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**NOTES ON TAIWANESE SPECIES OF THE GENUS *SAPRINUS*
(COLEOPTERA: HISTERIDAE), WITH REDESCRIPTIONS OF *S. OPTABILIS*
AND *S. SPLENDENS***

By MASAHIRO ÔHARA

Abstract

ÔHARA, M. 2003. Notes on Taiwanese species of the genus *Saprinus* (Coleoptera: Histeridae), with redescrptions of *S. optabilis* and *S. splendens*. *Ins. matsum. n. s.* 60: 31–41, 6 figs., 1 Tab.

Two species of the genus *Saprinus* are recorded from Taiwan. *S. optabilis* and *S. splendens* are redescrbed and illustrated.

Key words. Coleoptera, Histeridae, *Saprinus*, taxonomy, redescrptions.

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INTRODUCTION

Worldwide, the genus *Saprinus* contains 154 species (Mazur, 1997). Of these, only four from the Taiwanese region have been previously recorded, and no revisionary work has been undertaken for the region.

In this paper, two species of the genus are recognized from Taiwan: *S. optabilis* Marseul and *S. splendense* (Paykull). These species are redescribed and illustrated, with emphasis on the male or female genitalic features. Two other species recorded by Lewis (1915), namely, *S. quadriguttatus* and *S. semistriatus*, have not been available for this study and remain to be verified, because there are some doubts regarding Lewis's study on the basis of the collection of Dr. Tokuichi Shiraki (Kurosawa, 1980).

I am deeply grateful to Professor M. Suwa (Systematic Entomology, Faculty of Agriculture, Hokkaido Univ.), Professor S. Mazur (Warsaw Agricultural University, Poland), the late Dr. T. Nakane, the late Dr. K. Baba, Mr. A. Iwasaki (Hokkaidô), Dr. Y. Y. Lien (University of Taiwan), Dr. K. Masumoto (Tôkyô), and Dr. S. Osawa (Ôsaka) for their encouragements and providing specimens, and also, to Dr. S. Nomura (NSMT: National Science Museum (Natural History), Tokyo) for giving me the opportunity to examine valued material in the Museum under his care.

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REDESCRIPTIONS AND NOTES

Genus *Saprinus* Erichson, 1834

Saprinus Erichson, 1834: 172 [type species: *Hister nitidulus* Fabricius, 1801: 85. Designated by Westwood, 1840: 22]; Mazur, 1997: 218.

Saprinus optabilis Marseul, 1855 (Figs. 1 – 3)

Saprinus optabilis Marseul, 1855: 438; Bickhardt, 1913: 177 [Kosempo]; Lewis, 1915: 56 [Koshun]; Miwa, 1931: 51 [Kôshun]; Dahlgren, 1968: 261 [figures of genitalia]; Mazur and Ôhara, 2003: 8 [Thailand].

* Measurements. Measurements of some body parts are given in text and tables in the order of range, mean \pm standard error (all in mm), and sample size. Abbreviations used in the measurements are as follows: PPL: length between anterior angles of pronotum and apex of pygidium, PEL: length between anterior angles of pronotum and apices of elytra, APW: width between anterior angles of pronotum, PPW: width between posterior angles of pronotum, PL: length of pronotum along mid line, EL: length of elytron along sutural line, EW: maximal width between outer margins of elytra, ProW: maximal width of propygidium, ProL: length of propygidium, PyL: length of pygidium, PTL: length of protibia, MSTL: length of mesotibia, MTTL: length of metatibia. See also Ôhara (1994: 8, fig. 2).

