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Six new species of *Integripalpia* (Trichoptera) from Southern China

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Abstract: Six new species of Trichoptera are described and figured, belonging to the families Goeridae and Leptoceridae. The goerid species are *Goera baishanzuensis* new species and *Goera recta* new species. The leptocerid species are *Setodes chlorius* new species, *Ceraclea (Athripsodina) semicircularis* new species, *Ceraclea (Athripsodina) brachyclada* new species, and *Ceraclea (Athripsodina) vaclia* new species (Leptoceridae).

Introduction
The diversity of Trichoptera in southern China is very rich. The new species described here are in addition to new species recorded in two papers in press or in preparation. Yang L. and B.J. Armitage (in press) are reporting on 18 Chinese *Goera* (Goeridae). Yang L. and J.C. Morse (in preparation) are reporting on 107 species of Chinese Leptoceridae.

Types of new species described herein are deposited in the collections of The Department of Plant Protection, Nanjing Agricultural University, and in the Institute of Zoology, Academia Sinica.

**Goeridae**

*Goera baishanzuensis*, new species
(Figs. 1A-E)

Length of male forewing 4.8 mm. Body and wings yellowish brown. Dry specimen preserved on glue point such that maxillary palpi not visible. Sternite VI bearing forked urosternite ending in pair of clavate processes.

**Male genitalia** (Figs. 1A-E): Segment IX broad dorsally with ventral half portion missing. Preanal appendages slightly shorter than segment X, broadly lobe-like, with basal half constricted. Tergum X consisting of three thick processes: dorsomesal, digitate projection and pair of lower lateral processes. Basal segment of each inferior appendage enlarged, bearing no processes; distal segment consisting of thick, setose, lateral lobe and slender, sclerotized mesal process with its apical half curved mesad. Phallus short, tubular, ejaculatory duct apparently sclerotized. Parameres absent.

*Goera recta*, new species
(Figs. 2A-E)

Length of male forewing 7.0 mm. Body and wings brown. Scapes of male antennae about as long as head and about 2.2 times as long as wide. Sternite VI urosternite consisting of two separated processes.

**Male genitalia** (Figs. 2A-E): Tergum IX long in lateral view, sternum IX missing. Preanal appendages slender and clavate, each with apical taper. Dorsal process of tergum X represented by single, capitate lobe; lower, paired processes of tergum X terete, semi-sclerotized. Basal segment of each inferior appendage much enlarged, with apicodorsal end bearing elongate process slightly broadened in middle then tapering to acute apex and with apicoventrolateral end short, triangular;
distal segment represented by long, straight apico-
mesal process with compressed apex and without
basal projection. Phallus tubular, without para-
meres.

**Diagnosis:** This species is quite similar to
*Goera bicuspidata* Yang & Armitage (1996), but
differs from it in that in *G. recta*: (1) the ventral
process of the basal joint of each inferior appendage
is triangular, about as long as its base is broad; (2)
the distal segment of each inferior appendage is
straight and compressed with a broad apex in
lateral view; and (3) urosternite VI bears two pro-
cesses that are separated basally.

**Etymology:** Latin, “straight,” with reference
to the shape of the distal segment of each inferior
appendage.

**Holotype:** Male, Hu-bei Province, Xing-shan
mountains, Xiao-he-kou, 700 m elevation, 11 V
1994, Coll. Yang Xing-ke in light trap (#19471,
Institute of Zoology, Academia Sinica).

**Distribution:** This species is known only from
the type locality in southcentral China.

**Leptoceridae**

*Ceraclea (Athripsodina) vaciva, new species*

(Figs. 3A-D, 4E-G)

Length of forewing: male 6.4 - 6.6 mm, female
5.7-6 mm. Head and thorax dark brown, frons
yellowish brown, setae on frons and dorsum of head
white. Forewing yellowish brown, covered with
golden brown setae with light and dark brown setae
in small patches.

**Male genitalia** (Figs. 3A-D): Superior appen-
dages fused basally for about one-third their
length, each apex blunt and curved downward.
Tergum X broad at base, tapering to narrow apex,
sub-apical sensilla-bearing lobes projecting laterally
and forming tri-lobed apex in dorsal view. Main
body of each inferior appendage and harpago ab-
sent; its basoventral lobe huge, sinuous with apical
one-third narrowed and curved ventrad and me-
sad, with 4-5 protuberances apically; mesal ridge
slightly produced with many setae. Phallus (phal-
lobase) tubular, apex of apicoventral lobe with
short mesal cleft. Paramere spines fused for five-
sixths of their length.

