

# Two new species and a new combination of *Eriotremex* Benson (Hymenoptera: Siricidae) with a key to Chinese species

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**Abstract:** The diagnosis and species distribution of the genus *Eriotremex* Benson, 1943 is briefly reviewed. Two new Chinese species of *Eriotremex* are described and illustrated: *E. decem* Wei **sp. nov.** and *E. shengi* Wei **sp. nov.** *Eriotremex serraticostatus* (Xiao & Wu, 1983) **comb. nov.** is transferred from *Tremex* Jurine. A key to the four known species of *Eriotremex* from China is provided.

**Key words:** Siricoidea; Tremicinae; horntails; taxonomy

中国凸盘树蜂属二新种和一新组合暨中国种类检索表（膜翅目：树蜂科）

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**摘要：**简要评述了凸盘树蜂属 *Eriotremex* Benson, 1943 的特征和种类分布。记述中国凸盘树蜂属 2 新种：十节凸盘树蜂 *E. decem* Wei **sp. nov.** 和盛氏凸盘树蜂 *E. shengi* Wei **sp. nov.**。建立 1 个新组合：缘齿凸盘树蜂 *Eriotremex serraticostatus* (Xiao & Wu, 1983) **comb. nov.**，该种原放在扁角树蜂属 *Tremex* Jurine 内。文中还提供了凸盘树蜂属中国种类检索表。

**关键词：**树蜂总科；扁角树蜂亚科；树蜂；分类

## Introduction

*Eriotremex* Benson, 1943 is a small genus of Siricidae that occurs in eastern and southeastern Asia. Totally 13 species have been recognized. Three of them occur in Eastern Asia and the remaining species distribute from eastern India to Papua New Guinea (Maa 1949, 1956; Togashi 1990, 2005; Smith 1996, 2010). Specimens of the genus are rarely collected and only one species has been recorded from China (Wei *et al.* 2006).

The diagnosis of *Eriotremex* is as following: distance between antennal toruli 3 times the distance between antennal torulus and inner orbit of eye; hind orbit convex but without carina; antenna short and more or less compressed with 10 to 20 antennomeres; vein 2r meeting pterostigma at about middle or slightly beyond middle, vein 1r-m absent, cu-a meeting cell 1M at base, anal cell in hind wing open; dorsal basin of tergite 9 about as long as or longer than broad, bottom convex and punctured, usually with dense hairs; cornus short, cercus short but distinct; ovipositor shorter than abdomen, apical sheath much shorter than basal sheath.

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While compiling the sawfly fauna of the Zhejiang and Nanling Regions, we found two undescribed species of *Eriotremex* and confirmed a new combination. The results are reported here.

## Material and methods

Specimens examined during this study are deposited in the Asian Sawfly Museum, Nanchang, Jiangxi, China (ASMN). Images of adults were taken using a digital camera with the series of images montaged using Helicon Focus (HeliconSoft®). Images of genitalia were taken using Moticam® 5000 via Motic® BA400. All images were further processed with Adobe Photoshop CS 11.0.

Abbreviations used are: OOL — distance between the eye and outer edge of lateral ocellus; POL — distance between the mesal edges of the lateral ocelli; OCL — distance between a lateral ocellus and the occipital carina or hind margin of the head.

Terminology of sawfly genitalia follows Ross (1945). Terminology of wing venation follows Niu & Wei (2010).

## Taxonomy

### 1. *Eriotremex decem* Wei sp. nov. (Fig. 1)

Male (Holotype, Fig. 1K). Body length 9 mm; head and pronotum dark reddish brown, apex of mandible and ocellar area black; mesonotum, metanotum, pleura and abdomen deep brown, abdominal tergites 2–7 with small but distinct lateral yellowish brown maculae; antenna black, scape, pedicel and apex of antennomere 10 brown; legs deep brown, each coxa and trochanter, middle and hind femora, base of fore and middle tibiae pale brown; body hairs brown; wings entirely and deeply infusate, vein C and pterostigma pale brown.

Head and mesopleuron with very large, deep and close punctures, surface smooth (Figs 1A–C, 1G, 1H), only most of hind orbit sparsely punctured (Figs 1C, 1F), lower part of hind orbit and mesonotum densely and rugosely punctate, pronotum and mesoscutellum with short and curved carinae; mesopleuron reticulately punctured, interspaces linear and feebly microsculptured (Figs 1G, 1M); basal and middle abdominal tergites finely and densely sculptured, mat, apical tergites feebly sculptured, weakly shiny; sternites with large and shallow punctures, interspaces feebly microsculptured (Fig. 1L).

