



## A new species, *Hemicrepidius (Miwacrepidius) rubriventris* sp. nov. (Coleoptera, Elateridae, Denticollinae) from Republic of Korea

TAEMAN HAN<sup>1,2</sup>, YOUNGBO LEE<sup>1</sup>, NAMJUNG KIM<sup>1</sup>, SANGWOOK PARK<sup>2</sup>, WATARU SUZUKI<sup>3</sup>,  
SEUNGHWAN LEE<sup>2</sup> & HAECHUL PARK<sup>1,4</sup>

<sup>1</sup>Applied Entomology Division, Department of Agricultural Biology, National Academy of Agricultural Science, Suin-ro 150, Gweon-seon-gu, Suwon, 441–100 KOREA

<sup>2</sup>Division of Entomology, School of Agricultural Biotechnology, Seoul National University, San 51–1 Shillim-dong, Gwanak-gu, Seoul, 151–742 KOREA

<sup>3</sup>Department of Biology, Hosei University Daini High School, Kizukioomachi 6-1, Nakahara-ku, Kawasaki, Kanagawa 211-0031, JAPAN

<sup>4</sup>Corresponding author. E-mail: [culent@korea.kr](mailto:culent@korea.kr)

### Abstract

The subgenus *Miwacrepidius* of the genus *Hemicrepidius* is represented by a monotypic species, *H. (M.) subcyaneus* (Motschulsky 1866) from Japan, and no other congener of the subgenus has been known until now. However, three female specimens of a novel species belonging to this subgenus were recently collected from the Republic of Korea. To delimitate the species boundary of the new species compared with the monotypic species, *H. (M.) subcyaneus*, we attempted an integrative taxonomy based on both morphological and DNA barcoding approaches. An examination of the results revealed ten diagnostic characteristics and large genetic distances, ranging from 8.40%, between these two species; therefore, we herein describe and illustrate the new species, *Hemicrepidius (Miwacrepidius) rubriventris* sp. nov., based on female types.

**Key words:** taxonomy, DNA barcode, Elateridae, *Hemicrepidius (Miwacrepidius) rubriventris* sp. nov., Korea

### Introduction

*Miwacrepidius* was originally elected as a genus by Ôhira (1962) based on a single species, *Athous subcyaneus* Motschulsky 1866 from Japan. Then it was reduced as a subgenus under the genus *Hemicrepidius* Germar 1839 (Type species: *Elater memnonius* Herbst 1806) based on homologous features such as the basically identical structures of male and female genitalia at the genus level (Becker 1979) and different features represented in the antennae and the scutellum (Kusakari 1983; Ôhira 1987; Kishii 1987). Taxonomically, this subgenus was characterized from the nominotypical subgenus, *Hemicrepidius*: *Miwacrepidius* has a fusiform body, subpecinate antennae in males and strongly serrated ones in females, a 2nd antennomere that is wider than long, especially the distinctly developed longitudinal carina on the disc of the scutellum, 1st to 3rd tarsomeres with ventral lobes, and the 4th tarsomere simple (Ôhira 1987; Kishii 1987). Whereas, *Hemicrepidius* has a cylindrical body, serrated antennae in both males and females, a 2nd antennomere that is longer than wide, a flat or smoothly and longitudinally convex disc of the scutellum, and 1st to 4th tarsomeres with ventral lobes (Becker 1979; Kishii 1987). The subgenus *Miwacrepidius* has not been recognized in the Korean fauna, but we recently collected three female specimens of a new species that closely resembles *H. (M.) subcyaneus* in morphology from the Republic of Korea, which is isolated geographically from the distribution area of *H. (M.) subcyaneus*. We describe this species as *H. (M.) rubriventris* sp. nov. and provide a significant diagnosis based on morphological characteristics and a molecular approach with DNA barcode profiles through a comparative examination with *H. (M.) subcyaneus*.

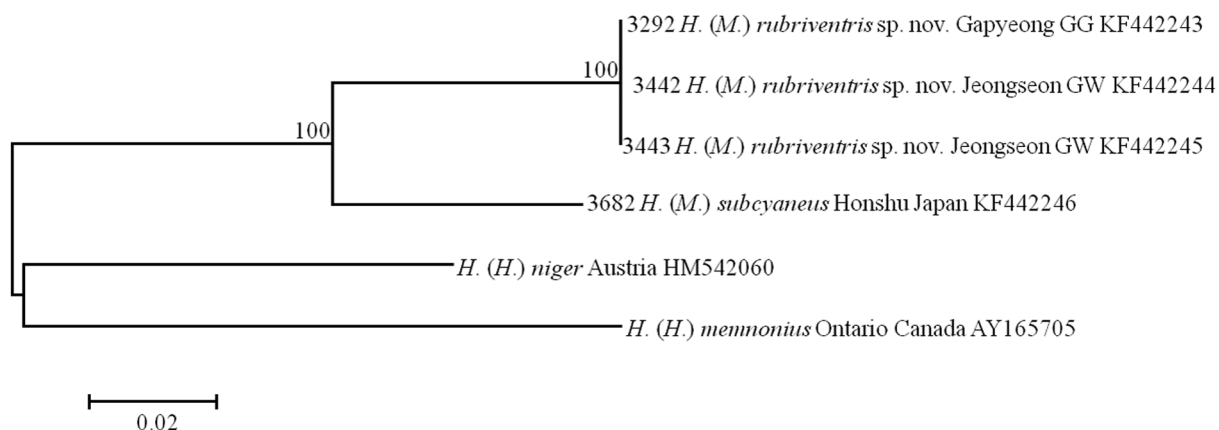
**Male.** Unknown.

**Ecology.** Unknown.

**Distribution.** Republic of Korea.

**Ethymology.** This new species was named *H. (M.) rubriventris* based on its reddish brown ventral surface.

**Reference specimens.** *Hemicrepidius (Miwacrepidius) subcyaneus* (Motschulsky 1866): male and female, Sasago-tôge, Yamato-mura, Yamanashi Prefecture, Honshu, Japan. 2. VIII. 1987. H. Yamazaki leg., identified by W. Suzuki, DNA 3650 and 3651; 2 males and female, ditto, 21. VI. 1987. H. Yamazaki leg., identified by W. Suzuki, DNA 3652–3654; female, Occhisawa, Ueno-mura, Tano-gun, Gunma Pref., Honshu, Japan. 30. VI. 2013. T. Horiguchi leg., identified by W. Suzuki, DNA 3682.



**FIGURE 5.** Neighbor-joining phenogram of the Kimura-2-parameter based on DNA barcoding region of the *COI* gene in MEGA 5.2 of *Hemicrepidius (Miwacrepidius) rubriventris* sp. nov. from Korea and *H. (M.) subcyaneus* from Japan.

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