Proceedings of the Zoological Institute RAS
Vol. 321, No. 4, 2017, pp. 365–370

УДК 595.792.13

A NEW SPECIES OF *ALLOPHRYS* FÖRSTER, 1869 (HYMENOPTERA: ICHNEUMONIDAE: TERSILOCHINAE) WITH LARGE PROPODEAL SPIRACLES FROM INDONESIA

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ABSTRACT

Allophrys Förster, 1869 is a moderately large tersilochine genus (Hymenoptera: Ichneumonidae: Tersilochinae) distributed mainly through the world tropics. Three species of *Allophrys* were known from the Oriental region hitherto: *A. bruneiensis* Khalaim, 2011 (Brunei), *A. occipitata* Khalaim, 2011 (Vietnam and East India) and *A. cantonensis* Reshchikov et Yue, 2017 (South China). In this paper, a new species of *Allophrys*, *A. meggoleuca* sp. nov. from Sulawesi Island in Indonesia, is described and illustrated. It differs from other Oriental species of the genus by its large propodeal spiracles, similar to those in the genus *Meggoleus* Townes, 1971. *Allophrys meggoleuca* sp. nov. is similar to the Afrotropical *A. townesi* (Khalaim, 2007), which also possesses enlarged propodeal spiracles, but differs from this species by its slender antennal flagellum (robust with shortened flagellomeres in *A. townesi*), propodeum with basal area (basal keel in *A. townesi*) and longer metacarpus in the fore wing (short and not reaching tip of the wing in *A. townesi*). Additionally, propodeal spiracles in *A. townesi* are much larger than those in *A. meggoleuca*. The small genus *Meggoleus* comprises three Neotropical species occurring from Guatemala to Peru and South Brazil, and a single Afrotropical species, *M. townesi* Khalaim, 2007 known only from Gabon. The Afrotropical species *M. townesi* Khalaim, 2007 is transferred to the genus *Allophrys* (comb. nov.). Colour illustrations of this species are provided for the first time.

Key words: Asia, new combination, Oriental Region, parasitoids, Sulawesi, taxonomy

НОВЫЙ ВИД *ALLOPHRYS* FÖRSTER, 1869 (HYMENOPTERA: ICHNEUMONIDAE: TERSILOCHINAE) С КРУПНЫМИ ДЫХАЛЬЦАМИ ПРОПОДЕУМА ИЗ ИНДОНЕЗИИ

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РЕЗЮМЕ

Allophrys Förster, 1869 – умеренно большой род терзилохин (Hymenoptera: Ichneumonidae: Tersilochinae), распространенный главным образом в тропических регионах мира. До настоящего времени из Ориентальной области были известны три вида этого рода: *A. bruneiensis* Khalaim, 2011 (Бруней), *A. occipitata* Khalaim, 2011 (Вьетнам и Восточная Индия) и *A. cantonensis* Reshchikov et Yue, 2017 (Южный Китай). В этой работе описан и проиллюстрирован новый вид рода *Allophrys*, *A. meggoleuca* sp. nov., с острова Сулавеси в Индонезии. Этот вид отличается от других ориентальных видов рода крупными дыхальцами проподеума, сходными с таковыми рода *Meggoleus* Townes, 1971. *Allophrys meggoleuca* sp. nov. похож на афротропический вид *A. townesi* (Khalaim, 2007), также обладающий увеличенными дыхальцами проподеума, но отличается от последнего стройным жгутиком антенны (крепкий с укороченными флагелломерами у *A. townesi*), проподеумом с ба-

зальным полем (с базальным килем у *A. townesi*) и передним крылом с длинным метакарпом (у *A. townesi* метакарп короткий, не достигает вершины крыла). Кроме того, дыхальца проподеума у *A. townesi* заметно крупнее, чем у *A. meggoleuca*. Маленький род *Meggoleus* содержит три неотропических вида, распространенных от Гватемалы до Перу и Южной Бразилии, а также единственный афротропический вид – *M. townesi* Khalaim, 2007, известный только из Габона. Афротропический вид *M. townesi* помещен в род *Allophrys* (comb. nov.). Впервые даны цветные фотографии этого вида.

