

A New Species of *Uenoa* (Trichoptera: Uenoidea) from Taiwan

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Li-Peng Hsu and Chin-Seng Chen (1997) A new species of *Uenoa* (Trichoptera: Uenoidea) from Taiwan. *Zoological Studies* 36(2): 123-126. The caddisfly, *Uenoa taiwanensis* n. sp., was formerly recorded as *Uenoa tokunagai* or *Uenoa* sp. in Taiwan. After comparing the male and female genitalia, and characteristics of the larvae, we found this to be a new species. The male, female, and larva are described and illustrated.

Key words: *Uenoa*, Taxonomy, New species.

Only 1 species of the caddisfly genus, *Uenoa* has been known from Taiwan. For a long time it was recorded as the Japanese species *Uenoa tokunagai* Iwata (Yang et al. 1985) or *Uenoa* sp. (Chen 1990). Chen (1990) stated that only the number and arrangement of setae on segment VIII of the female and the number of setae on the anal proleg of the larvae are different from *U. tokunagai*. He deferred a decision on the identity of the species until a male could be captured. We captured a male and found this to be a new species. The male genitalia are quite different from that of *U. tokunagai* and the female also differs in several morphological characters. All of the terminology for the adult and larvae follows that of Wiggins et al. (1985). The holotypes and some paratypes are deposited in the National Museum of Natural Sciences, Taichung, Taiwan (NMNS); other paratypes are deposited in the Department of Biology, Tunghai University, Taiwan (BTHU).

MATERIALS AND METHODS

All specimens were collected by the senior author, adults were captured by light traps or by sweeping with net along the riverside. Specimens are preserved in 75% alcohol. The abdomens of both male and female caddisflies were cleared in

hot 10% potassium hydroxide (KOH) at 90 °C for 15 min, then placed in glycerin for examination under a stereomicroscope, and sketched.

RESULTS

Uenoa taiwanensis n. sp.

Adult: Body dark brown, length 4.5-6.2 mm. Head (Fig. 1c, d) as in *U. tokunagai* except for oval shape of posterior pair of setal warts in both male and female; maxillary palpi of female 5-segmented, short in male and only 2-segmented. Thorax typical for the genus, except for rectangular shape of mesoscutellum, which differs from raindrop shape of *U. tokunagai*. Wings (Fig. 1a, b) uniformly brown, with brown or dark pubescence, forewing length 5-7.5 mm, discoidal cell triangular, size varied, M_1 separated from M_2 , apical forks I, II, and III present; nervulation of hindwing similar to that of *U. tokunagai*, length 4.5-6.5 mm.

Male genitalia (Fig. 2a-c): Tergite VIII bilobed, differing from other species in this genus. Segment IX short dorsally, inferior appendages stout, and shorter than in *U. tokunagai*, each with thick black setae at apex; segment X small, triangular in lateral view; preanal appendages large, base swollen, rectangular in lateral view; phallus short,

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slightly curved ventrad and with pointed apex, and with pair of stout lateral processes which are shorter than those of *U. tokunagai*.

Female genitalia (Fig. 2d-f): Segment VIII well developed, tergite sclerotized, sternite round, with pair of lateral finger-like processes; tergite IX small, sternite membranous; tergite X bifurcated; spermathecal sclerite thick sclerotized, rectangular, differing from that of *U. tokunagai*.

Larva (Fig. 1e-i): Head elongated, eyes rounded. Pronotum with 3 pairs of separated dark spots; mesonotum with pair of posterior sclerites; metanotal sclerites separated. Shape of thorax sclerites differing from those of *U. tokunagai*. Sclerite IX and anal proleg small. Case entirely of tough dark brown silk, transverse ridges sometimes not obvious, posterior opening constricted by silken membrane with rectangular central opening, dif-

fering from watch-glass shape on *U. tokunagai*.

Diagnosis: The Morphology of the adult and larva of this new species, *U. taiwanensis*, is very similar to that of *U. tokunagai* according to the descriptions of Wiggins et al. (1985), but the differences of this new species from *U. tokunagai* are as follows. Adult: 1. posterior setal warts rounded; 2. medium setal warts of pronotum rectangular; 3. scutellum setal wart oblong; 4. setal warts below antenna small; 5. male inferior appendage small and with stout black spines; 6. lateral process of male phallus short but stout; 7. female spermathecal sclerite rectangular and large. Larva: 8. shapes of pronotum, mesonotum and metanotum sclerites different; 9. posterior opening of larva case rectangular.

