

**CHOROTERPES (CHOROTERPES) PETERSI, A NEW SPECIES
OF LEPTOPHLEBIIDAE (INSECTA: EPHEMEROPTERA)
FROM CHINA**

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Abstract.—A new species, *Choroterpes (Choroterpes) petersi* (Ephemeroptera, Leptophlebiidae) from Hong Kong, China, is described and illustrated based on larval and adult specimens associated by laboratory rearing.

Key Words.—Ephemeroptera, Leptophlebiidae, *Choroterpes*, mayfly, new species, China.

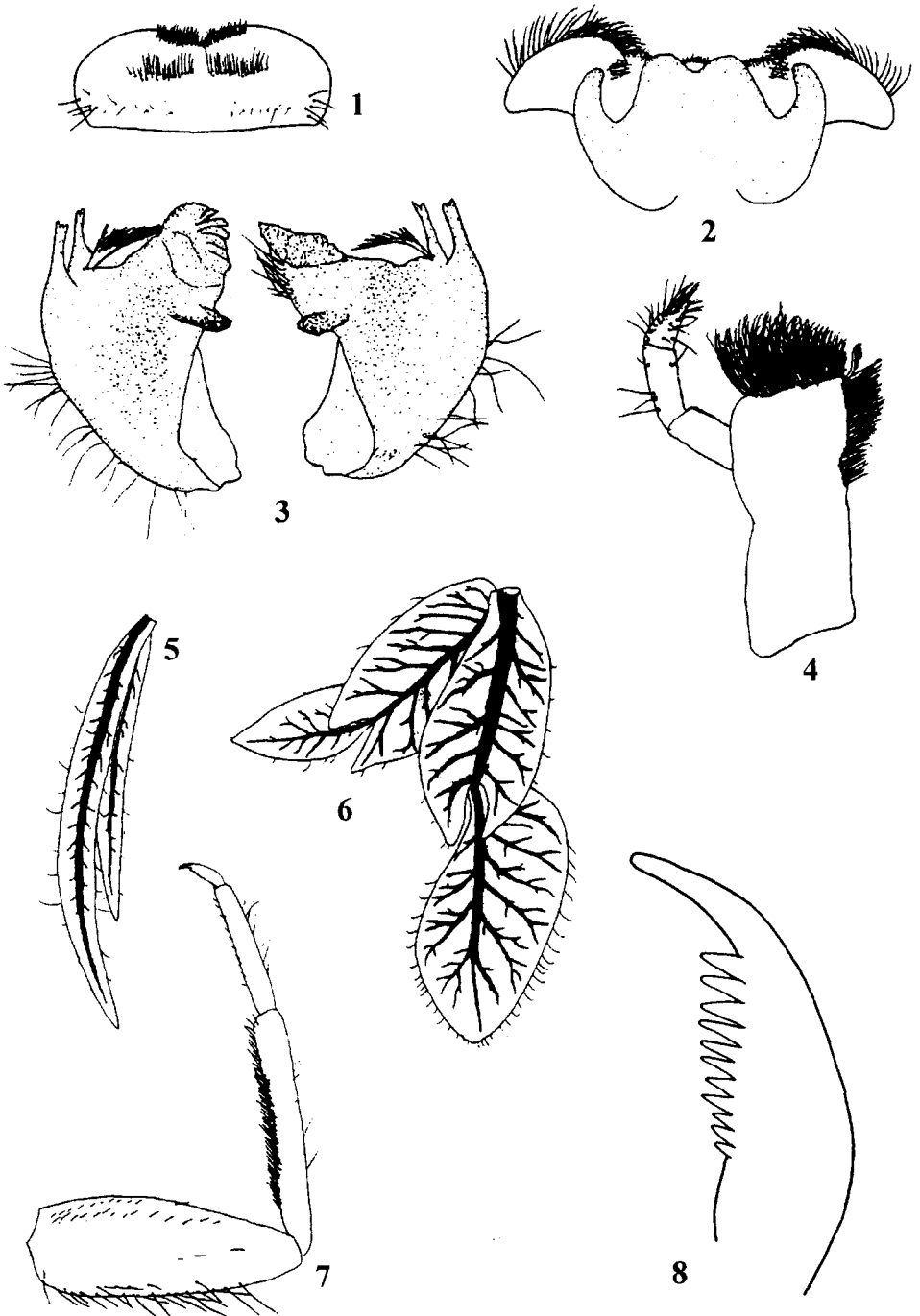
The genus *Choroterpes* Eaton is widely distributed, occurring in the Ethiopian, Oriental, Palearctic, Nearctic, and Neotropical regions (Peters & Edmunds 1964, 1970). Peters & Edmunds (1964) divided the genus into two subgenera, i.e., *Choroterpes* s. s. and *Euthraulus* s. s. Although *Choroterpes* s. s. is wide ranging (Peters & Edmunds 1964, 1970), few species of the subgenus have been reported from the Oriental region since *Choroterpes (Choroterpes) proba* Ulmer was recorded from Java and Sumatra (Ulmer 1940, You & Gui 1995). In this paper, we describe a new species, *Choroterpes (Choroterpes) petersi*, from Hong Kong, China, based on larval and adult material associated by laboratory rearing.