Ключевые слова: Азия, новая комбинация, Ориентальная область, паразитоиды, Сулавеси, таксономия

INTRODUCTION

Allophrys Förster, 1869 is a moderately large tersilochine genus with seven described and several undescribed species in Costa Rica (Khalaim and Broad 2012), including one species occurring from southeastern U.S.A. to northern Argentina (Horstmann 2010), one species in West Indies, nine species in the Afrotropical region (Khalaim 2013a, 2013b), three species (including one morphospecies) in Japan (Khalaim 2017) and three species in the Oriental region (Khalaim 2011; Khalaim and Belokobylskij 2017; Yue et al. 2017). Gauld (1984) also mentioned two undescribed species of *Allophrys* from Australia.

In the Oriental region, *A. bruneiensis* Khalaim, 2011 is known only from Brunei, *A. occipitata* Khalaim, 2011 occurs in Vietnam and East India (Khalaim 2011) and *A. cantonensis* Reshchikov et Yue, 2017 was recently described from South China (Yue et al. 2017). The genus *Allophrys* was also reported from Sabah Province of Malaysia (Horstmann et al. 2005). The aim of this work is to describe a new species of *Allophrys* from Indonesia, revise the only Afrotropical species of the genus *Meggoleus* Townes, 1971 and transfer it to *Allophrys*.

MATERIAL AND METHODS

A new species of the genus *Allophrys* represented by a single female in the collection of Naturalis, Leiden, the Netherlands (RMNH) was discovered. Two paratype females of *Meggoleus townesi* Khalaim, 2007 were examined from the collection of the Zoological Institute RAS, St. Petersburg, Russia (ZIN).

Morphological terminology follows that of Townes (1969) with changes according to Khalaim (2011). Photographs were taken in ZISP, with a Canon EOS 70D digital camera attached to an Olympus SZX10 stereomicroscope. Images were assembled with Helicon Focus 6 Pro software.

SYSTEMATICS

Family Ichneumonidae Latreille, 1802

Subfamily Tersilochinae Schmiedeknecht, 1910

Genus *Allophrys* Förster, 1869

Allophrys meggoleuca sp. nov.

(Figs. 1–7)

Holotype. Female – INDONESIA; Sulawesi I., near Mamasa, Penannang, 1650 m, Malaise trap 21, 10–22 April 1991, coll. C. v. Achterberg, RMNH'91 (RMNH).

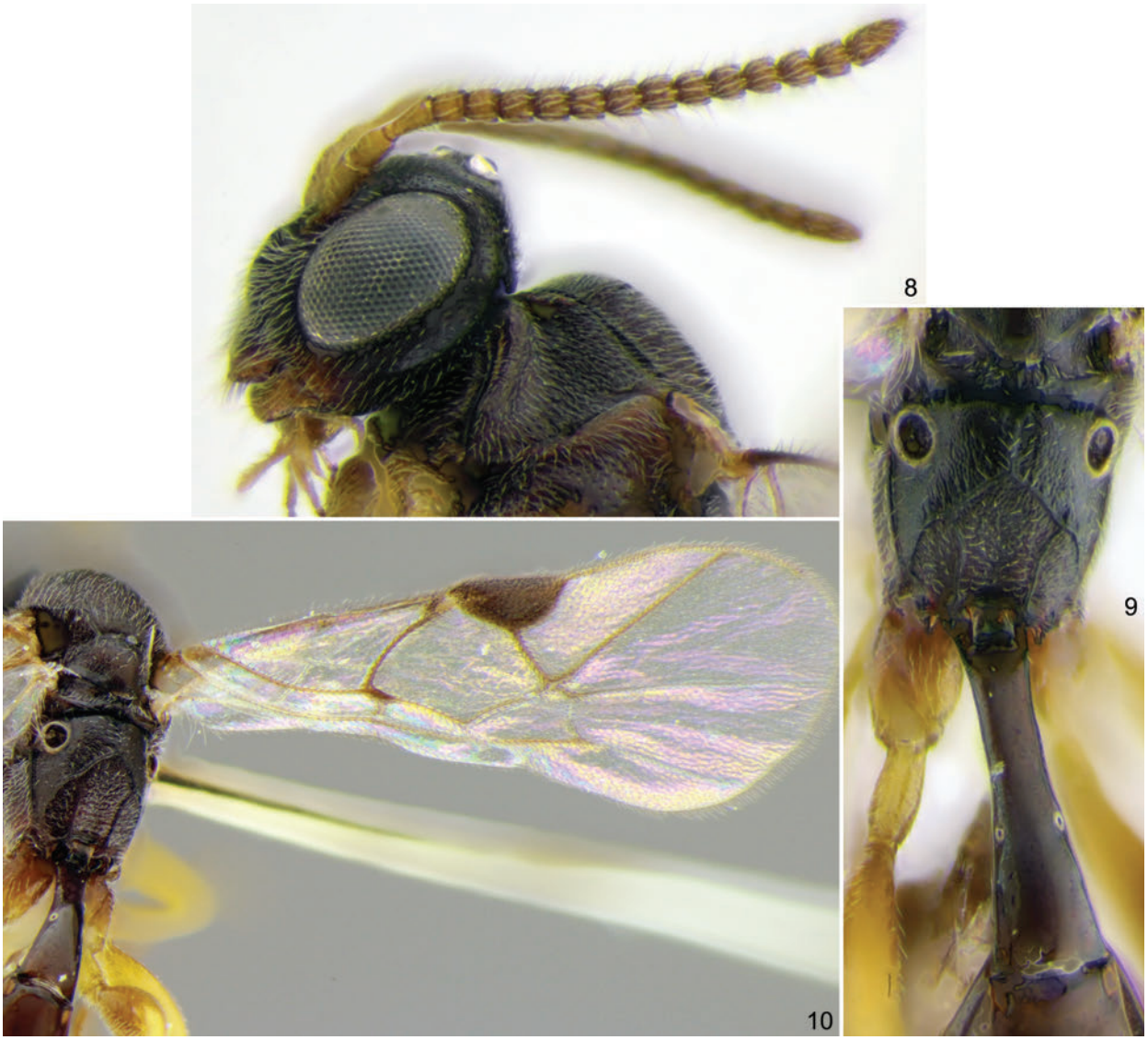
Etymology. The species is named after its similarity to the genus *Meggoleus*.

