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Original Article

Review of the genus *Trichoferus* Wollaston (Coleoptera: Cerambycidae) in Korea

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ABSTRACT

The genus *Trichoferus* Wollaston, 1854 (Coleoptera: Cerambycidae: Cerambycinae) in Korea is reviewed. The synonymy of *Trichoferus flavopubescens* Kolbe, 1886 with *Trichoferus campestris* (Faldermann, 1835) is reconfirmed herein, resolving their taxonomic confusion. Two species of the genus are recognized in Korea: *T. campestris* and *Trichoferus semipunctatus* Holzschuh, 2003. The latter species is newly recognized in Korea. Photographs of habitus and male genitalia of two Korean *Trichoferus* species are provided.

Introduction

The genus *Trichoferus* Wollaston, 1854 (Coleoptera: Cerambycidae: Cerambycinae: Hesperophanini) comprises 27 species worldwide, widely distributed around Northeast to Central Asia, Europe, Middle East and North Africa (Tavakilian and Chevillotte 2017). Among them, *Trichoferus campestris* was highlighted as an invasive pest in North America (Grebennikov et al 2010).

In Korea, two *Trichoferus* species have been reported: *T. campestris* and *Trichoferus flavopubescens* (Lee 1987; ESK & KSAE 1994; Cho and Park 2010; Hwang 2015). However, the real identity of the latter species has not been conclusively confirmed since *T. flavopubescens* is widely accepted as a junior synonym of *T. campestris* (Ganglbauer 1890; Ohbayashi et al 2007; Grebennikov et al 2010; Tavakilian and Chevillotte 2017).

With comparison of syntype series, the synonymy of *T. campestris* and *T. flavopubescens* is reconfirmed. The real identity of the problematic species is *Trichoferus semipunctatus* Holzschuh, 2003. In conclusion, we confirm two species of the genus *Trichoferus* from Korea, *T. campestris* and *T. semipunctatus*.

Materials and methods

Most of the samples are deposited in the College of Agriculture and Life Sciences, Seoul National University, Seoul, Korea while some are deposited in private collection. Type materials of *T. flavopubescens* (Figure 3A–D) were provided from Museum der Naturkunde für Humboldt Universität zu Berlin, Berlin, Germany. Specimens were dissected and illustrated as in Lee (2016).

Taxonomic accounts

Tribe Hesperophanini Mulsant, 1839

Genus *Trichoferus* Wollaston, 1854.
Type species: *Trichoferus senex* Wollaston, 1854.

Hesperandrius Reitter, 1913: 45
Type species: *Callidium griseum* Fabricius, 1792

Trichoferus campestris (Faldermann, 1835)
(Figures 1A–D and 4A–B)
Callidium campestris Faldermann, 1835: 435.
Hesperophanes flavopubescens Kolbe, 1886: 219.
Hesperophanes rusticus Ganglbauer, 1887: 133.
Hesperophanes turkestanicus Heyden, 1886: 193.

Abbreviations: SNUC, Seoul National University; MNHB, Museum der Naturkunde für Humboldt Universität zu Berlin; HOPC, Haeyong Oh Private Collection; CWPC, Woong Choi Private Collection.

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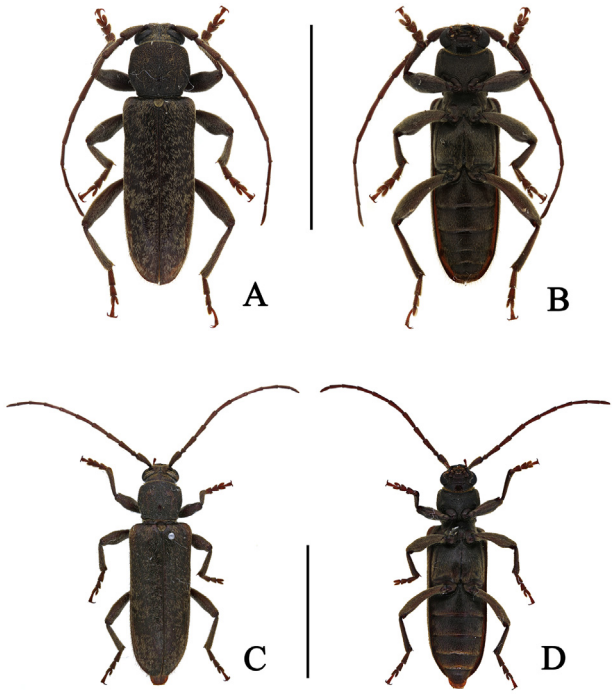

Figure 1. Habitus of *Trichoferus campestris*: A, male dorsal; B, male ventral; C, female dorsal; D, female ventral. <scale bar: 10 mm>.

