

A Redescription of *Mordellina* (*Mordellina*) *gracilis* (SCHILSKY) (Coleoptera, Mordellidae, Mordellistenini), the Type Species of the Genus

Tomoyuki TSURU*

Systematic Entomology, Department of Ecology and Systematics, Graduate School of
Agriculture, Hokkaido University, Sapporo, 060–8589 Japan

Abstract *Mordellina* (*Mordellina*) *gracilis* (SCHILSKY, 1908), the type species of the genus is redescrbed on the basis of five syntypes deposited at the Museum für Naturkunde der Humboldt-Universität, Berlin. Male and female genital segments are observed for the first time.

Introduction

Mordellidae is one of the most difficult families to identify and classify inner taxa among the Coleoptera. One of the reasons for this difficulty is indistinctness of character states of higher taxa such as genera or subgenera. Accordingly, detail inspection of the type species of each taxon is essential for the clarification of these taxonomic problems. However, most of them are lacking in sufficient descriptions. Particularly, the genitalic character states of each type species are scarcely described in spite of the suggestion of its taxonomic importance by LU *et al.* (1997). Therefore, it is important to redescrbe the type species of each taxon and observe genitalic features to clarify higher classification of the Mordellidae.

The genus *Mordellina* SCHILSKY, comprising about 100 species at the present moment, is a relatively large genus in the tribe Mordellistenini, and is known from Africa, Asia, and North America. The genus was originally erected by SCHILSKY (1908) on the basis of a single African species, *Mordellistena* (*Mordellina*) *gracilis* SCHILSKY, 1908, as a subgenus of *Mordellistena* COSTA, 1854. After that, ERMISCH (1954 a) regarded *Mordellina* as an independent genus, and placed *Pseudomordellistena* ERMISCH, 1952 as a subgenus of *Mordellina*. *Mordellina* (*Mordellina*) *gracilis*, the type species of the genus was already redescrbed by ERMISCH (1954 a) and FRANCISCOLO (1967). However, these studies were lacking in sufficient descriptions especially in the genitalic features. In this paper, I am going to redescrbe the type species, *Mordellina* (*M.*) *gracilis*, based on five syntypes deposited at the Museum für Naturkunde der Humboldt-Universität, Berlin, and observe male and female genital segments of this species for the first time.

The following abbreviations for institution and measurements are used in this paper. Institution: MNHUB – Museum für Naturkunde der Humboldt-Universität, Berlin. Measurements: BL – body length between anterior angle of pronotum and apices of elytra; BT – maximal thickness of body; AL – antennal length; HL – head length between apex of clypeus and posterior margin of head capsule; HW – maximal width of head across eyes; PL – length of pronotum along mid line; PW – maximal width of pronotum; EL – maximal length of elytra; EW – maximal width between outer margins of elytra; PYL – length of pygidium. The parenthesis after the ranges in

* Present address: Echigo-Matsunoyama Museum of Natural Science, Matsunoyama-matsukuchi, Tokamachi City, Niigata, 942–1411 Japan

measurement indicates averages of observed specimens.

Redescription

Mordellina (Mordellina) gracilis (SCHILSKY, 1908)

(Figs. 1–4)

Mordellistena (Mordellina) gracilis SCHILSKY, 1908, 137 [original description]. — CSIKI, 1915, 29 [list].

Mordellina (Mordellina) gracilis: ERMISCH, 1954 a, 184 [redescription]; FRANCISCOLO, 1967, 136 [redescription].

Type materials. Syntypes: 1 ♂, 1 ♀, originally labeled “DSW Afrika, Okahandya, Casper S. G.” interpreted as follows “Okahandja, Deutsch-Südwestafrika (Namibia), S. G. Casper leg.” (MNHUB); 1 ♀, originally labeled “Gr. Nama-Land, Kub, Casper S. G.” interpreted as follows “Kub, Great Nama Land, Namibia, S. G. Casper leg.” (MNHUB); 2 ♀♀, originally labeled “Betschuanaland-Prot., Kalahari, Kang-Lekututu, XII.04, L. Schultze S.” interpreted as follows “Kang~Lehututu, Kalahari Desert, Botswana, XII.1904, L. Schultze leg.” (MNHUB).

