Journal of Species Research 11(2):128-131, 2022

Description of a new species of the genus *Venturia* Schrottky (Hymenoptera: Ichneumonidae: Campopleginae) from South Korea

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A new species, *Venturia tenuiabdominalis* Choi sp. nov., belonging to the subfamily Campopleginae, family Ichneumonidae, is described in South Korea. The subfamily Campopleginae was recorded by Förster in 1869 based on genus *Campoplex* and more than 2,100 described species into 66 genera have been reported worldwide. Among the 66 genera of Campopleginae, the genus *Venturia* is one of the large groups, which is more than 140 species worldwide (Yu *et al*., 2016; Vas, 2019a; 2019b; Vas, 2020; Vas and Di Giovanni, 2020; Han *et al*., 2021). A taxonomic study of South Korean *Venturia* was initiated by Choi *et al*. (2012), who reported *Venturia longipropodeum* (Uchida, 1942). A key to species of South Korean *Venturia*, description of new species and diagnostic illustrations are provided.

Keywords: koinobiont, parasitoids, taxonomy, *Venturia tenuiabdominalis* sp. nov.

DOI:10.12651/JSR.2022.11.2.128

Introduction

The subfamily Campopleginae Förster, 1869 is the third largest ichneumonoids group distributed worldwide. Taxonomic studies of the subfamily in South Korea have been undertaken by Korean taxonomists and foreign experts, and 60 species belonging to 14 genera of Campopleginae have been recorded (Lee *et al*., 2018).

The genus *Venturia* Schrottky, 1902, is a moderately large genus comprising 148 described species worldwide, many species of which occur in the Nearctic, Neotropical, and Oriental region (Han *et al*., 2021). In the Eastern Palaearctic, eight species of this genus have been reported and only one species, *Venturia longipropodeum* (Uchida, 1942), from South Korea until now (Choi *et al*., 2012). This genus is closely related to the genus *Campoplex* from which it can be separated by having a strongly propodeal 'neck' that reaches almost to central part of hind coxa, and having a slender petiole (Gauld, 1984). Most species of *Venturia* are known to be solitary koinobiont endoparasitoids of lepidopteran hosts (commonly family Pyralidae) and several species are parasitoids of *Polistes* (Hymenoptera, Vespidae) (Sonan, 1937; He *et al*., 1996; Shaw *et al*., 2016; Yu *et al*., 2016).

In the present paper, we provide a description of the new species, illustrations of diagnostic characters, and a key to South Korean species.

Materials and Methods

The material used in this study was collected by Malaise trapping and was deposited in the Insect Inquiry · Education Institute, Daegu National University of Education (DNUE-IIEI, Daegu, South Korea). Morphological terminology follows Gauld (1991), distributional data follows Yu *et al*. (2016). Specimens were examined using an AxioCam MRc5 camera attached to a stereo microscope (Zeiss SteREO Discovery. V20; Carl Zeiss, Göttingen, Germany), processed using AxioVision SE64 software (Carl Zeiss), and optimized with a Delta imaging system (i-solution, IMT i-Solution Inc. Vancouver, Canada).

Abbreviations are as follows: CB, Chungcheongbuk-do; CN, Chungcheongnam-do; GG, Gyeonggi-do; GN, Gyeongsangnam-do.

Systematic Accounts

Family Ichneumonidae Latreille, 1802 맵시벌과
Subfamily Campopleginae Förster, 1869 자루맵시벌아과

Genus *Venturia* Schrottky, 1902 어리긴배자루맵시벌속

Venturia Schrottky, 1902: 102. Type species: *Venturia argentina*

Devorgilla Cameron, 1907: 51. Type species: *Devorgilla*

dilatata

Balcarcia Brèthes, 1922: 133. Type species: *Balcarcia bergi*

Notamorphota Blanchard, 1946: 292. Type species: *Notamorphota timocraticae*

Slenda Gauld, 1984: 282. Type species: *Slenda ocypeta*

Diagnosis. Generally body slender. Mandible without a ventral flange. Pronotum moderately long in lateral view; mesopleuron with polished speculum. Propodeum long and almost completely areolated except that areola and petiolar areas confluent; apex of propodeum reaching at least to middle of the hind coxa. Fore wing with or without areolet.

Key to species of the genus *Venturia* in South Korea

1. Body 11.5−13.0 mm; fore wing 7.5−8.0 mm long. Antenna with 40 flagellomeres. Fore wing with areolet and long stalk. Hind tibia entirely dark brown to black. Ovipositor strongly long, twice longer than 1st tergite. Apical margins of metasomal tergites truncated in lateral view ····· *Venturia longipropodeum*
− Body 6.5−8.5 mm; fore wing 3.8−4.5 mm long. Antenna with 27−31 flagellomeres. Fore wing without areolet. Hind tibia brown, darkened basally and apically. Ovipositor almost as long as 1st tergite. Metasomal tergites shiny, apical margins of tergites round in lateral view and concave in dorsal view ····· ····· *Venturia tenuiabdominalis* Choi sp. nov.

