Description*. *Female*. Body length 3.2–5.3 mm (3.25 mm in holotype), fore wing length 2.5–3.5 mm (2.5 mm in holotype).

Head strongly tapered behind eyes in dorsal view (Fig. 3); temple 0.50–0.55 times as long as eye width. Clypeus lenticular (Fig. 4), about 2.8 times as broad as high, flat in lateral view, separated from face by distinct groove, smooth and shining in lower half, and coriaceous or very finely granulate with scattered punctures in upper half. Mandible slender, weakly tapered towards apex, with upper tooth much longer than lower one. Malar space very short, 0.3–0.4 times as long

as basal mandibular width. Antennal flagellum (Fig. 2) slender basally and conspicuously clavate apically (strongly compressed laterally and weaker depressed dorso-ventrally), with 20–23 flagellomeres (20 in holotype); subbasal flagellomeres 1.6–1.8 times as long as broad; 7–8 subapical flagellomeres about as long as broad; 8–9 apical flagellomeres on ventral side uniformly and densely covered with unusual sensillae, without sensillae placodea (Fig. 9, arrow); thus, this ventral flagellar areas seeming densely granulate in light microscope and clearly differ from other surfaces of flagellomeres covered with sensillae placodea and setiform sensillae; subapical flagellomeres 1.4–1.8 times broader than subbasal flagellomeres; flagellomeres 1 to 3 with distinct subapical finger-shaped structures on outer surface (Fig. 2, arrow). Face and frons strongly granulate, dull, impunctate. Vertex with shallow or strong granulation, dull or weakly shining, impunctate or with fine punctures laterally. Temple with shallow but distinct punctures, smooth and shining between punctures. Occipital carina complete. Hypostomal carina completely absent.

Mesoscutum strongly granulate, dull, with dense punctures which are sometimes indistinct because of granulation (especially in small specimens). Notaulus with weak irregular wrinkles. Scutellum with lateral carinae developed in its anterior four-tenths or half. Mesopleuron centrally (above foveate groove) punctate on more or less smooth and shining background, peripherally granulate, weakly shining to dull. Foveate groove of mesopleuron S-curved, extending from anterior margin of mesopleuron to base of mid coxa, with coarse transverse wrinkles; deep and very broad anteriorly, narrower and usually less deep posteriorly (Fig. 5). Propodeum with strong basal keel which is about 0.6 times as long as apical area (Fig. 7); transverse carina usually with adjacent short wrinkles; dorsolateral area granulate, dull or weakly shining, sometimes finely punctate; apical area widely pointed or rounded anteriorly, more or less flat, granulate, usually with transverse or irregular wrinkles; apical longitudinal carinae complete or incomplete (vanishing anteriorly). Propodeal spiracle adjacent to pleural carina or separated from it by one diameter of spiracle.



**Figs. 1–6.** *Probles chernetsovi* sp. nov., female, holotype (1, 5) and paratype (2–4, 6). **1**, habitus, lateral view; **2**, antennae, ventrolateral view (finger-shaped structures, arrows); **3**, head, dorsal view; **4**, head, front view; **5**, mesopleuron, lateral view; **6**, wings. Scale bar: 1.0 mm.

Fore wing (Figs 6, 10) with second recurrent vein (2m-cu) postfurcal to almost interstitial. Metacarpus (R1) reaching tip of wing. First abscissa of radius (Rs+2r) straight, longer than

width of pterostigma. Intercubitus (2rs-m) moderately thick, usually longer than abscissa of cubitus between intercubitus and second recurrent vein (abscissa of M between 2rs-m and 2m-cu).



**Figs. 7–10.** *Probles chernetsovi* sp. nov., female, holotype (7, 8) and paratype (9, 10). 7, propodeum, dorsolateral view; 8, metasoma with ovipositor, lateral view; 9, apices of flagella (ventral view, sensillar area, arrow); 10, wings. Scale bar: 1.0 mm.

Hind wing with nervellus (cu1&cu-a) weakly reclivous.

Legs slender. Spurs of hind tibia straight. Tarsal claws weakly curved, not pectinate.

First metasomal tergite very slender, entirely smooth and shining, 4.6 times as long as posteriorly broad; petiole rounded in cross-section; post-petiole in dorsal view clearly broader than petiole. Glymma small and deep, situated in distal 0.7 of first tergite, joining by thin and sharp furrow to ventral part of postpetiole (Fig. 8). Second tergite 1.35 times as long as anteriorly broad. Thyridial depression about 2.5 times as long as broad. Ovipositor short, weakly upcurved, with lower valve

ventrally conspicuously expanded (Fig. 8), strong dorsal subapical tooth and one or a few fine teeth ventrally; sheath about 0.9 times as long as first tergite.

Head and mesosoma black; lower 0.4–0.5 of clypeus, mandible (teeth reddish black) and mouthparts yellow; tegula brownish yellow. Antenna yellow or pale brown basally to brown or dark brown apically, yellowish on ventral side basally. Pterostigma brown. Legs yellow to brownish yellow, hind coxa sometimes slightly reddish or brownish. First tergite brownish black. Metasoma behind first segment yellow to brownish yellow, second tergite anteriorly with dark brown or

blackish mark on dorsal side, and following tergites with similar dark marking weaker.

*Male.* Unknown.

*Variation.* The species is rather variable in structure and size, though important diagnostic characters are quite stable. Sometimes mesopleuron with posterior half of foveate groove very shallow or vanishing, thus only in anterior half of mesopleuron foveate groove is distinct. Propodeal spiracle in one paratype separated from pleural carina by almost 2.5 times diameter of spiracle.

*Distribution.* Vietnam.

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