

NEW RECORDS AND NOMENCLATURAL CHANGES AMONG SPORE-FEEDING THRIPS FROM CHINA (THYSANOPTERA , PHLAEOTHIRIPIDAE , IDOLOTHRIPINAE)

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Abstract The European species , *Cryptothrips nigripes* Reuter , is newly recorded from China. As a result of studying type specimens the following changes are recognised: *Compsothrips terebronus* (Han & Cui) comb. nov. , with *C. furvus* Reyes from the Philippines as a new synonym , and a first record of this species from Thailand; *Nesothrips atropoda* Duan *et al.* is a new synonym of the widespread Asian species *N. brevicollis* (Bagnall) .

Key words Idolothripinae , new records , new combination , new synonyms , China.

1 Introduction

The Phlaeothripidae is the sole family in the suborder Tubulifera (Thysanoptera) , and it includes two subfamilies , Idolothripinae and Phlaeothripinae. Members of the Idolothripinae are distinguished from the other subfamily by their broad maxillary stylets , and it seems that all members of this subfamily feed on fungal spores. Two references on Idolothripinae are particularly useful: Mound & Palmer (1983) revised the classification of the subfamily with keys to genera , and Okajima (2006) provided an account of the Japanese Phlaeothripidae. There are 81 genera listed in Idolothripinae (Mound , 2013) , of which 18 are reported from China (Mirab-balou *et al.* , 2011) , however there is no any systematic study of this subfamily in China. As part of ongoing studies on Chinese Idolothripinae , some changes in nomenclature are provided here , including new synonyms , a new combination and one species newly recorded from China.

2 Material and Methods

Descriptions and measurements are based on permanent slides of specimens under the microscope (Nikon Eclipse 80i) , and pictures are processed with Automontage software and completed in Photoshop. Thrips terminology in this paper generally follows Mound (2013) and Okajima (2006) . The unit of measurements in this paper is micrometre (μm) . All specimens are deposited in the National Zoological Museum of China (NZMC) , Institute of Zoology , Chinese Academy of Sciences , Beijing , China , and from Duan's collections , Baotou , Inner Mongolia , China , and the Australia National Insect Collection (ANIC) , CSIRO , Canberra , Australia.

3 Taxonomy

3.1 *Compsothrips terebronus* (Han & Cui) comb. nov. (Figs 1 – 2)

Ophthalmothrips terebronus Han & Cui , 1991: 3.

Compsothrips furvus Reyes , 1994: 312. Syn. nov.

Described from Sichuan , the type specimens of this species have been re-examined for this study. Although the eyes are prolonged ventrally on the head and similar to those of *Ophthalmothrips* species , this species can be recognised as a member of the genus *Compsothrips* from the following characters: metathoracic sternopleural sutures long and extending to hind coxae (Fig. 1) , metathorax elevated medially with reticulation almost concentric (Fig. 2) , pelta broad across the anterior margin of the second abdominal tergite (Fig. 2) . And , the type specimens of *Compsothrips furvus* Reyes from the Philippines have been studied , and these cannot be distinguished satisfactorily with the species from Sichuan , as indicated by the new synonymy above. In addition , this species is here newly recorded from Thailand. There are 27 known species in this genus , of which two species are recorded from China: *C. reticulatus* from Hebei (Guo & Feng , 2006) and *C. sinensis* from Guangdong (Pelikan , 1961) .

Material examined. China: holotype female and paratypes , Sichuan Province , 8 females 6 males , 2 July 1984 , WANG Shu-Yong (NZMC) . The Philippines , Luzon , Holotype female of *furvus* , on *Uraria lagopodoides* , and paratype male on *Imperata cylindrica* , 7 Sep. 1976 , L. C. Raros (ANIC) . Thailand , Chiang Mai , 2 females 2 males on grasses , 6 Sep. 1992 , S. Okajima (ANIC) .

Distribution. China (Sichuan) ; the Philippines , Thailand.

3.2 *Cryptothrips nigripes* (Reuter) New record to China (Figs 7 – 11)

Phlaeothrips nigripes Reuter , 1880: 11.