**Female genitalia** (Figs. 4E-G): Pleural re-
gions of segment IX distinctively striated. Superior
appendages small, triangular, not quite reaching
mid-distance of lamellae. Lamellae elliptical, two
times as long as wide, sparsely covered with short
setae. Gonopod plates semitransparent, slightly
striated on lateral margins; apicoventral processes
about 2.5 times as long as wide. Spermathecal
sclerite broadest one-third distance from posterior
end in ventral view.

**Diagnosis:** This species is a member of the
*Ceraclea (Athripsodina) marginata* Group, very
similar to *Ceraclea (A.) foemensis* from southeastern
China, keying with it in the work of Yang and
Morse (1988) wherein the main body of each inferi-
or appendage is absent and the parameres are
fused into one. *Ceraclea (A.) vaciva* differs from it,
however, in that (1) the male superior appendages
are fused for one-third of their length; (2) the apex
of male tergum X is without an apicoventral cleft
and its subapical sensilla lobes are large; (3) the mesal
ridge of each male inferior appendage is without
processes; and (4) the fused paramere spines in the
male are separated at the base.

**Etymology:** Latin, “empty, free from,” with
reference to the absence of the main body of each
inferior appendage.

**Holotype:** Male, Si-chuan Province, Feng-du
County, Shi-ping, 6 X 1994, 610 m elevation, Coll.
Li Fa-sheng (#148947 Institute of Zoology, Aca-
demia Sinica). Paratypes: eight males (#148895,
#151008, #148898, #148899, #148907, #148932,
#148951, #151031, Institute of Zoology, Academia
Sinica) and five females (#148983, #148987, #148977,
#151043, #148971, Institute of Zoology, Academia
Sinica), same data as holotype.

**Distribution:** This species is known only from
the type locality in southcentral China.

*Ceraclea (Athripsodina) brachyclada, new
species*  
(Figs. 5A-E)

Length of male forewing 6.4 mm. Head and
dorsum of thorax dark brown, legs light yellow.
Forewing light brown, covered with golden yellow-
ish setae.

**Male genitalia** (Figs. 5A-E): Segment IX gradu-
ally narrowed dorsally in lateral view, apices of
superior appendages abruptly narrowed and wide-
ly separated. Tergum X broad, apex blunt with
short mesal cleft. Main body of each inferior ap-
pendage and its harpago absent. Basoventral lobe
of each inferior appendage short, about half as long
as segment IX is tall, constricted near middle, apex
tapered and directed mesad and with apical crown
of very small protuberances, mesal ridge produced
and bearing many setae. Phallobase tubular, api-
coventral lobe with short cleft at apex. Paramere spines, stout, fused for entire length, about half as long as phallus.

**Diagnosis:** This species is also a member of *Ceraclea* (*Athripsodina*) *marginata* Group, closely related to the previous new species and keying with it and *C. foenesis* in the work of Yang and Morse (1988), but differing from them in that *C. brachyclada* has (1) the superior appendages not fused basally; (2) tergum X is broad with a bilobed apex; (3) the ventral lobe of each inferior appendage is short, only half as long as segment IX is tall, with the protuberances of the apical crown much smaller.

**Etymology:** Greek, "short branch," with reference to the relatively short basoventral lobe of each inferior appendage.

**Holotype:** Male, Si-chuan Province, Feng-du County, Shi-ping, 6 X 1994, 610 m elevation, Coll. Li Fa-sheng (#148993 Institute of Zoology, Academia Sinica). Paratypes: three males, same data as holotype (#148992, #151010, #148901 Institute of Zoology, Academia Sinica).

**Distribution:** The species is known only from the type locality in southcentral China.

*Ceraclea* (*Athripsodina*) *semicircularis*, new species

*(Figs. 6A-D)*

Length of male forewing 6.5 mm. Body dark brown. Wing pattern typical of *C. (A.) marginata* Group: medium brown, covered with yellow brown setae in patches especially along veins, forming an irrorate appearance.

**Male genitalia** (Figs. 6A-D): Superior appendages broad and separate basally, apical half slender, slightly curved inward, blunt apically. Tergum X long and broad with apex produced in the center in dorsal view; in side view, apicomedial sensilla-bearing lobes folded upward. Main body and harpago of each inferior appendage absent; basoventral process huge, erect basally, curved at middle, with small setae-bearing lobe causing dorsal edge to be angled in lateral view; process semicircular in ventral view, its apex with several small setiferous protuberances; basomesal surface of appendage bearing 6-7 long and stout setae. Phallus tubular, apicoventral process thin, semi-sclerotized, with apex slightly bilobed.