***Venturia tenuiabdominalis* Choi sp. nov. (Fig. 1)**

가는어리긴배자루맵시벌 (신칭)

https://zoobank.org/urn:lsid:zoobank.org:act:652F061E-4F9B-4BE5-AD6A-024FD1FC8804

Description (female holotype)**.**

Female. Fore wing 3.9 mm (3.8−4.5 mm), body 7.2 mm (6.5−8.5 mm), ovipositor 2.0 mm (1.6−2.0 mm) long.

Color. Head black; mandible, palpi, and antenna brown; tegula dark brown; fore and mid legs brown; hind coxa brown, darkened basally; hind tibia brown, darkened basally and apically; petiole and 2nd tergite black; the rest parts of tergites brown, darkened dorsally; ovipositor reddish brown; ovipositor sheath black.

Head: Face convex, densely granulated, distance between margin of antennal socket and clypeal margin 1.08 times as long as distance between of minimum length of inner orbits. Clypeus not separated from face. Malar space 0.5 times as long as basal width of mandible. Lower tooth of mandible as long as upper one. Frons and temple densely granulated. Vertex slightly granulated. Occipital carina weak but complete, concave in dorsal view. Temple 0.7 times as wide as transversal diameter of eye in lateral view. Distance between lateral ocellus and eye 1.3 times as long as ocellus maximum diameter. Antenna with 31 flagellomeres (27−31 flagellomeres). First flagellomere 4.4−4.5 times as long as wide, basal flagellomeres elongated and apical flagellomeres square.

Mesosoma: Elongated. Pronotum slightly granulated with numerous striae centrally; epomia present. Mesoscutum roughly and densely granulated; without notaulus. Mesopleuron regularly punctate; speculum weak convex and glabrous. In front of speculum with transversal striae and mesopleural pit weak. Epicnemial carina complete and sternaulus weak. Mesoscutellum convex, without lateral carina. Metapleuron densely granulated. Propodeum elongated, well developed median longitudinal carinae and with transversal wrinkles, surface granulated. Propodeum reaching at the apical hind coxa. Propodeal spiracle very small and round, not reaching pleural carina. Submetapleural carina present. Legs slender and thin. Trochanter longer than trochantellus. Hind tarsi ratio is 16 : 7 : 5 : 3 : 4. Tarsal claw simple. Fore wing without areolet, vein 1st intercubitus longer than cubitus. Nervulus vein distad to basal vein. Hind wing with four distal hamuli. Nervellus intercepted lower 0.3; discoidella investigial.

Metasoma: Elongated. Petiole smooth, lateral carina present, lateral pit and glymma absent. Basal area of 2nd sternite with transversal wrinkles. Tergites smooth and glabrous. Margins of tergites 3−7 round in lateral view and concave in dorsal view. Ovipositor thick and upcurved with notch of upper valve, longer than hind tibia. Ovipositor sheath thin.

Male. Unknown.

Material examined. [South Korea] (TD: DNUE_IIEI): Holotype: 우, CB, Danyang-gun, Youngchun-myeon, Namcheon-ri, Mt. Sobaeksan National Park, 6−28.vii.2006, J.W. Lee. Paratypes: 4우우, CB, Danyang-gun, Youngchun-myeon, Namcheon-ri, Mt. Sobaeksan National Park, 6−28.vii.2006, J.W. Lee; 1우, ditto, 28.vii−13.viii.2006, J.W. Lee; 2우우, CB, Danyang-gun, Danyang-eup, Cheongdong-ri, 59 site, 25.vii−6.viii.2009, S.H. Oh; 2우우, ditto, 6−18.viii.2009, S.H. Oh; 1우, CN, Gyeryong-si, Sindoan-myeon, Buam-ri, Mt. Gyeryongsan National Park, Gapsa, 17.v−26.viii.2012, J.W. Lee; 1우, CN, Gyeryong-si, Sindoan-myeon, Buam-ri, Mt. Gyeryongsan National Park, Sutonggol, 17.v−29.viii.2012, J.W. Lee; 2우우, GG, Gapyeong-gun, Cheongpyeong-myeon, Goseong-ri, Mt. Homyeongsan (Malaise trap), 16−30.vii.2009, J.O. Lim; 1우, GN, Hamyang-gun, Macheon-myeon, Meokjeon-ri, Baekmu-dong, Mt. Jirisan National Park, 14.vii−11.x.2011, J.C. Jeong.

Host. Unknown.

Distribution. South Korea.