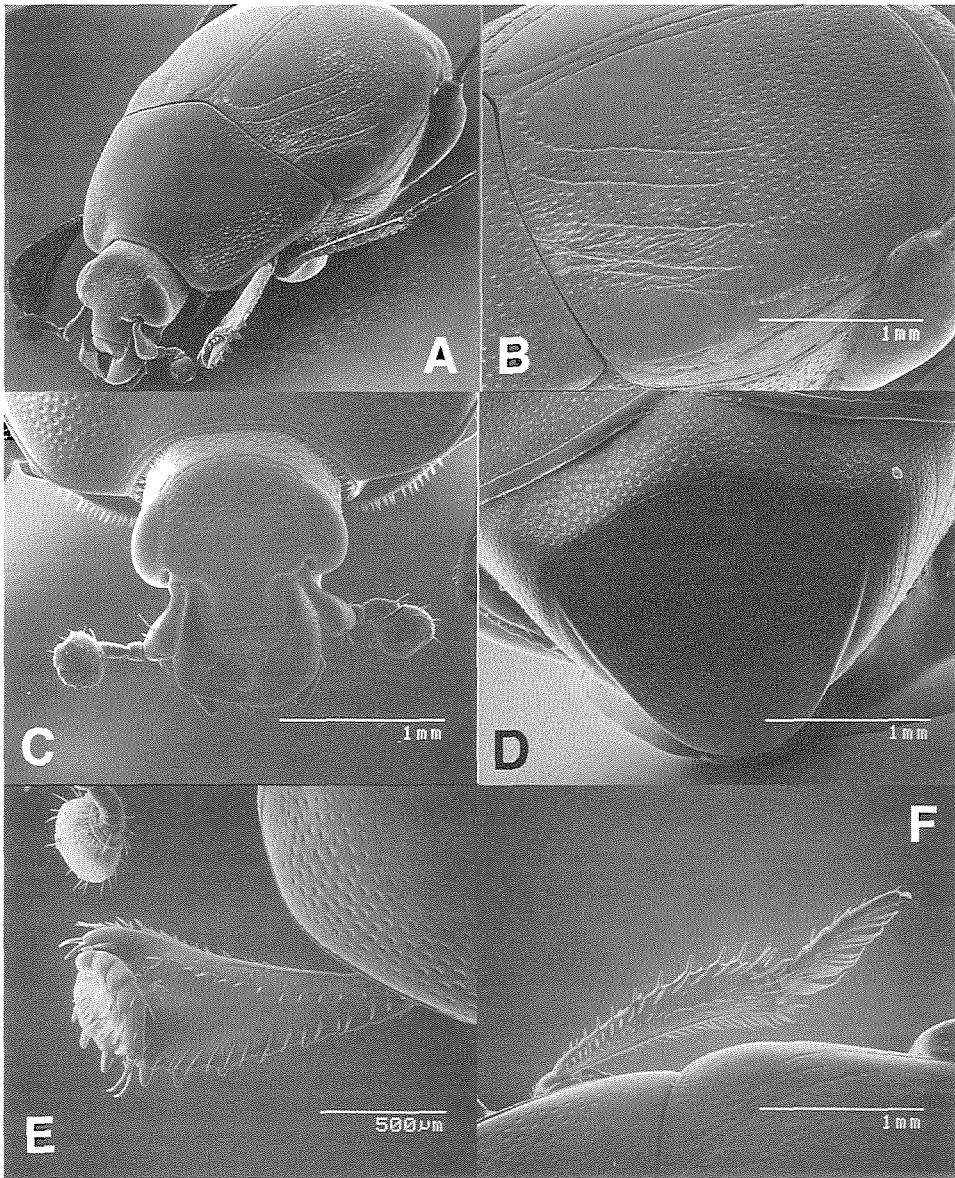


Fig. 1. *Saprinus optabilis*. A: Adult, oblique view. B: Left elytron, dorsal view. C: Head, frontal view. D: Propygidium and pygidium, caudal view. E: Left protibia, dorsal view. F: Right mesotibia, male, dorsal view. [A, B, E, F: male, MO-99002 (Shiztou, Puli); C, D: male, MO-03093 (Nanshanchi, Puli)].

Saprinus dives Lewis, 1911: 88, synonymized by Dahlgren, 1969: 266.

Saprinus (Saprinus) optabilis: Mazur, 1997: 226.

Redescription. Body length*, PPL, male, 3.92 – 5.14 mm (4.54 ± 0.13 , n=12), female, 4.02 – 5.64 mm (4.95 ± 0.12 , n=12), PEL, male, 3.48 – 4.56 mm (4.11 ± 0.10 , n=12),