Lateral carinae of clypeus low and weak; OOL : POL : OCL = 3 : 5.7 : 11; hind orbit clearly narrower than breadth of eye (Fig. 1C); antenna with 10 antennomeres, totally 1.7 times head breadth, each antennomere longer than broad, antennomere 3 about 2.2 times its breadth (Fig. 1D); middle length of pronotum as long as OCL; vein 2r meeting stigma at middle, cell 3R1 open at apex, cu-a interstitial to 1M, anal cross vein clearly basad vein cu-a (Fig. 1I); each tibia clearly longer than basitarsus, metabasitarsus slightly longer than following four tarsomeres together (Fig. 1J); tarsal pulvillus very small and at apex of each tarsomere; claw with a distinct inner tooth and remote from claw base (Fig. 1E); sternite 7 with a deep middle incision (Fig. 1L).

**Holotype.** ♂, China, Zhejiang, Hangzhou, 10-VII-1980, Junhua HE leg.

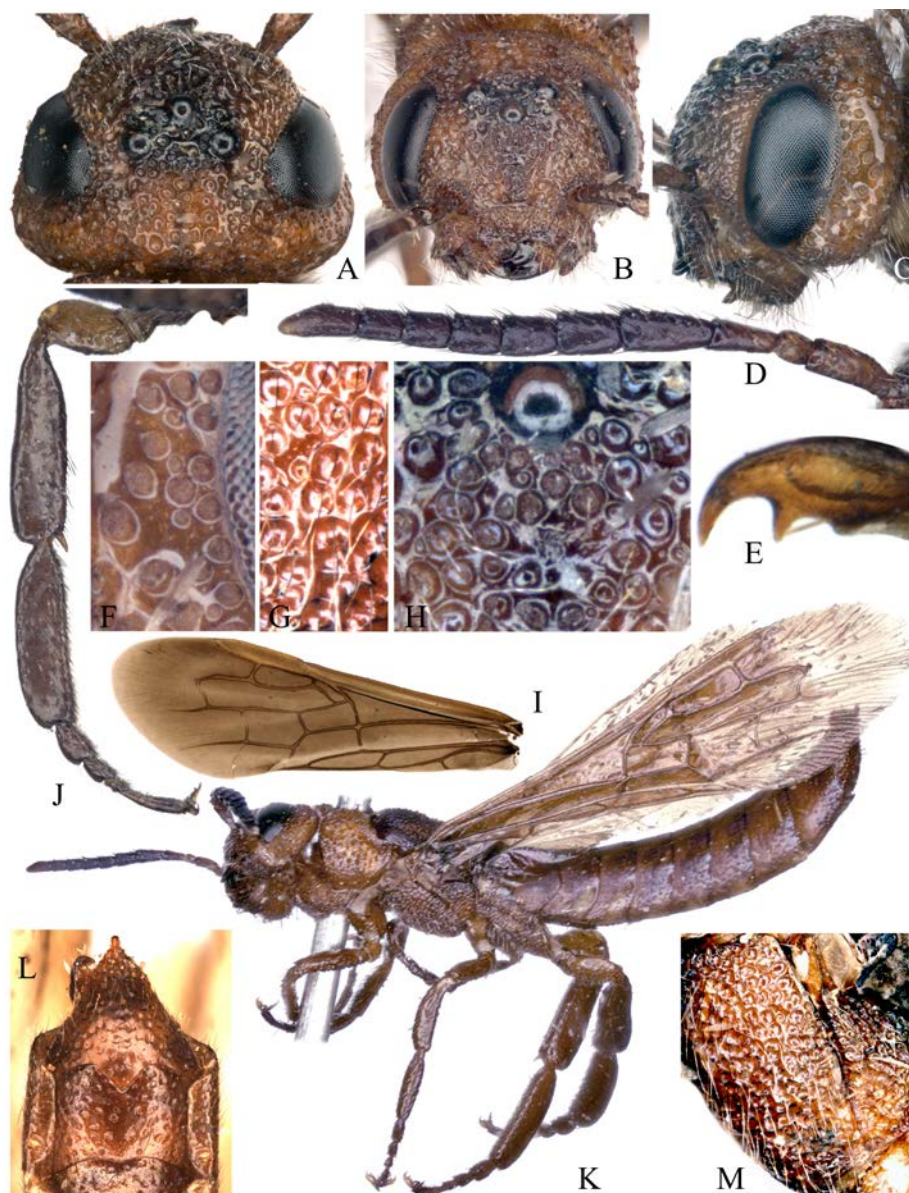


Figure 1. *Eriotremex decem* Wei **sp. nov.**, holotype, ♂. A. Head, dorsal view; B. Head, frontal view; C. Head, lateral view; D. Antenna; E. Claw; F. Punctures on hind orbit; G. Punctures on mesepisternum; H. Punctures on frons; I. Fore wing; J. Hind leg; K. Adult male, lateral view; L. Apex of abdomen, ventral view; M. Mesopleuron.