Differential diagnosis. *Allophrys meggoleuca* is immediately distinguished from other Oriental species in this genus by its enlarged propodeal spiracles (Fig. 7) similar to those in the genus *Meggoleus* Townes. The species is similar to the Afrotropical *A. townesi* (Khalaim, 2007), which also possesses enlarged propodeal spiracles, but differs from this species by its slender antennal flagellum (robust with shortened flagellomeres in *A. townesi* – Fig. 8), propodeum with basal area (basal keel in *A. townesi* – Fig. 9) and longer metacarpus in the fore wing (short and not reaching tip of the wing in *A. townesi* – Fig. 10). Additionally, propodeal spiracles in *A. townesi* are much larger than those in *A. meggoleuca* (compare Figs. 7 and 9).

Description. Female (holotype). Body length 4.7 mm. Fore wing length 3.0 mm.

Head strongly tapered, weakly rounded behind eyes in dorsal view; temple 0.5 times as long as eye width. Clypeus (Fig. 3) 2.9 times as broad as long, lenticular, convex in lateral view, separated from face by sharp groove, smooth, with fine punctures in upper 0.4. Mandible slender, with upper tooth much longer than lower. Malar space 0.7–0.8 times as long as basal mandibular width. Antennal flagellum

Figs. 1–7. *Allophrys meggoleuca* sp. nov., female, holotype. 1 – body, lateral view; 2 – head, postero-ventro-lateral view; 3 – head, anterior view; 4 – head with antenna, lateral view; 5 – hind leg, lateral view; 6 – mesopleuron, ventrolateral view; 7 – propodeum and first tergite, dorsolateral view.



Figs. 8–10. *Allophrys townesi* (Khalaim, 2007), female, paratype. 8 – head with antenna, lateral view; 9 – propodeum and first tergite, dorsal view; 10 – mesosoma with fore wing and first tergite, dorsal view.

(Fig. 4) slender, slightly tapered towards apex, with 14 flagellomeres; flagellomeres 2–4 about 1.8 times and subapical flagellomeres 1.5–1.6 times as long as broad. Face, frons, vertex and temple finely granulate, dull to weakly shining, with inconspicuous (because of granulation) punctures. Occipital carina complete ventrally and laterally, completely absent dorsally. Hypostomal carina strong, complete (Fig. 2).

Mesoscutum with fine and sharp punctures, very finely granulate and weakly shining. Scutellum with lateral longitudinal carinae present in its anterior 0.3. Notaulus with strong wrinkle anterolaterally (Fig. 4). Foveate groove extending almost entire length of mesopleuron, arcuate, strongly oblique in anterior half and almost horizontal posteriorly, deep and broad, with strong transverse wrinkles (Fig. 6). Mesopleuron smooth and shining, with very fine (mostly inconspicuous) punctures. Propodeum with short, narrow, widened anteriorly and irregularly wrinkled basal area, which is about 0.35 times as long as apical area (Fig. 7); basal longitudinal carinae indistinct; propodeum finely granulate, impunctate,

dull. Propodeal spiracle large (Figs. 1, 7), separated from pleural carina by about one diameter of spiracle. Apical area distinctly impressed along midline, narrowly rounded anteriorly; apical longitudinal carinae distinct, reaching transverse carina anteriorly.