Types: Holotype ♂, Taichung, Shiern Stream, 700 m, 2-XI-1991, (NMNS). Paratypes 2♂♂ 7♀♀,

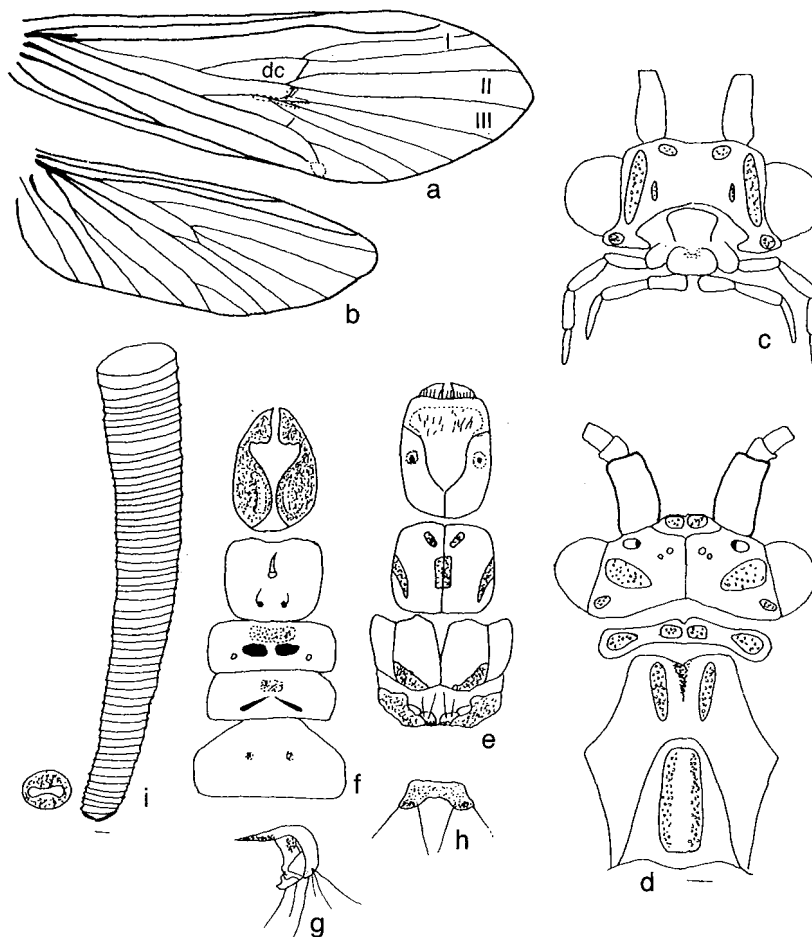


Fig. 1. *Uenoa taiwanensis* n. sp. a, male forewing (dc, discoidal cell; I, apical fork I; II, apical fork II; III, apical fork III); b, male hindwing; c, female head, frontal; d, female head and thorax, dorsal; e-i, larva: e, head and thorax, dorsal; f, head, thorax and 1st segment of abdomen, ventral; g, anal proleg; h, IX sclerite, dorsal; i, larva case, lateral; posterior end opening, caudal. *The scale lines on the figures represent 0.1 mm.

same data as holotype (NMNS); 1♂ 10♀♀, same locality as holotype, 4-X-1991, (BTHU); 7♀♀, same locality as holotype, 24-IX-1991, (NMNS).

Biology: Larvae live in small mountain streams, usually aggregating on the surface of rocks, especially during pupation. This species is found in almost all clean mountain streams in western and northeastern Taiwan. Adults rest beneath the leaves of plants near the riverside during the day, and became active at night.

Etymology: Latinization, *taiwanensis*, from Taiwan.

Remarks: This species is almost identical with *U. tokunagai* in almost all structures of the male, female and larva, but the male adult can be readily recognized by the shape of the phallus and a pair of stout inferior appendages; the adult female is difficult to distinguish from that of *U. tokunagai* in the field. Larvae and pupa can be easily recognized by the shape of the end-opening of the case, or by the sclerite of the thorax.