**Etymology.** This new species is named after its antenna having 10 antennomeres.

**Remarks.** This new species is similar to *Eriotremex pygaerus* Maa, 1956 from Philippines, but differs from it by the following: body length 9 mm; the abdominal tergites 2–7 with small but distinct lateral yellowish brown maculae; wings deeply infuscate, vein C and stigma pale brown; hind orbit narrower than eye breadth; antenna with 10 antennomeres and

much shorter than head breadth and each antennomere longer than its breadth; mesepisternum with very large, deep and close punctures; the hind tibia clearly longer than metabasitarsus, and metabasitarsus longer than the following 4 tarsomeres together. In *Eriotremex pygaerus*, the body length is about 22 mm; the abdominal tergites lack lateral yellowish brown maculae; wings deeply infusate at apical 2/3 and hyaline at basal 1/3, vein C and stigma black brown; hind orbit broader than eye breadth; antenna with 14 antennomeres, antennomeres 5–8 each broader than long; upper mesepisternum largely smooth; the hind tibia clearly shorter than metabasitarsus, and metabasitarsus clearly shorter than following 4 tarsomeres together. *E. decem* is the first species that the antenna has only 10 antennomeres within *Eriotremex*.

## 2. *Eriotremex shengi* Wei sp. nov. (Figs 2, 3A)

Female (Holotype). Length 15mm (excluding ovipositor); body including antenna and legs mostly black, apex of antenna pale brown, tarsus dark brown; body hairs brownish black with colorless apex, hairs on frons silver brown; wings deeply infusate with a subbasal hyaline band, veins and stigma blackish brown (Fig. 3A).

Punctures on head including frons small and sparse, interspaces broad and smooth (Figs 2A, 2D, 2E); antennomers 4–16 densely microsculptured (Fig. 2B); pronotum with dense and irregular short carinae, interspaces largely smooth; mesonotum densely and coarsely punctured, scutum with narrow lateral smooth patch; punctures on mesepisternum minute and very sparse, interspaces smooth and much broader than punctures; abdominal tergites 1–4 densely sculptured, tergites 5–8 weakly sculptured, lateral of tergites 5–7 and most of tergite 8 with distinct small punctures, punctures on tergite 9 large and dense (Fig. 2H); sternites largely smooth, lateral and posterior margins with some punctures; basal sheath densely sculptured on lateral sides and coarsely punctured on ventral side, apical sheath irregularly punctured mixed with carinae and sculptures; basin of tergite 9 and cornus with large and dense punctures, pilose (Fig. 2G).

Frons with a long and distinct middle furrow; OOL : POL : OCL = 5 : 9 : 20; hind orbit narrower than eye (Fig. 2D); antenna with 17 antennomeres, total length 2 times as long as head breadth, pedicel as long as broad, antennomere 3 2.1 times as long as its breadth, antennomere 4 1.9 times as long as its breadth, antennomeres 6–17 each broader than long (Fig. 2B); middle length of pronotum as long as OCL; vein 2r meeting stigma at apical 0.4, cell 3R1 open at apex, cu-a interstitial to vein 1M, anal cross vein clearly basad vein cu-a (Fig. 3A); each tibia slightly shorter than basitarsus, fore and middle basitarsi shorter than following four tarsomeres together, metabasitarsus clearly longer than following four tarsomeres together; tarsal pulvilli on venter of tarsomeres 2–4 very long (Fig. 2C); claw with a minute inner tooth close to base (Fig. 2F); dorsal basin of tergite 9 round, bottom distinctly convex with a short apical middle carina, basal furrow broad and deep, cornus short triangular (Fig. 2G), cercus small but distinct; ovipositor as long as tergites 1–8 together, basal sheath 2.2 times as long as apical sheath (Fig. 2H).

Male. Unknown.

**Holotype.** ♀, China, Jiangxi, Quannan, alt. 650 m, 09-VII-2008, Shichang LI leg.

Etymology. This new species is named after Prof. Maoling SHENG.