**Diagnosis:** This species is the member of *Ceraclea* (*Athripsodina*) *marginata* Group, somewhat similar to *Ceraclea (A.) foenesis* and keying with it in the work of Yang and Morse (1988), but differing from it in that (1) the basoventral process of each inferior appendage is strongly curved at mid distance, with its apex bearing 3-4 short, blunt protuberances; the mesal ridge of the huge lobe is not produced into processes but the ventromesal surface is produced and bears 6-7 stout setae and (2) the male parameres are entirely fused, slender and much longer than half the length of the phallus.

**Etymology:** Latin, "semi-circle," with reference to the arched inferior appendages.

**Holotype:** Male, Si-chuan Province, Feng-du County, Shi-ping, 6 X 1994, 610 m elevation, Coll. Li Fa-sheng (#151003 Institute of Zoology, Academia Sinica).

**Distribution:** The species is known only from the type locality in southcentral China.

*Setodes chlorinus*, new species

*(Figs. 7A-D, 8E-G)*

Length of male forewing 6.5 mm. Head and thorax pale yellow, abdomen green, forewing covered with golden yellowish setae, scattered with silvery setae in patches, with brown spots along the out margin at the ends of major longitudinal veins.

**Male genitalia** (Figs. 7A-D): Sternum IX long and setose, sinuately tapering to narrow tergum with several strong seta-bearing processes in upper half of posterior edge. Superior appendages small, triangular, hairy, separated basally. Tergum X long, rectangular in dorsal view, slightly narrowed in basal half with shallow excision at end. Inferior appendages three branched: dorsal branch slender, with apical part biforked, with each fork setose and apically blunt; mesal branch rectangular in lateral view; ventral branch short, about half as long as mesal one, and subdivided into slender and acute outer arcuate lobe and blunt and thumb-like inner lobe. Phallus with short, plate-like phalo-base, phallicata long, trough-shaped, evenly curved downward, parameres absent.

**Female genitalia** (Figs. 8E-G): Segment IX slightly longer dorsally than ventrally. Anterior part of gonopod plate convex, forming transverse, elliptical band; rest of plate concave, except paired apical projections slender, as long as small lamellae lobes, and suspended beneath plate and lamellae. Tergum X broad, slightly narrowed at distal third in dorsal view. Lamellae large, each consisting of two lobes, with ventrolateral lobe much smaller than large dorsal lobe.
**Diagnosis:** This new species is somewhat similar to the members of Schmid's (1987) Primitive Branch, keying to *Setodes diversus* Yang and Morse of the *S. punctata* Group in the work of Yang and Morse (1989). It differs from it and other members of that Group in the male by (1) the several irregular strong processes on the posterolateral margin of segment IX; (2) the massive, rectangular shape of the mesal branch of each inferior appendage and the division of the ventral branch into an acute and a blunt processes; and (3) the absence of parameres on the phallus.

**Etymology:** Greek, "green," with reference to the green abdomen of this new species.

**Holotype:** Si-chuan Province, Feng-du County, Shi-ping, 6 X 1994, 610 m elevation, Coll. Li Fasheng (#148896 Institute of Zoology, Academia Sinica). Paratypes: three females, same data as holotype (#148993, #148973, #148990, Institute of Zoology, Academia Sinica).

**Distribution:** This species is known only from the type locality in southcentral China.

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**References**


Fig. 1. *Goera baishanzueri*, new species, male genitalia. A, left lateral view; B, dorsal view; C, ventral view of left inferior appendage; D, left lateral view of phallus; E, process of sternum VI.

Fig. 2. *Goera recta*, new species, male genitalia. A, left lateral view; B, dorsal view; C, ventral view of left inferior appendage; D, left lateral view of phallus; E, process of sternum VI.

Fig. 3. *Coracle* (*Athripsodina*) *vocica*, new species, male genitalia. A, left lateral view; B, dorsal view; C, ventral view of left inferior appendage; D, left lateral view of phallus.

Fig. 4. *Coracle* (*Athripsodina*) *vocica*, new species, female genitalia. E, left lateral view; F, dorsal view; G, ventral view.
Fig. 5. Ceraclea (Athripsodina) brachyclada, new species, male genitalia. A, left lateral view; B, dorsal view; C, ventral view of left inferior appendage; D, left lateral view of phallus; E, apex of phallus in ventral view.

Fig. 6. Ceraclea (Athripsodina) semicircularis, new species, male genitalia. A, left lateral view; B, dorsal view; C, ventral view of left inferior appendage; D, left lateral view of phallus.

Fig. 7. Setodeschlorinus, new species, male genitalia. A, left lateral view; B, dorsal view; C, ventral view of left inferior appendage; D, left lateral view of phallus.

Fig. 8. Setodes chlorinus, new species, female genitalia. E, left lateral view; F, dorsal view; G, ventral view.