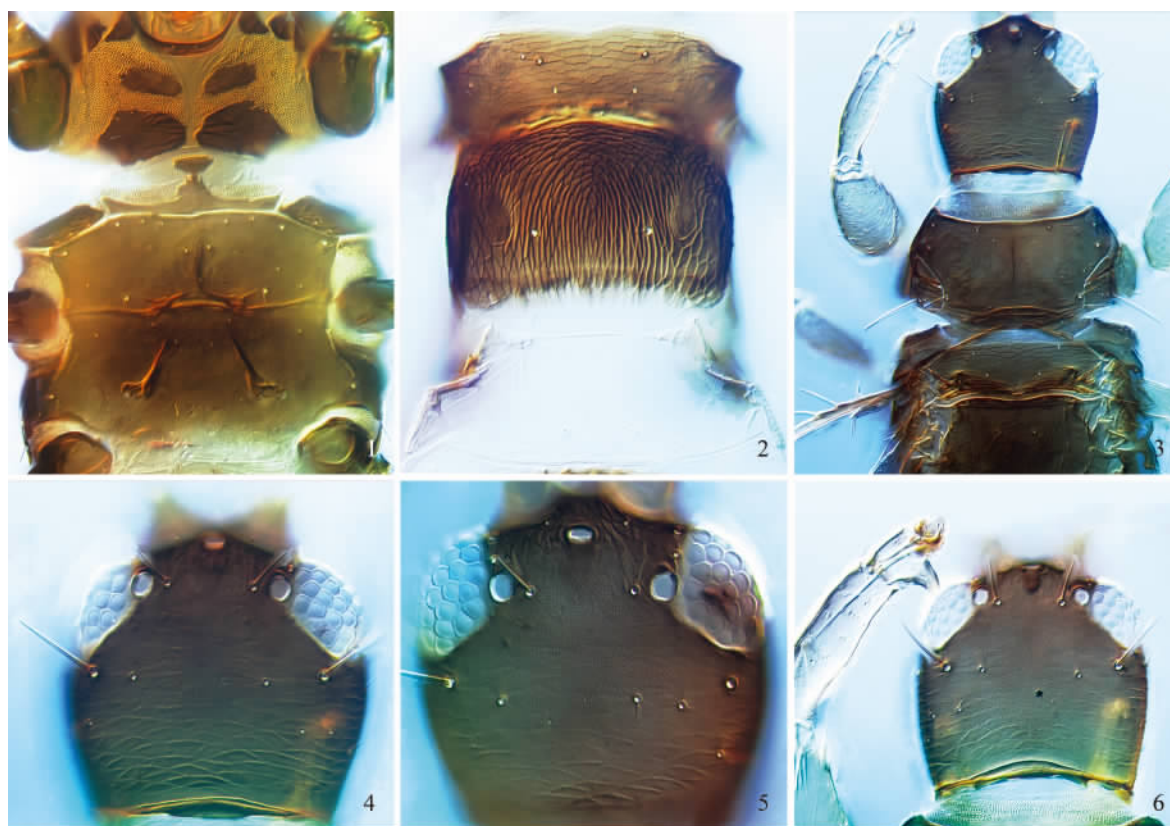
Female aptera. Body brown; antennal segments I – II and IV – VIII brown , III yellow but shaded in its club-heads; all legs uniformly brown.

Head 1.4 times as long as wide across eyes; ocellar setae minute; eyes small , about as long as antennal segment I , postocular setae well developed , longer than eyes length; cheeks

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Figs 1–2. *Compsothrips terebronus* (Han & Cui). 1. Thorax. 2. Meso-, metanotum and pelta. Figs 3–6. *Nesothrips brevicollis* (Bagnall). 3. Head, thorax and foreleg. 4–6. Head. 1–5. Female. 6. Male. 1. Ventral view. 2–6. Dorsal view.

with several pairs of minor setae (Fig. 7). Mouth-cone short and round, maxillary stylets elongate, retracted into eyes, close together medially (Fig. 7). Antennae 8-segmented, segment III with 2 sensoria, IV with 3, V with 2, VI and VII each with one, these sensoria on III about 1.5 times as long as apical width of this segment.

Pronotum smooth, epimeral sutures complete; five pairs of major setae well developed, anteromarginal setae a little shorter than anteroangulals (Fig. 7); basantra present. Mesopresternum slender (Fig. 10). Metanotum smooth with median setae well developed (Figs 8–9); sternopleural sutures present (Fig. 10). Fore tarsal tooth absent.

Pelta with reticulate sculpture, lateral lobes slender (Figs 8–9, 11); abdominal tergites II–VII with one pair of wing retaining setae; tergite IX setae S1 shorter than tube; tube shorter than head, weakly constricted near apex.

Measurements (in microns). Body length 3654. Head, length 403; width across eyes 277; postocular setae 108. Antennal segments III–VIII length (maximum width), 124 (40), 106 (41), 104 (39), 85 (36), 65 (26), 46 (15), sensoria of segment III length 26. Pronotum length (maximum width) 206 (454); setae length, anteromarginals 61, anteroangulals 71, midlaterals 56, epimerals 119, posteroangulals 116, posteromarginals 28. Metanotum median setae length 91. Pelta length (maximum width) 124 (435); tube length 259.

Material examined. China: Inner Mongolia (Helan Mountains), 2 females on pine tree, 22 July 1991, HAN Yun-Fa (NZMC); Sichuan, 1 female, 26 Aug. 1982, ZHANG Xue-Zhong (NZMC). England, Surrey, 1 female 1 male on

dead twigs, 29 Sep. 1974, L. A. Mound (ANIC). Sweden, Uppsala, 1 female on *Salix* dead branch, 14 June 1973 (ANIC).

Distribution. China (Sichuan, Inner Mongolia); England, Sweden, Czechoslovakia, Denmark, Norway, Yugoslavia, Finland.