Distribution. Namibia, Botswana and South Africa.

Diagnosis. This species is closely similar in general appearance to *Mordellina (M.) gracilentia* (ERMISCH, 1952), *M. (M.) leontovitchi* (ERMISCH, 1952) and *M. (M.) vanhillei* (ERMISCH, 1954 b), but clearly distinguished from them by the following combination of morphological features: 1) fore femur completely black in ground color; 2) antenna short, about 1.34 times as long as head length in male, about 1.22 times in female; 3) each of 5th–10th segments of antenna about 1.2 times as long as wide in both sexes; 4) basal comb of hind tibia very long, about twice as long as middle one.

Redescription. Male (syntype). Body elongate tear-shape. Coloration: black in ground color; antennae, mouth parts and all legs black clouded with dark brown. Almost all of body

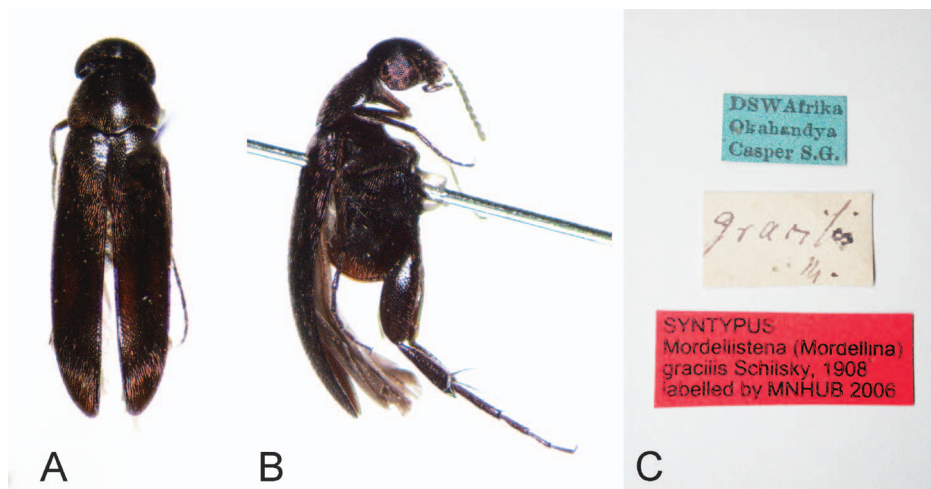


Fig. 1. Habitus of *Mordellina (M.) gracilis* (SCHILSKY), ♂, syntype. — A, Dorsal view; B, lateral view; C, labels.