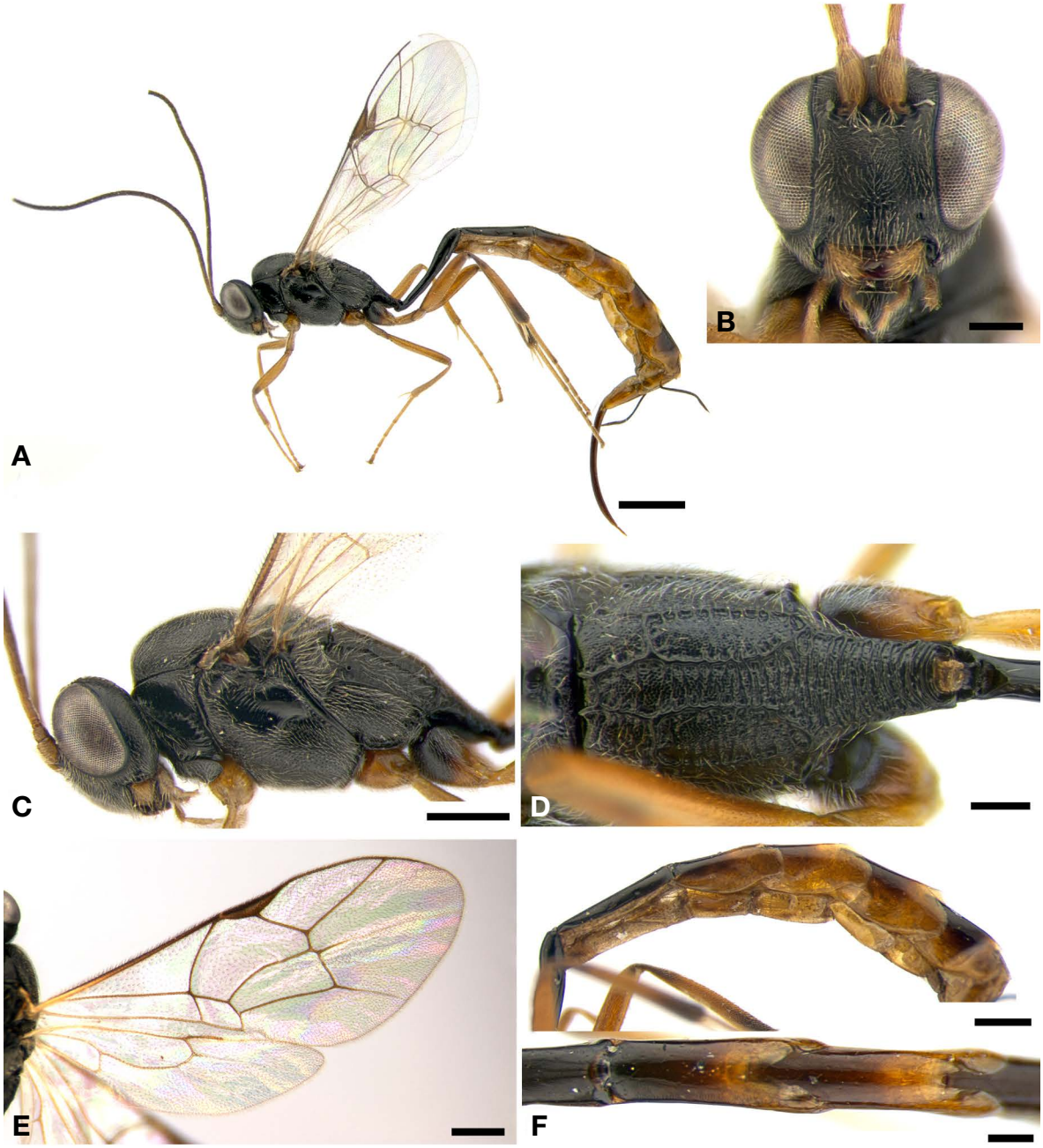

Fig. 1. *Venturia tenuiabdominalis* sp. nov. A. Habitus in lateral view; B. Head in frontal view; C. Mesosoma in lateral view; D. Propodeum in dorsal view; E. Wings; F. Metasoma in lateral view; G. Tergite 3 and 4 in dorsal view. Scale bars: A, 1.0 mm; B, D, G, 0.2 mm; C, E, F, 0.5 mm.

Etymology. Name originates from the Latin "tenuis", *tenuiabdominalis* meaning "slender abdominalis".

Remarks. It is similar to *Venturia ocypeta* (Gauld, 1984), but divers by ovipositor longer than hind tibia (ovipositor shorter than hind tibia in *V. ocypeta*); hind tibia brown and darkened apically and basally (hind tibia entirely brown to dark brown in *V. ocypeta*); nervellus intercepted lower 0.3 (nervellus not intercepted but curved in *V. ocypeta*); antennal flagellomeres and body length longer than *V. ocypeta* (27−31 flagellomeres in *V. tenuiabdominalis* sp. nov. but 21−23 flagellomeres in *V. ocypeta*).

Acknowledgements

I am grateful to Dr. Gavin Broad of the Natural History Museum in London for providing specimens from NHM. I also thank Prof. Jong-Wook Lee (Georim Entomologi-

cal Institute) and Prof. Jong Ok Lim (Wonkwang University) for giving specimens. This work was supported by a grant from the Daegu National University of Education (DNUE), funded by the Republic of Korea (RC2020058).

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Submitted: February 15, 2022
Revised: March 2, 2022
Accepted: March 2, 2022