Abbreviations used for deposition of types are as follows: the Insect Collection of the Department of Entomology, South China Agricultural University, Guangzhou, China (SCAU); the Collection of Florida A & M University, Tallahassee, Florida, USA (FAMU).

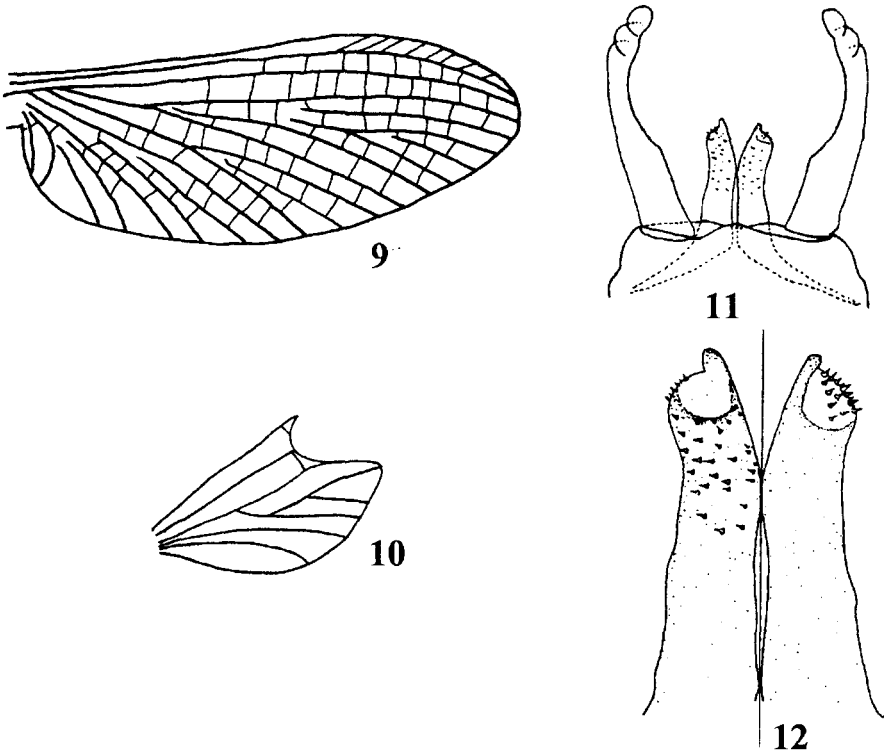
Choroterpes (Choroterpes) petersi Tong & Dudgeon, NEW SPECIES
(Figs. 1–12)

Types.—Holotype: male imago (adults are reared specimens in alcohol with larval exuviae); data: PEOPLE'S REPUBLIC OF CHINA. HONG KONG: Mirror Pool, nr. Bride's Pool, 28 Apr 1999, Xiaoli Tong; deposited: SCAU. Paratypes: PEOPLE'S REPUBLIC OF CHINA. HONG KONG: 2 male subimagos (from light-trap, 1 in SCAU, 1 in FAMU), Bride's Pool, 27 Jul 1987, David Dudgeon; 2 male subimagos (light-trap, 1 in SCAU, 1 in FAMU), Bride's Pool, 10 Aug 1987, David Dudgeon; 1 male imago (in SCAU, wings, foreleg, genitalia on slides), 3 male subimagos (in SCAU), 9 larvae (7 in SCAU, 2 in FAMU), locality and date as holotype, Xiaoli Tong; 1 male subimago and 5 larvae (in SCAU), locality as holotype, 18 Apr 1999, Xiaoli Tong.

Description.—Male imago. Body length 5.5 mm. Forewing length 6.0 mm. Caudal filament length 7.2 mm. Head capsule yellow-brown. Ocelli off-white with black basal rings. Antennae light yellow-brown. Upper portion of eyes greyish purple-brown, lower portion black. Thoracic nota yellow-brown, pleurae with dark brown markings. Legs pale. Forewings (Fig. 9) hyaline tinged with light brown basally, longitudinal veins light brown, C, S_c and R₁ veins slightly darker; crossveins pale. Vein of MA forked slightly less than 1/2 of distance from base to margin. Costal projection of hindwings (Fig. 10) well developed and acute, apex of projection located approximately 2/3 distance from base. Abdominal tergum 1 dark brown; terga 2–7



Figures 1-8. Larva of *Choroterpes (Choroterpes) petersi*, NEW SPECIES Figure 1. Labrum, dorsal view. Figure 2. Hypopharynx. Figure 3. Mandibles, dorsal view. Figure 4. Left maxilla. Figure 5. Gill I. Figure 6. Gill VI. Figure 7. Foreleg of larva. Figure 8. Enlarged larval tarsal claw.