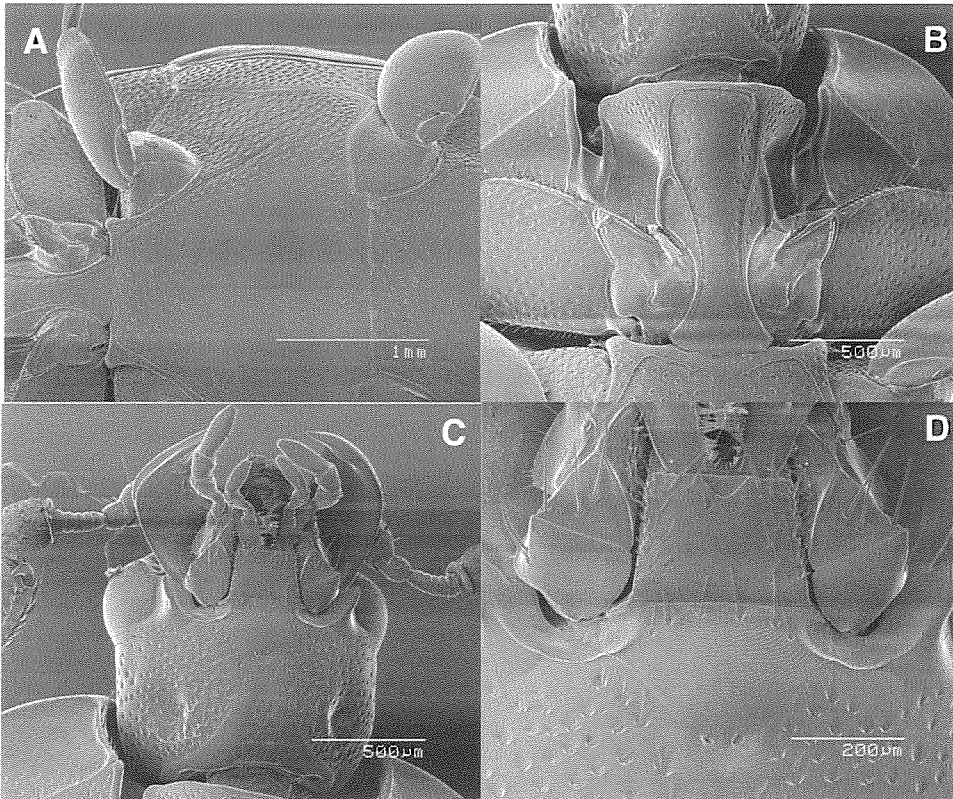


Fig. 2. *Saprinus optabilis*. A: Meso- and metasterna, ventral view. B: Prosternum, ventral view. C: Head, ventral view. D: Mentum and submentum, ventral view. [A–D: male, MO-03093 (Nanshanchi, Puli)].

female, 3.72 – 4.80 mm (4.48 ± 0.09 , $n=12$). Width, male, 2.94 – 3.77 mm (3.38 ± 0.08 , $n=12$), female, 3.09 – 4.08 mm (3.75 ± 0.08 , $n=12$). Biometric data are given in Table 1. Body broadly oval and strongly convex. Cuticle very strongly shining with green metallic lustre; pronotum black; elytra with light blue or green metallic lustre; funicle of antennae and tarsi dark brown; tibiae black.

Frontal stria of head (Fig. 1C) finely impressed, round anteriorly but interrupted medially, its sides straight. Supraorbital stria complete and well impressed. Disk of front densely covered with coarse and deep punctures that are separated by their own diameter and becoming sparser basally; a large deep puncture present at medio-basal fourth. Epistoma more densely and finely punctate than the medio-apical area of the frontal disk. Labrum broadly and deeply depressed medially, its anterior margin emarginate medially. Mentum (Fig. 2D) quadriangular, the anterior margin roundly emarginate at middle.

Pronotal lateral sides (Fig. 1A) evenly convergent on basal five-sixths, thence strongly convergent to apices. Apical angles round. Marginal stria complete, its outer edge lightly carinate. Disk smooth medially and densely covered with large, deep and oblong punctures along lateral sides, the punctation on the lateral area expanded medio-anteriorly; the punctures becoming finer and sparser medially and anteriorly; basal area of disk with two or three rows of coarse punctures; elsewhere finely and sparsely punctate, the punctures