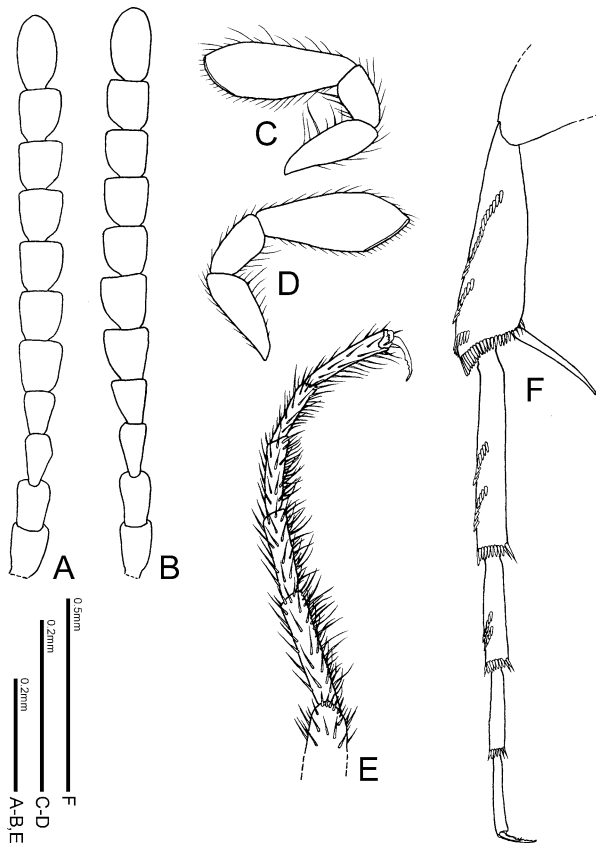


Fig. 2. *Mordellina (M.) gracilis* (SCHILSKY), syntypes. — A, Left antenna, ♂, dorsal view; B, right antenna, ♀, dorsal view; C, right maxillary palpus, ♂, dorsal view; D, left maxillary palpus, ♀, dorsal view; E, left fore tarsus, ♂, dorsal view; F, right hind tibia and tarsus, ♂, ventral view.

densely covered with pale yellow shining pubescence.

Head strongly convex. Eyes large, nearly circular, weakly emarginate in front, sparsely haired; total breadth of both eyes occupy about 36% of head width in dorsal view; the diameter of a facet about 0.02 mm. Tempora extremely narrow, about half as wide as diameter of a facet. Antenna (Fig. 2 A) short, weakly serrate in 5th–10th segments: 1st and 2nd segments cylindrical; 3rd slender, about 1.8 times as long as wide; 4th shortest, about 1.2 times as long as wide; each of 5th–10th about 1.2 times as long as wide; 11th elliptical, about 1.65 times as long as wide; proportional lengths of segments from base to apex: 5.8 : 5.8 : 5.8 : 5.0 : 6.5 : 5.8 : 5.8 : 6 : 5.9 : 6.0 : 8.3. Maxillary palpus (Fig. 2 C) slender; terminal segment elongate securiform, apical margin about half as long as inner one.

Pronotum rounded triangular; lateral margins weakly depressed posteriorly in profile; posterior angles a little wider than 90 degrees in lateral view with tip moderately rounded. Scutellum triangular, wider than long, with apex rounded. Elytra long and narrow, tapered posteriorly and rounded at each apex; sides subparallel. Pygidium short, about 2.45 times as long as basal width, slightly curved ventrad, gradually narrowed to the apex in dorsal view, pointed at tip. Anal sternite triangular, with apex rounded.

Fore leg very slender: ventral surface of trochanter, femur and tarsus densely covered with long hairs; tarsus (Fig. 2 E) long and slender, each of 1st–3rd segments long, straight and cylindrical, 4th segment also cylindrical, obliquely truncated at apex, jointed with terminal

