Tuberidelus gen. nov. (Hymenoptera: Braconidae: Euphorinae) from Thailand

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Key words: Braconidae; Euphorinae; *Tuberidelus;* Oriental; Thailand.
Tuberidelus flavicephalus gen. nov. & spec. nov. of the subfamily Euphorinae (Hymenoptera: Braconidae) from Thailand is described and illustrated.

Introduction

The subfamily Euphorinae is a cosmopolitan braconid subfamily with about 38 known genera, which are koinobiont endoparasites of larval Lepidoptera (Meteorini), of larval and adult Coleoptera, and mainly adult Hemiptera, Hymenoptera, Neuroptera, Orthoptera and Psocoptera (van Achterberg, 1985, 1992 & 1993; Shaw 1985, 1987, 1988 & 1996). So far, the Euphorinae of the Oriental region in general have never been treated, except for the genera *Zele* Curtis, 1832 (van Achterberg, 1979; Chen et al., 1990; Chou & Chou, 1993), and *Aridelus* Marshall, 1887 (Papp, 1965; Chou, 1987). The purpose of this paper is to describe a new genus from this region, which recently came to our attention when the first author visited the Natural History Museum, London, to examine the Oriental euphorine specimens. At first glance, the new genus resembles genera such as *Aridelus* Marshall, 1887, and *Ussuraridelus* Tobias & Belokobylskij, 1981, because of its completely reticulate mesosoma. However, the distinctly tuberculate propodeum, the aberrant mandibular teeth, the postfurcal vein cu-a of hind wing, and the very narrow marginal cell of fore wing allow an easy separation of the new genus from these two genera as well as from all other euphorine genera. The new genus runs in the MS-key by the second author to the *Perilitus*-group, to which it seems to belong as an aberrant member.

For the morphological terminology used in this paper, see van Achterberg (1993).

Descriptions

Tuberidelus gen. nov.
(figs 1-11)

Type species: *Tuberidelus flavicephalus* spec. nov.

Etymology.— From Latin "tuber" (swelling) and the generic name *"Aridelus"* because it possesses a distinctly tuberculate propodeum and it is superficially similar to the genus *Aridelus*. Gender: masculine.

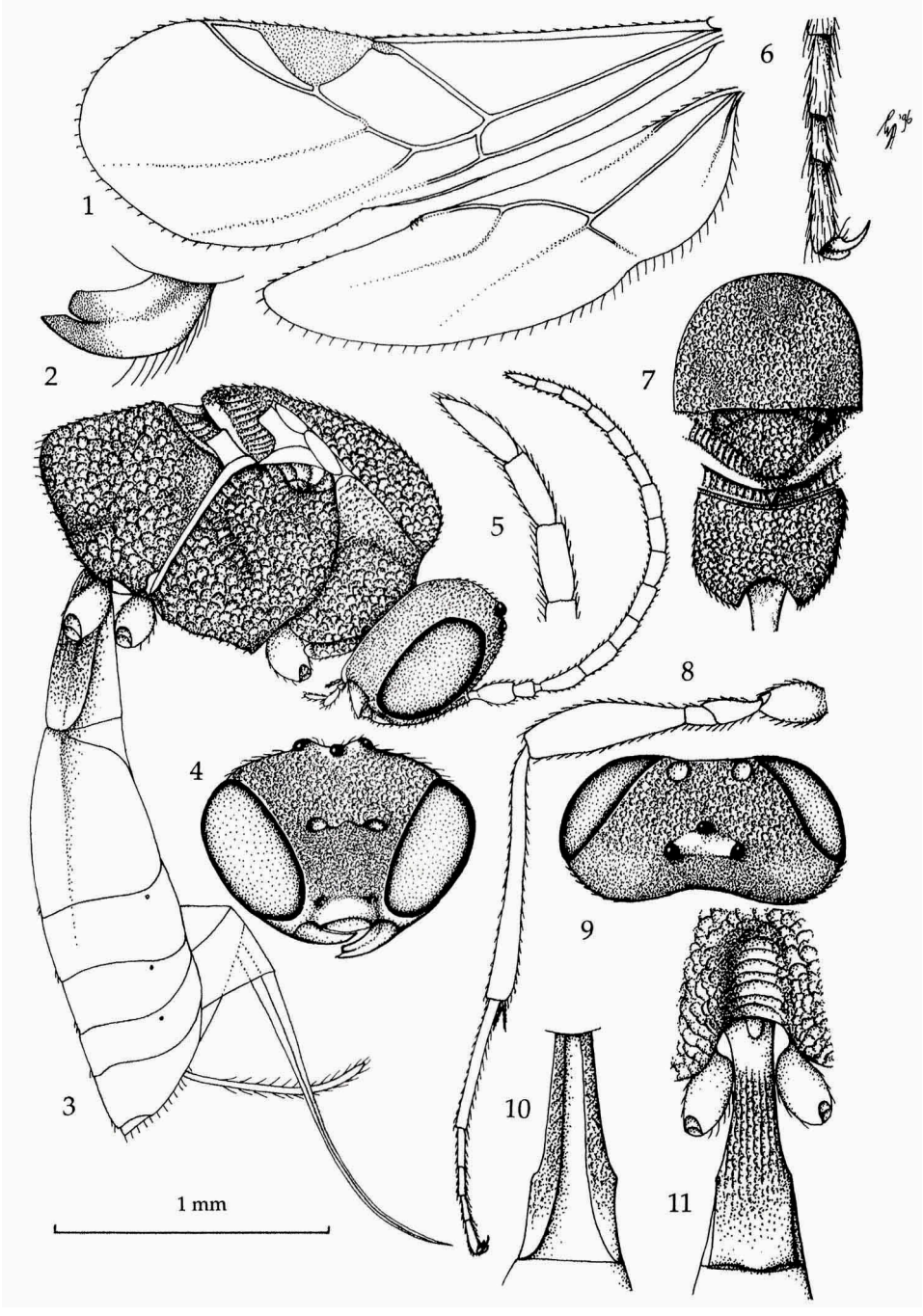
Diagnosis.— Length of body about 3.5 mm, of fore wing about 2.5 mm; head