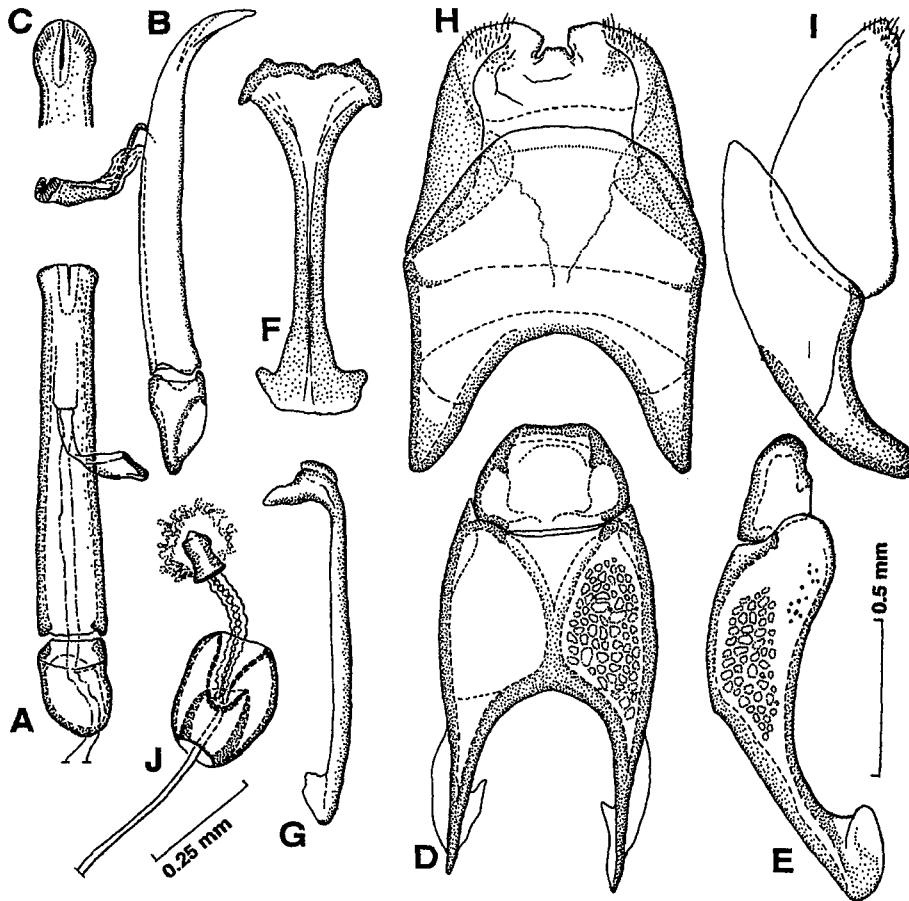


Fig. 3. *Saprinus optabilis*. Male and female genitalia. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Apex of aedeagus, dorsal view. D: Ninth and tenth tergites, dorsal view. E: Ditto, lateral view. F: Ninth sternum (spicule), ventral view. G: Ditto, lateral view. H: Eighth tergite and sternum, dorsal view. I: Ditto, lateral view. J: Spermatheca and spermathecal gland. [A–I: MO-99002 (Shiztou, Puli); J: MO-99029 (Shiztou, Puli)].

separated by about four to ten times their diameter; area behind eyes strongly depressed.

Epipleura of elytra (Fig. 1B) feebly convex; surface between epipleural and elytral marginal striae covered sparsely with fine and oblong punctures; inside elytral marginal stria sparsely covered with fine punctures that are separated by four times their diameter. Marginal epipleural stria complete, its ventral side subcariniform. Marginal elytral stria complete, its apical end extending along the posterior margin of elytron and united with the apical end of sutural stria; its dorsal side strongly carinate. External subhumeral stria confined to basal area. Internal subhumeral stria absent. Oblique humeral stria well impressed and present on basal third. First to third dorsal striae densely crenate with coarse punctures, strongly impressed and present on basal third; second a little longer than the first; first a little longer than the third. Fourth dorsal stria present on basal half, its basal end united with

Table 1. Biometric data of *Saprinus optabilis*.

	Male	Female
APW	1.08–1.37 (1.25± 0.03) 12	1.08–1.47 (1.35± 0.03) 12
PPW	2.74–3.38 (3.10± 0.07) 12	2.79–3.68 (3.41± 0.07) 12
PL	1.37–1.91 (1.69± 0.05) 12	1.47–2.01 (1.86± 0.05) 12
EL	1.96–2.50 (2.29± 0.05) 12	2.06–2.74 (2.52± 0.06) 12
EW	2.94–3.77 (3.39± 0.08) 12	3.09–4.07 (3.75± 0.08) 12
ProW	2.19–2.95 (2.67± 0.05) 12	2.62–3.24 (2.96± 0.04) 12
ProL	0.34–0.58 (0.46± 0.02) 12	0.44–0.64 (0.54± 0.01) 12
PyL	1.23–1.62 (1.46± 0.04) 12	1.47–1.86 (1.70± 0.04) 12
PTL	1.03–1.62 (1.28± 0.04) 12	1.27–1.47 (1.38± 0.02) 12
MSTL	0.98–1.47 (1.31± 0.04) 12	1.13–1.47 (1.36± 0.03) 12
MTTL	1.27–1.66 (1.46± 0.03) 12	1.23–1.72 (1.57± 0.04) 11

sutural stria as an arc. Fifth dorsal stria absent. Sutural stria complete, deeply impressed and densely crenate. Surface of elytra densely covered with large, round, and deep punctures that are separated by their own to three times their diameter, except on flanks, mediobasal half, and extreme apex (outside apical stria); elsewhere sparsely and finely punctate, the punctures separated by three to five times their diameter; interval among the large punctures intermingled with fine punctures; area between first and second dorsal striae densely with oblique rugae.