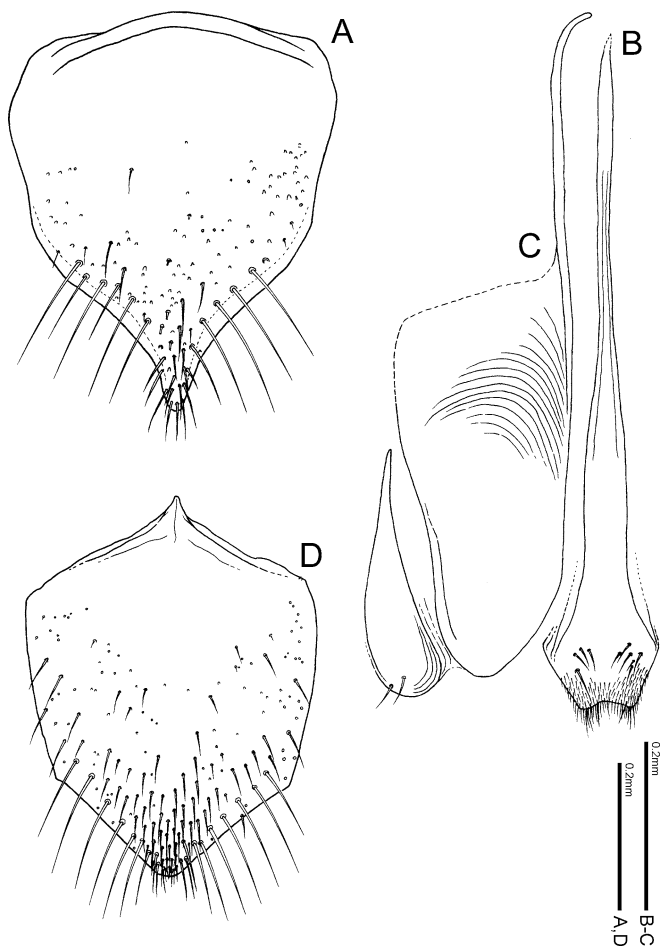


Fig. 3. *Mordellina (M.) gracilis* (SCHILSKY), syntypes. — A, Eighth sternite, ♂; B, ninth sternite, ♂; C, right half of ninth and tenth tergites, ♂; D, eighth sternite, ♀.

segment at apical oblique surface.

Hind leg (Fig. 2 F) very slender with long and oblique combs formulated as 3, 2, 2, 0; tibia provided with three combs, apical one shortest and parallel to tibial apical edge, middle one oblique and clearly longer than apical one, basal one oblique and longest, about twice as long as middle one, nearly reaching inner margin and basal 1/4 of tibia; 1st and 2nd segments of tarsus provided with two oblique combs; 3rd and 4th without combs. Inner spur of hind tibia incurved, about half as long as 1st segment of hind tarsus. Outer spur absent.

Male genital segments. Eighth sternite (Fig. 3 A) short and shield-shaped, about 1.35 times as long as wide; apical lobe moderately pointed, short-haired in central area, long-haired on its margin. Ninth sternite (Fig. 3 B) extremely long and narrow, gradually extended to apical area, widely emarginated at apex with short hairs on apical surface. Ninth tergite (Fig. 3 C) divided into two plates, each of which is almost symmetrical and of elongate bean-shape, connected at base with each other; each basal part very narrowly projected to base, without basal oblong plate on dorsal surface; each apical part widely rounded. Tenth tergite (Fig. 3 C) composed of almost

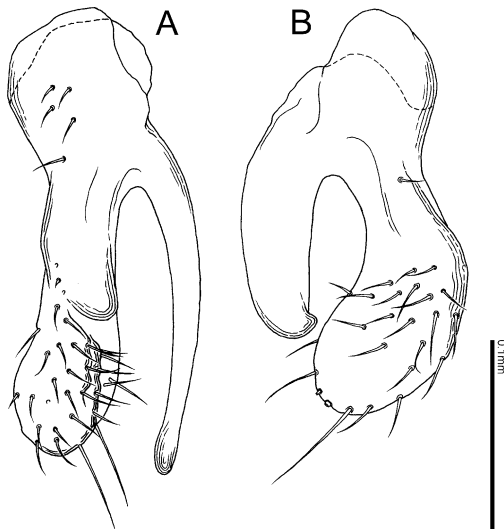


Fig. 4. *Mordellina* (*M.*) *gracilis* (SCHILSKY), ♂, syntype. — A, Left paramere, inner view; B, right paramere, inner view.

symmetrical two plates, each of which is elongated drop-shaped with a few short hairs on apical surface. Parameres asymmetrical, each provided with a ventral branch; left paramere (Fig. 4 A) with normally thick main lobe, broadened at apex, basal process hump-shaped with its apex rounded, located at the basal 2/3 of main lobe, ventral branch remarkably long and narrow, weakly incurved, branching at near base, far exceeding tip of main lobe; right paramere (Fig. 4 B) with normally thick main lobe, constricted at middle, remarkably broadened to apex, ventral branch stout, branching at near base, reaching apical 1/5 of main lobe. Penis needle-like, about 0.6 times as long as body length; apical lobe moderately rounded at tip.

Proportion of body (one syntype): BL/EW 3.76; BT/EW 1.40; HW/HL 1.06; AL/HL 1.34; PW/PL 1.06; PL/HL 1.14; EL/EW 3.08; EL/PL 3.25; PYL/EL 0.33.

Female. Closely similar in general appearance to male, but different from it mainly in the following respects: 1) eyes smaller, total breadth of both eyes occupied about 29% of head width in dorsal view; 2) antenna (Fig. 2 B) somewhat short, about 1.22 times as long as length of head.