Diagnosis. This new species is similar to *E. makiharai* Togashi, 2005 from Japan, but differs from it by the following: body length 15 mm; wings not yellowish tinged and the

apical 3/5 of fore wing smoky; head sparsely punctured; OOL : POL : OCL = 5 : 9 : 20; hind orbit clearly narrower than eye; dorsal basin of tergite 9 as long as broad and with a distinct apical carina; cornus as long as broad. In *E. makiharai* Togashi, the body length 22 mm; wings yellowish tinged and the apical half of fore wing smoky; head densely and closely punctured; OOL : POL : OCL = 8 : 10 : 26; hind orbit not narrower than eye; dorsal basin of tergite 9 longer than broad and without apical carina; cornus narrow and much longer than broad.



Figure 2. *Eriotremex shengi* Wei **sp. nov.**, holotype, ♀. A. Head, dorsal view; B. Antenna; C. Hind tarsus; D. Head, lateral view; E. Head, frontal view; F. Claw; G. Apex of abdomen, dorsal view; H. Apex of abdomen, lateral view.

### 3. *Eriotremex serraticostatus* (Xiao & Wu, 1983) **comb. nov.** (Fig. 3B)

*Tremex serraticostatus* Xiao & Wu, 1983: 18–19, 25, 28.

Notes on morphology. Body length 13–14 mm; body mainly yellow with dark reddish brown maculae; head densely and reticulately punctured, pronotum and mesoscutellum with irregular short carinae; punctures on mesepisternum large and very sparse, surface smooth; OOL : POL : OCL = 8 : 23 : 30; hind orbit clearly narrower than eye in lateral view; antenna with 12 antennomeres, pedicel longer than broad, antennomere 3 much shorter than

antennomere 4, antennomeres 3–8 longer than broad, antennomeres 9–11 as broad as long; middle length of pronotum as long as OCL; mesoscutellum with a shallow middle furrow; anterior side of vein C with sparse short spines, anterior margin of stigma with about 15 short spines; vein 2r meeting stigma at apical 0.45; fore tibia shorter than basitarsus, middle and hind tibiae clearly longer than basitarsus; hind tibia and basitarsus strongly compressed and enlarged, metabasitarsus much longer than following four tarsomeres together; tarsal pulvilli very small and short; claw with distinct inner tooth close to base; apical incision on sternite 7 shallow and narrow, about 1/5 length of sternite.

**Specimen examined.** 1♂, **China**, Yunnan, Xishuangbanna, Wangtianshu, alt. 620 m, 23-IV-2003, Wei XIAO leg.

Distribution. China (Yunnan).

Remarks. This species can be easily recognized by the peculiar body color. The venation shows clearly that it is a member of *Eriotremex*. A new combination is therefore suggested.

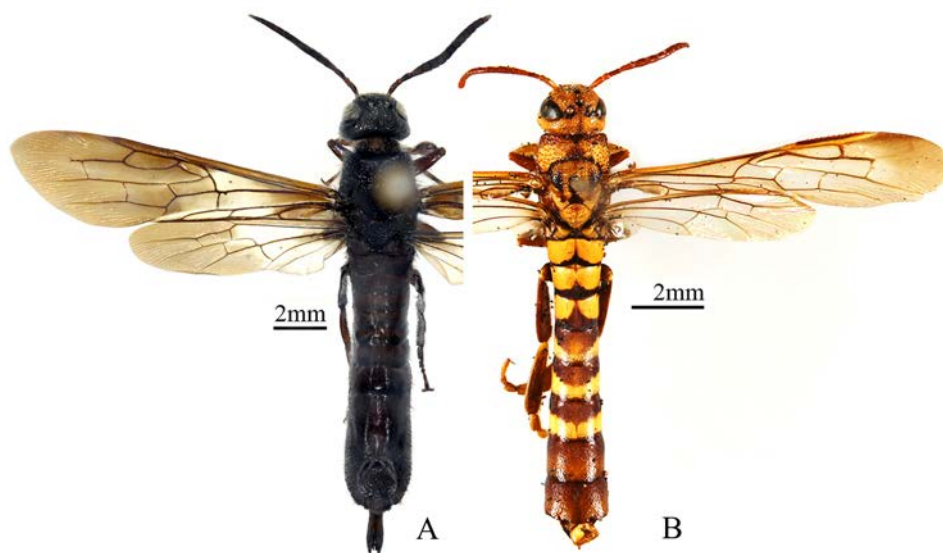


Figure 3. Adults of *Eriotremex* spp. A. Female of *E. shengi*, holotype; B. Male of *E. serraticostatus*.