Figures 9–12. Imago of *Choroterpes (Choroterpes) petersi*, NEW SPECIES Figure 9. Fore wing of male imago. Figure 10. Hind wing of male imago. Figure 11. Genitalia. Figure 12. Penes, left: ventral view; right: dorsal view.

off-white each with a dark brown spot laterally; terga 4–7 with a dark brown marking or 2 closed longitudinal stripes medially and pair of small dark brown spots submedially, small faint spots on tergum 4; terga 8–10 dark brown. Abdominal sternum 9 with deep apical cleft. Genitalia (Figs. 11–12): Genital forceps pale, penes each with a finger-like process on the top. Caudal filaments off-white.

Female Imago.—Unknown.

Larva.—Body length 5.6–6.0 mm. Antennae approximately 3.2 mm. Caudal filaments broken in examined material. Head prognathous, light yellow-brown with diffuse black markings. Labrum (Fig. 1) with 3 transverse, near parallel, rows of setae on dorsal surface, posterior row with scattered setae, middle row without setae medially; anteromedian margin deeply incised producing a U-shape ventrally. Lateral margins of mandibles with scattered setae, inner mandibular incisor slightly longer than outer one (Fig. 3). Lingua of hypopharynx with well developed lateral process, anterior margin cleft; superlingua of hypopharynx as in Fig. 2. Segment 2 of maxillary palpi subequal in length to segment 1, segment 3 approximately 3/4 length of segment 2 (Fig. 4). Pronotum light yellow-brown with diffuse black markings medially. Meso- and metanota yellow-brown tinged with dark brown or black laterally. Legs (Fig. 7) light cream colored and generally lacking any conspicuous patterning, although some individuals with distal shading on femora. Tarsal claws (Fig. 8) apically hooked with row of 11–12 denticles, denticles on claws progressively larger apically. In females abdominal terga 1–10 light yellow-brown with diffuse black pigments; terga 1–3 of the male light yellow-brown, terga 4–7 light yellow-brown with a black marking or 2 parallel short longitudinal stripes medially, terga 8–10 black. Abdominal terga 1–10 with posterior marginal spines. Gills on segments 1–7; gill I slender, dorsal and ventral portions lanceolate with fine marginal hairs (Fig. 5); gills II–VII alike, well-tracheated, dorsal and ventral lamellae plate-like and terminating in 3 processes with median projection plate-like and significantly larger and longer than laterals (Fig. 6); ventral lamellae lightly smaller. Sternum 9 of male with deep apical cleft, sternum 9 of female with apex entire and without emargination. Caudal filaments light yellow-brown.

Diagnosis.—The male imago of *Choroterpes (Choroterpes) petersi*, NEW SPECIES can be distinguished easily from all known species of *Choroterpes (Choroterpes)* by the male genital penes each with a finger-like process on the top, acute costal projection of the hindwings, the apex of which is located approximately 2/3 distance from base. The larvae can be distinguished from all known species of *Choroterpes (Choroterpes)* by the following combination of characters: 1) labrum with three transverse rows of setae on dorsal surface, middle row without setae medially; anteromedian margin of labrum with a deep U-shaped ventral incision; 2) gill I slender with dorsal and ventral portions; and, 3) median projection of gills II–VII plate-like and markedly larger and longer than laterals.

Distribution.—Hong Kong, China.

Etymology.—This new species is named for our colleague, the late Dr. William L. Peters, who contributed greatly to our knowledge of the Leptophlebiidae.

Ecology.—The larvae co-occur with *Procloeon* sp., *Choroterpes (Eutraulus)* sp., *Thraulius bishopi* and *Ephemera pilosa* in shaded stream pools with a mixture of gravel and sand sediments. *Choroterpes (Choroterpes) petersi* is not widely distributed in Hong Kong, unlike other members of the genus, and may be sensitive to water quality. Measurements made at the collecting site on 18 April 1999, were as follows: ammonia 0.01 mg liter⁻¹, nitrates 0.03 mg liter⁻¹, nitrites 0 mg liter⁻¹, phosphates 0.1 mg liter⁻¹, and pH 7.4.

Material Examined.—See types.

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