about as wide as mesoscutum; antenna much shorter than body, with 15 segments, scapus short (remaining below upper level of eye; fig. 3), 2.0 times as long as wide, oblique apically, pedicellus 0.5 times as long as scapus, third segment distinctly widened apically, slightly curved, apical segment of antenna without a spine; palpi minute (fig. 3), maxillary palp with 4 segments (with penultimate segment much wider than apical segment), and labial palp with 2 segments; occipital carina present, shortly interrupted medio-dorsally, ventrally curved towards and joining hypostomal carina; eyes large (figs 4, 9), glabrous, in frontal view strongly convergent (fig. 4); vertex narrow; frons flat, wide, reticulate; distance between antennal sockets 1.4 times diameter of antennal socket; face narrow; epistomal suture distinct; clypeus small; malar suture absent; mandibles medium-sized, strongly twisted, only with fine ventral carina, triangular, with two wide teeth, inner tooth truncate apically (fig. 2); mesosoma nearly completely coarsely reticulate; prepectal carina present; postpectal carina absent, but with large curved carinae in front of middle coxae; middle coxae widely separated from each other; precoxal sulcus and notauli absent; prescutellar suture small, narrow and shallow; transverse medio-posterior depression of scutellum indistinct; propodeum strongly protruding postero-dorsally in lateral view (fig. 3), medio-posterior impression deep (fig. 11); pterostigma wide, about 2.0 times as long as wide (fig. 1); marginal cell of fore wing very narrow (fig. 1); vein 1-R1 of fore wing short; vein r of fore wing indistinct (fig. 1); veins 1-SR+M, r-m and apex of vein 2-1A of fore wing absent (fig. 1); vein SR1+3-SR of fore wing nearly straight; vein M+CU1 of fore wing completely sclerotized; vein cu-a of hind wing slightly postfurcal to vein 1r-m (fig. 1); vein 1-SC+R of hind wing unsclerotized and partly absent (fig. 1); vein 1-1A of hind wing absent, except basally; vein SR1 of hind wing basally distinctly curved, unsclerotized; legs slender, femora moderately robust (fig. 8); hind tibial spurs straight and setose; claws simple, slender (fig. 6); first metasomal tergite slender, gradually widened from base to apex (fig. 11), ventrally entirely open (fig. 10), spiracles behind middle of tergite, somewhat raised, laterope and dorsope absent (fig. 11); metasoma inserted between hind coxal cavities; second and following tergites smooth; second tergite without sharp lateral fold (fig. 3); hypopygium medium-sized, glabrous (fig. 3); ovipositor sheath slender, apically slightly widened and flat, sparsely setose, its length about 0.4 times fore wing; ovipositor slender, apically distinctly curved downwards, without distinct subapical notch dorsally.