#### Key to Chinese species of *Eriotremex*

1. Head black; antenna with 16–20 antennomeres; tarsal pulvilli 2–4 as long as tarsomeres ..... 2
- Head yellowish brown or dark reddish brown; antenna with 10–12 antennomeres; tarsal pulvilli 2–4 very small and short, at apex of tarsomeres; abdominal tergites 8–9 with sparse hairs; hind orbit clearly narrower than eye in lateral view ..... 3
2. Body length 22 mm; pronotum, tergites 2, 3, 7, 8 each with a transverse yellow band; antenna with 20 antennomeres, pedicel broader than long; basal 2/3 of each tibia and basitarsus yellowish white; tergites 8–9 with dense and long hairs; hind orbit broader than eye in lateral view; wing hyaline except for narrow apical margin. Taiwan ..... *E. formosanus* (Matsumura)
- Body length 15 mm; thorax and abdomen entirely black; antenna with 16 antennomeres, pedicel as long as broad; each tibia and tarsus entirely black; tergites 8–9 with sparse hairs; hind orbit clearly narrower than eye in lateral view; wing strongly smoky with a subbasal hyaline band. Jiangxi .....

- ..... *E. shengi* Wei **sp. nov.**
3. Body largely yellow, with some dark reddish brown maculae; antenna pale brown with 12 antennomeres, middle antennomeres not distinctly compressed; middle and hind tarsi yellowish brown; wing largely hyaline, anterior margin with many short spines; head with small but dense punctures, mesepisternum with small and sparse punctures, interspaces very broad and smooth. Yunnan.....  
..... *E. serraticostatus* (Xiao & Wu) **comb. nov.**
- . Body mainly dark brownish black, head and pronotum dark reddish brown; tergites 2–7 with lateral yellowish maculae; antenna with 10 antennomeres, mainly brownish black; middle and hind tibiae and tarsi almost entirely dark brownish black; wing smoky, anterior margin without short spine; punctures on dorsum of head and mesepisternum very large and close, without smooth interspaces. Zhejiang .....  
..... *E. decem* Wei **sp. nov.**

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### References

- Benson RB. 1943. Studies in Siricidae, especially of Europe and southern Asia (Hymenoptera, Symphyta). *Bulletin of Entomological Research*, 34: 27–51.
- Maa TC. 1949. A synopsis of Asiatic Siricoidea with notes on certain exotic and fossil forms (Hymenoptera, Symphyta). *Muse'e Heude, Notes d'Entomologie Chinoise*, 8: 11–189.
- Maa TC. 1956. Notes on the genus *Eriotremex* Benson (Hymenoptera: Siricidae). *Proceedings of the Hawaiian Entomological Society*, 16: 91–94.
- Niu GY & Wei MC. 2010. Revision of the *Siobla annulicornis*, *acutiscutella* and *sheni* groups (Hymenoptera: Tenthredinidae). *Zootaxa*, 2643: 45–65.
- Ross HH. 1945. Sawfly genitalia: terminology and study techniques. *Entomological News*, 61(10): 261–268.
- Smith DR. 1996. Discovery and spread of the Asian horntail, *Eriotremex formosanus* (Matsumura) (Hymenoptera: Siricidae), in the United States. *Journal of Entomological Science*, 31(2): 116–171.
- Smith DR. 2010. The woodwasp genus *Eriotremex* (Hymenoptera: Siricidae), a review and a new species from Malaysia. *Proceedings of the entomological Society of Washington*, 112(3): 423–438.
- Togashi I. 1990. A new *Eriotremex* from Japan (Hymenoptera: Siricidae). *Transactions of the Shikoku Entomological Society*, 19: 105–108.
- Togashi I. 2005. Description of a new species of *Eriotremex* Benson (Hymenoptera: Siricidae) from Japan. *Proceedings of the Entomological Society of Washington*, 107: 159–161.
- Wei MC, Nie HY & Taeger A. 2006. Sawflies (Hymenoptera: Symphyta) of China. Checklist and review of research. In: Blank SM, Schmidt S & Taeger A (Eds.), *Recent Sawfly Research: Synthesis and Prospects*. Goecke & Evers, Keltern, pp. 505–574.
- Xiao GR & Wu J. 1983. The Siricid Wood wasps of China (Hymenoptera, Symphyta). *Memoirs of Scientia silvae sinicae*, 19: 1–29.