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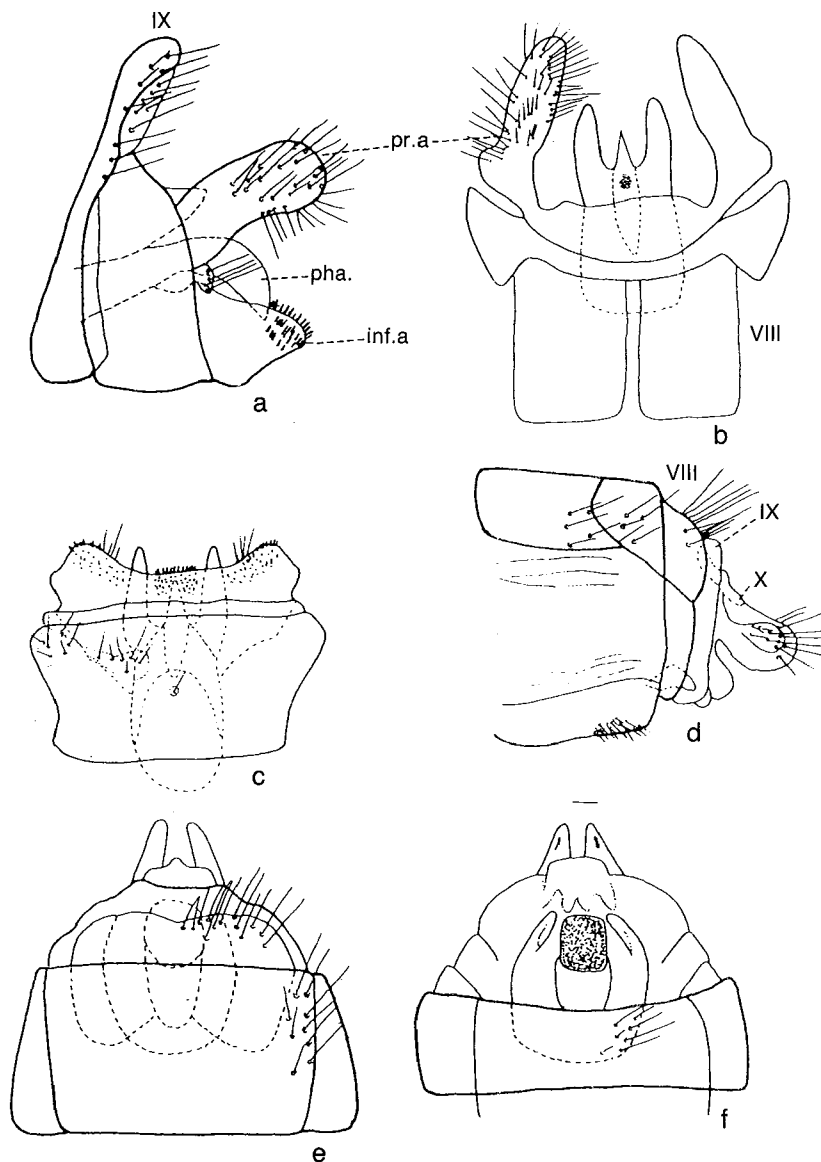


Fig. 2. *Uenoa taiwanensis* n. sp. a-c. male genitalia: a, lateral; b, dorsal; c, ventral (inf. a., inferior appendages; IX, segment IX; pha., phallus; pr. a., preanal appendages); d-f. female genitalia: d, lateral; e, dorsal; f, ventral (IX, segment IX; VIII, segment VIII; X, segment X). *The scale lines on the figures represent 0.1 mm.

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臺灣產黑管石蛾科之一新種 (毛翅目)

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本文描述一新種黑管石蛾—臺灣黑管石蛾 (*Uenoa taiwanensis*)，以往均認為本種與日本之德永黑管石蛾 (*Uenoa tokunagai*) 為同種，但作者採自臺中縣之標本發現此種成蟲與幼蟲均與德永黑管石蛾有明顯之不同，因而定為新種。文中描述其雌、雄成蟲及幼蟲之形態特徵及記述其部份生態及鑑別特徵。

關鍵詞：新種，分類，黑管石蛾。

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