Biology.— Unknown.

Distribution.— Oriental region; only type species from Thailand known.

Note.— The new genus is similar to the genera *Aridelus* Marshall and *Ussuraridelus* Tobias & Belokobylskij by the largely reticulate propodeum, but can be easily distinguished by its short antenna with 15 segments (18 segments in both other genera), by the wide and truncate second tooth of mandible (narrow and acute), by the strongly convergent eyes (much less in both genera), by the very narrow marginal cell of fore wing (basally distinctly wider), by the absence of veins 1-SR+M and r-m of fore wing (in *Aridelus* both veins are present, in *Ussuraridelus* vein 1-SR+M is present and r-m absent), by the postfurcal vein cu-a of hind wing (antefurcal), by the strongly protruding postero-dorsal corners of propodeum in lateral view (rounded, not tuberculate), and by the ventrally entirely open first metasomal tergite (closed).



Figs 1-11, *Tuberidelus flavicephalus* gen. nov. & spec. nov., ♀, holotype. 1, wings; 2, mandible, dorsal aspect; 3, habitus, lateral aspect; 4, head, frontal aspect; 5, apex of antenna; 6, inner hind claw; 7, mesosoma, dorsal aspect; 8, hind leg; 9, head, dorsal aspect; 10, first metasomal tergite, ventral aspect; 11, first tergite, dorsal aspect. 1, 3, 8: 1.0 × scale-line; 2, 5, 6: 2.5 ×; 4, 9, 10, 11: 1.1 ×; 7: 0.7 ×.

Tuberidelus flavicephalus spec. nov.
(figs 1-11)

Material.— Holotype (BMNH), ♀, "Thailand, Huai Kha Khaeng, 400 m, iii.1986, M. Allen".

Description.— Holotype, ♀, length of body 3.7 mm, of fore wing 2.3 mm.

Head.— Width of head in dorsal view 2.5 times its length; antennal segments 15, about as long as comined length of head and mesosoma, shorter than fore wing (figs 1, 3), length of third segment 1.3 times fourth segment, length of third, fourth and penultimate segments 3.3, 2.7 and 2.7 times their width, respectively (figs 3, 5); length of maxillary palp 0.2 times height of head; occipital carina present, shortly interrupted medio-dorsally, angular in dorsal view; OOL:OD:POL = 18:5:14; eyes large, length of eye in dorsal view 2.7 times temple (fig. 9); temple distinctly narrowed behind eyes; vertex narrow dorsally (figs 3, 9); temple and vertex superficially punctate-rugose; frons wide, finely reticulate, largely flat; face finely transversely rugulose, dorso-medailly with a minute protuberance, its width 1.1 times its height (fig. 4); intertentorial line 3.2 times tentorial-ocular line; epistomal suture distinct; clypeus small, slightly convex, largely smooth, ventral margin thin; length of malar space 0.35 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; mesosoma entirely reticulate.

Wings.— Fore wing: length of vein 1-R1 0.4 times length of pterostigma; r:2-SR:SR1+3-SR = 2:18:35; 1-CU1:2-CU1 = 6:19. Hind wing: 1r-m:2-SC+R = 10:16.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 3.8, 10.9 and 10.6 times their width, respectively (fig. 8); length of hind tibial spurs 0.30 and 0.25 times hind basitarsus.

Metasoma.— Length of first terigte 2.5 times its apical width, its surface basally distinctly longitudinally punctate-rugose, subapically punctate, and apically smooth; length of ovipositor sheath 0.35 times fore wing, and 1.1 times first tergite.

Colour.— Dark reddish-brown; head brownish-yellow dorsally, ventrally (including mandibles and palpi) yellow; tegulae yellowish; antenna dark brown, basal three segments yellowish-brown; legs yellow, hind coxa, middle and hind femora dark brownish; ovipositor sheath dark brown; wing membrane hyaline, pterostigma dark brown; vein C+SC+R of fore wing brownish, remainder of veins pale yellow.

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