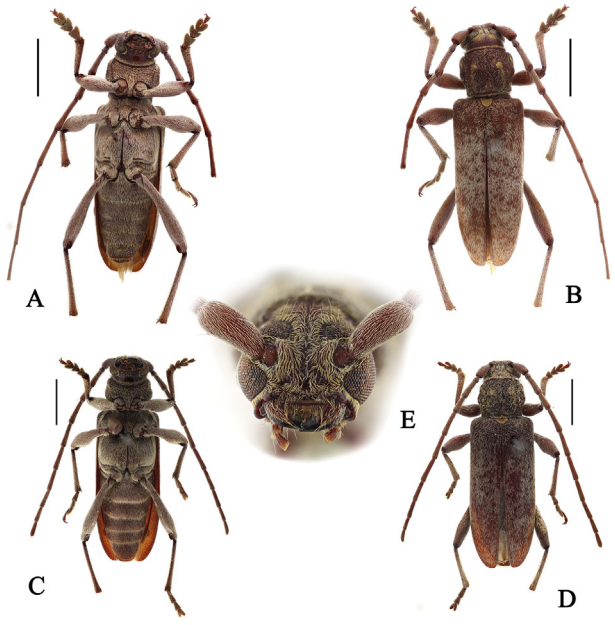

Figure 2. *Trichoferus semipunctatus*: A, male dorsal; B, male ventral; C, female dorsal; D, female ventral <scale bar:10 mm>; E, head, enlarged.

Description. Body length 9.6 ~ 18 mm in male, 15.6 ~ 18.9 mm in female.

Head brown, with densely distributed pale golden pubescence, longer pubescence sparsely present along with labrum. Frons moderately punctured, without any distinct tubercles. Antennal sockets not enlarged, distance between two sockets short, only as long as the length of antennomere I. Antennae 11-is segmented, brown, with short pale yellowish pubescence moderately present, comparatively long hairs sparsely present on distal part of each antennomere. Antennae slightly shorter than or as long as body length in male (1:0.87 to 1:0.94 in male), shorter in female (1:0.71). Antennomere I swollen, ratio of each antennomere 3.3:1.0:3.1:3.0:3.5 :3.3:3.4:3.0:2.8:2.6:2.5 in male, 3.0:1.0:2.8:2.9:3.2:3.3:3.3:3.1:2.7: 2.5:2.4 in female.

Pronotum brown, unicolor, with fine pale pubescence, moderately and evenly punctured. Pronotum spherical, slightly wider than long (W:L = 1:0.84 in male, 1:0.83 in female), lateral margin weakly uneven, slightly angulated on anterior 1/6 and posterior 1/6; intercoxal prosternal process narrowed toward the apex, not developed, reaching the posterior margin of coxal cavity. Leg brown, densely covered with long pale golden hairs, distal 1/3 of femur weakly swollen.

Elytra brown, with spotty covered pale yellow pubescence. Elytra longer than wide (1: 2.5 in male, 1: 2.34 in female), almost parallel with rounded apex, humeral margin slightly round, small puncture evenly distributed. Scutellum semicircular, densely setose with pale gold pubescence.

Male genitalia. Examined tegmen much longer than wide, 3.46 mm in length, 0.89 mm in width. Lateral lobes distinctly separated into two parts, gradually contracting toward apex; apex round. Fine soft hairs cover medial side of lateral lobe thoroughly, while only apical half covered with on lateral side. Distal two third (except long hairs on apex) consists ring part, acute in apex. Median lobe plus median struts 3.86 mm in length, much longer than wide, slightly curved in lateral view. Median lobe almost parallel with acute apex. Median struts moderately elongated, taking about half of total length.

Specimens examined. [Type specimens *T. flavopubescens*, MNHB] 4♀, Gottsche, Seoul, vii 1884 [SNUC] 1♀, Jeongansejong-ro, Yeongi-myeon, Sejong, Korea, 8 vi 2005 (G. J. Lee); 1♀, Jinbu-myeon, Pyeongchang-gun, Gangwon-do, Korea, 20 vii 1999 (S. I. Han); 1♀, Gwangyang-si, Jeollanam-do, Korea, 22 vi 2004 (S.Y. Yang); 1♀, Surisan-ro, Gunpo-si, Gyeonggi-do, Korea, 19 xi 2009 (K.I. Min); 1♀, Gwangwon-ri, Nae-myeon, Hongcheon-gun, Gangwon-do, Korea, 24 vii 1981 (C.W. Kim); 1♀, Banghak-ro, Gangbuk-gu, Seoul, Korea,

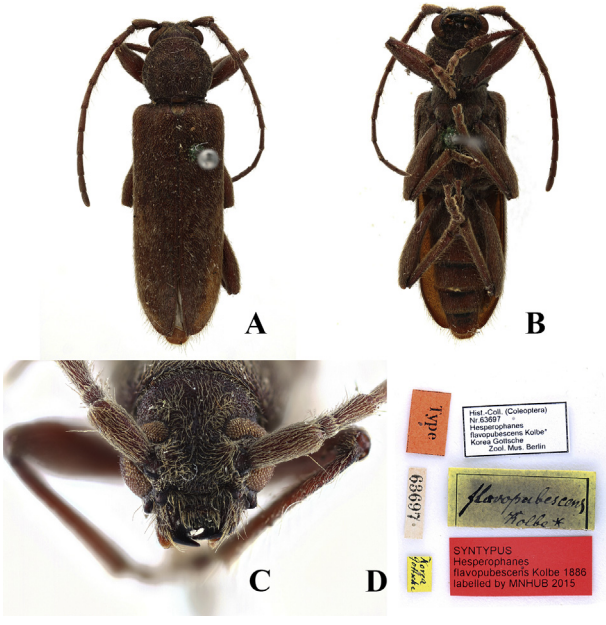

Figure 3. Syntype specimen of *Trichoferus flavopubescens* Kolbe, 1886 (= *T. campestris*): A, dorsal habitus; B, ventral habitus; C, head; D, labels.