Comments. *Cryptothrips* belongs to the tribe Pygothripina, but differs from most other members of this tribe in having 3 sensoria on antennal segment IV. There are 12 species listed in this genus (Mound, 2013), but none has previously been recognised from China. One species, *C. sauteri*, is listed under this genus from Taiwan (Karny, 1913), but the original specimen is lost, and the species remains unrecognisable within Phlaeothripidae.

3.3 *Nesothrips brevicollis* (Bagnall) (Figs 3–6)

Oedemothrips brevicollis Bagnall, 1914: 29.

Nesothrips atropoda Duan *et al.*, 1998: 55. Syn. nov.

Although Mound (1974) recorded this species widely across Asia, Okajima (2006) restricted the concept of *brevicollis* to specimens from Japan and China (Taiwan), and used the name *minor* Bagnall for specimens from outside this area. However, the characters used do not fully distinguish with two segregates, and the name *brevicollis* is used here in the sense of Mound (1974). The ratio between head and tube lengths varies, from slightly longer to slightly shorter, and the width of the pelta is also variable. On the head, the postocellar pair of setae usually arise between the two tangents joining the anterior margins, and the posterior margins, of the posterior ocelli (Figs 4–5), but sometimes this pair of setae arises behind the posterior tangent and in large males is also stouter (Fig. 6).



Figs 7 – 11. *Cryptothrips nigripes* (Reuter) . 7. Head and pronotum , female. 8. Meso-, metanotum and pelta (female specimen from China). 9. Meso-, metanotum and pelta (male specimen from England). 10. Thorax , female. 11. Pelta and abdominal tergite II (female specimen from Sweden) . 7 – 9 , 11. Dorsal view. 10. Ventral view.

The species is polymorphic , with apterae , micropterae , and macropterae , and the fore wings when present are broad , parallel-sided , with 3 pairs of subbasal setae pointed at apex , and with 4 – 8 duplicated cilia. The fore wings of micropterae are shorter than the width of the pterothorax.

Duan *et al.* (1998) described *N. atropoda* from Henan , and stated that it differed from *N. brevicollis* in that: femora and tibiae mainly brown; mid and hind femur without stout setae; pelta

oblate medially (in contrast to round) . The type specimens have been restudied , and the stout setae on the femora have evidently been lost during slide making , because the basal pores are clearly present , and the paratype has fine stout setae on the mid and hind femora. There is no significant difference in the pelta shape , and this species is here regarded as a synonym of *brevicollis*.

Of the 28 species listed in this genus (Mound , 2013) , only

three are now recognised from China, the two others being the worldwide species *N. lativentris* (Karny), and *N. peltatus* Han & Cui that is known only from Sichuan.

Material examined. China: holotype female and paratype male of *atropoda*, Henan (Funiu Mountain), on grasses, 10–11 July 1996, DUAN Ban-Suo (in Duan's collections); Shaanxi, 2 females, 2 July 1999, YAO Jian (NZMC); Henan, 1 male, 2 July 1998, 2 females 1 male, 9 Aug. 1957, HAN Yun-Fa (NZMC); Gansu, 4 females 5 males, 12 July 1998, YAO Jian (NZMC); Zhejiang, 1 female, 8 Aug. 2011, DANG Li-Hong and WEN Juan (NZMC); Hubei, 1 female, 5 June 1994, YAO Jian (NZMC). Australia, Queensland, 11 females 4 males, 24–26 July 2001, 5 Aug. 2004, 19 Nov. 2009, L. A. Mound, 2 Feb. 2008, D. J. Tree (ANIC); Indonesia, Java, 1 female, 31 Oct. 1973, L. A. Mound (ANIC); Mauritius, 2 females 2 males, 5 Sep. 2005, S. Gareshan (ANIC); Timor Leste, 1 female, 5 Dec. 2003 (ANIC).

Distribution. China (Henan, Hubei, Shaanxi, Gansu, Zhejiang, Taiwan); Japan, The Philippines, Indonesia (Java), East Timor, Australia (Queensland), Fiji, Hawaii, India, Reunion, Mauritius.

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中国菌食性蓟马一新纪录种和一新组合以及两新同物异名 (缨翅目, 管蓟马科, 灵管蓟马亚科)

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摘要 记述了中国 1 新纪录种, 暗秘管蓟马 *Cryptothrips nigripes* Reuter; 1 新组合, 暗角多饰管蓟马 *Compsothrips terebronus* (Han & Cui) comb. nov., 以及此种的新同物异名 *C. furvus* Reyes syn. nov., 而且此种首次报道分布于泰国; 暗

关键词 灵管蓟马亚科, 新纪录, 新组合, 新同物异名, 中国. 中图分类号 Q969.34

足岛管蓟马 *Nesothrips atropoda* Duan *et al.* 是亚洲广布种短颈岛管蓟马 *N. brevicollis* (Bagnall) 的新同物异名。研究标本来自中国科学院动物研究所国家动物博物馆, 内蒙古包头段半锁标本收藏以及澳大利亚国家昆虫标本馆。

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