Female genital segments. Eighth sternite (Fig. 3 D) short and shield-shaped, about 0.15 times as long as body length; basal apodeme extremely short, completely fused with the basal margin of eighth sternite. Ovipositor short, sparsely covered with short and long hairs on apical surface.

Proportion of body (averages of four syntypes): BL/EW 3.66; BT/EW 1.28; HW/HL 1.05; AL/HL 1.22; PW/PL 1.07; PL/HL 1.13; EL/EW 3.14; EL/PL 3.38; PYL/EL 0.26.

Measurements. Male (one syntype): BL 3.27 mm; EW 0.87 mm; BT 1.21 mm. Female (four syntypes): BL 3.42 – 3.62 (3.50) mm; EW 0.92 – 0.98 (0.96) mm; BT 1.15 – 1.31 (1.23) mm.

Acknowledgements

I wish to express my hearty thanks to Dr. Masahiro ÔHARA (Hokkaido University Museum, Sapporo) for his kind guidance and critical review of the manuscript. I am also deeply indebted to Dr. Bernd JAEGER (MNHUB) for loan of type materials. In closing, I am grateful for the 21st Century COE grant from the Japanese Ministry of Education, Culture, Sports, Science and Technology for the “Neo-Science of Natural History” Program (Leader: Hisatake OKADA).

要 約

鶴 智之: モンヒメハナノミ属の基準種 *Mordellina (Mordellina) gracilis* (SCHILSKY) (コウチュウ目ハナノミ科ヒメハナノミ族)の再記載。—— ハナノミ科ヒメハナノミ族に属するモンヒメハナノミ属の基準種 *Mordellina (Mordellina) gracilis* (SCHILSKY, 1908) について, ドイツ・フンボルト博物館に所蔵されている5つのシタイプ標本に基づき再記載を行った。本研究で, 外部形態形質を詳細に再検討するとともに, 新たに雄第9, 第10腹節および雌第8腹板の形状を検討した。その結果, この属基準種は雄第9腹板がきわめて細長いことや, 雌第8腹板の内突起が著しく短く, 完全に腹板基部と融合するなど他の属の種にはみられない特徴的な形質状態を示すことが分かった。

References

- COSTA, A., 1854. Mordellidae. *Fauna del Regno di Napoli* 16. *Naplea*, 32 pp, 6 col. pls.
- CSIKI, E., 1915. Mordellidae. In JUNK, W., & S. SCHENKLING, (eds.), *Coleopterorum Catalogus*, pars 63. 3–84 pp. W. Junk, Berlin.
- ERMISCH, K., 1952. Neue Mordelliden aus der chinesischen Provinz Fukien. *Ent. Bl., Krefeld*, **47–48**: 143–157.
- 1954 a. Ueber Typen und neue Arten afrikanischer Mordelliden. *Mem. soc. ent. ital.*, **33**: 167–200.
- 1954 b. Neue südafrikanische Mordelliden aus einer Aufsammlung des Departement of Entomology der Rhodes University, Grahamstown (24. Beitrag zur Kenntnis der Mordelliden). *Ent. Bl., Krefeld*, **50**: 92–106.
- FRANCISCOLO, M. E., 1967. Coleoptera, Mordellidae: A monograph of the South African genera and species. 3. Tribe Mordellistenini. *South African Animal Life*, Chapt. 6: 67–203.
- LU, W., J. A. JACKMAN & P. W. JOHNSON, 1997. Male genitalia and phylogenetic relationships in North American Mordellidae (Coleoptera). *Ann. ent. Soc. Am.*, **90**: 742–767.
- SCHILSKY, J., 1908. Mordellidae. In SCHULTZE, L. (ed.), Zoologische und anthropologische Ergebnisse einer Forschungsreise im westlichen und zentralen Südafrika. Bd 1, Lfg 1. *Denkschr. mediz.-naturw. Ges., Jena*, **13**: 115–117.

Manuscript received 28 January 2011;
revised and accepted 13 April 2011.