Fore wing with second recurrent vein (*2m-cu*) slightly postfurcal, weakly pigmented in anterior 0.8. Pterostigma broad, in the form of elongated triangle. Intercubitus (*2rs-m*) thick. First abscissa of radius (*Rs*+*2r*) slightly arcuate, about as long as width of pterostigma. First and second sections of radius (*Rs*+*2r* and *Rs*) meeting at right angle. Metacarpus (*R*1) reaching tip of the wing. Second abscissa of postnervulus present. Hind wing with nervellus (*cu*1&*cu-a*) weakly reclivous, slanted about 70° from horizontal. Legs slender (Fig. 5).

First tergite (Figs. 1, 7) very slender, almost 6.0 times as long as posteriorly broad, round in cross-section, polished, its upper margin in lateral view more or less straight in basal 0.7 and arcuate in apical 0.3; spiracle slightly enlarged. Glymma absent. Second tergite 3.1 times as long as anteriorly broad. Thyridial depression about 2.5 times as long as broad. Ovipositor short and slender, weakly and evenly upcurved, with shallow dorsal subapical depression; sheath almost 0.8 times as long as first tergite.

Head and mesosoma dark reddish brown. Palpi, mandible (teeth dark red) and lower 0.8 of clypeus brownish yellow. Scape and pedicel of antenna yellow, flagellum pale brown basally to almost black apically. Tegula brownish yellow. Pterostigma brown. Legs yellow, hind coxa slightly brownish. First metasomal tergite brown. Metasoma behind first tergite predominantly brownish yellow; tergite 2 dorsally and laterally and tergite 3 dorsally extensively brown.

Male. Unknown.

Distribution. Oriental species: Indonesia (Sulawesi).

Allophrys townesi (Khalaim, 2007), comb. nov.

(Figs. 8–10)

Material. GABON: 2 females (paratypes, ZIN), Ogoové-Maritime Prov., Moukalaba-Dougoua Reserve, 12.2 km 305° NW of Doussala, 2°17.00′S, 10°29.83′E, 110 m, coastal lowland rainforest, Malaise trap and sweep, 25 February – 19 March 2000, coll. S. van Noort.

Remarks. The small genus *Meggoleus* Townes, 1971 comprises three Neotropical species occurring from Guatemala to Peru and South Brazil (Alvarado 2012; Khalaim and Broad 2012), and a single Afrotropical species, *M. townesi* Khalaim, 2007 known only from Gabon (Khalaim 2007). *Meggoleus townesi* possesses first metasomal tergite without glymmae, similar to those in the genus *Allophrys* (genus group "*Phradis*"), while all Neotropical species of *Meggoleus* have distinct glymma joining by a furrow to the ventral part of the postpetiole (genus group "*Tersilochus*"). The discovery of *A. meggoleuca* from Indonesia, a typical species of the genus *Allophrys* with enlarged propodeal spiracles (less enlarged than in all *Meggoleus* species, including *M. townesi*), made it evident that enlarged spiracles appeared independently in *Allophrys* and *Meggoleus*, and *M. townesi* is a highly specialized species of the genus *Allophrys* (comb. nov.).

I have seen undescribed species with small and weakly enlarged propodeal spiracles in unidentified tersilochine specimens from the Neotropical region, which are structurally similar to *Meggoleus*. The Neotropical fauna of the genus *Meggoleus* requires revision, and probably this genus will be expanded to include unspecialized taxa with small propodeal spiracles.

Distribution. Afrotropical species: Gabon.

ACKNOWLEDGEMENTS

I am thankful to Frederique Bakker, curator of the RMNH ichneumonid collection, for her kind help during my visit to the Naturalis in May 2015 and loan of valuable material, and to Gavin Broad (the Natural History Museum, London, UK) for his corrections of the manuscript. The study was performed in the frames of the state research project AAAA-A17-117030310210-3 and supported by the Russian Foundation for Basic Research (grant no. 16-04-00197).

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Submitted July 18, 2017; accepted October, 24, 2017.