Propygidium (Fig. 1D) short; disk densely covered with coarse and shallow punctures that are separated by one-third to their own diameter; on the basal half the punctures becoming finer. Pygidium (Fig. 1D) rather sparsely covered with large, round and shallow punctures that are about twice their diameter and becoming finer apically; lateral margin feebly elevated; usually with narrow, median longitudinal line on apical half which is impunctate. Interspace among the punctures of propygidium and pygidium with altaceous ground sculptures.

Anterior margin of median portion of prosternum (Fig. 2B) nearly straight and shortly marginate on median third. Ventral disk of keel depressed at apical third and slightly convex on basal two-thirds; its disk finely covered with punctures that are separated by about three times their diameter. Anterior marginal stria of keel strongly impressed and complete, and its outer side strongly carinate. Carinal striae divergent posteriorly and anteriorly and nearly parallel on apical third; outer edge of stria distinctly carinate. Descending lateral stria complete and its outer edge strongly elevated, its apical end attaining to apical third of keel.

Anterior margin of mesosternum (Fig. 2B) slightly emarginate medially; marginal stria interrupted medially and its outer side well carinate. Disk sparsely covered with coarse punctures that are separated by twice to five times their diameter. Meso-metasternal suture distinctly impressed, complete and sparsely and coarsely crenate. Intercoxal disk of metasternum (Fig. 2A) feebly convex, but strongly depressed along longitudinal sutural line in male, while feebly depressed in female; median area sparsely covered with fine punctures that are separated by five to eight times their diameter; lateral area along the

lateral stria sparsely covered with coarse, round and deep punctures, and with other fine ones intermingled; similarly punctate in an apical transverse band, the punctures becoming sparser and finer on median third; interspace among punctures on lateral area and apical transverse band with finely impressed, alutaceous micro-sculpture. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly, and present on basal two-thirds. Lateral metasternal disk densely covered with large, round, deep punctures that are separated by half to three times their diameter, and with fine ones intermingled. Metepisternum densely covered with large, deep, and longitudinal punctures, and with fine punctures intermingled; interspace among these punctures smooth and shining.

Intercostal disk of 1st abdominal sternum covered with coarse punctures along antero-lateral margins, which become sparser and finer medially; lateral stria abbreviated at apical sixth and its outer edge subcariniform.

Protibia (Fig. 1E) with 10 to 12 spinules on outer margin, the apical two and basal one small. Meso- (Fig. 1F) and metatibia with 11 spinules on outer margin.

Male genitalia as shown in Fig. 3A-I; eighth sternite densely with short setae; ratio in length of parameres to basal piece about 4.0.

Female genitalia as shown in Fig. 3J; spermatheca globoid with a deep invagination at each pole.

Specimens examined. [Proper] Nantou Hsien: Nanshanchi, Puli (4 exs., 12, 13, 14, 15/iv/1986), M. Ôhara; Ditto (1 ex., 6/vi; 22 exs., 9/vi; 1 ex., 17/vi; 8 exs., viii/1972), Q. Du & K. Masumoto; Ditto (1 ex., 30/v/1973), Q. Du; Shizuto, Puli (15 exs., 31/x/1987), K. Lah. Chiai Hsien: Abassen, Takesaki (= Chuchi) (2 exs., 1/viii/38) (NSMT); Ditto (4 exs., 1/viii/1938), Y. Yano. Kaohsiung Hsien: Liukuei (1 ex., 10/vii/1990), S. Osawa; Ditto (1 ex., 3-7/v/1986), M. Ôhara. Pintung Hsien: Kenting National Park (1 ex., 11/xi/1976), M. Kiuchi; Kuraru (= Kueitzuchiaio), (1 ex., 28/xii/1925), T. Kano (Kano collection, NSMT).

Distribution. Taiwan; India; Southern China; Indochina; Nepal; New Guinea.

Remarks. *S. optabilis* commonly found under dead carcasses in Taiwan.

Saprinus quadriguttatus (Fabricius, 1798)

Hister quadriguttatus Fabricius, 1798: 39 [Angola].

Hister lateralis Illiger, 1807: 36 (nom. nud.), synonymized by Erichson, 1834: 176.

Saprinus quadriguttatus: Erichson, 1834: 176; Lewis, 1915: 56 [Rokkiri]; Miwa, 1931: 51 [Rokkiri]; Mazur, 1997: 227.

Saprinus quadriguttata var. *lateralis*: Desbordes, 1919: 416.

Specimens examined. No material of this species has been available for my study.

Distribution. Taiwan (?); Afghanistan; Pakistan; India; Bangla-Desh; Sumatra; Indochina.

Remarks. This species can easily be distinguished by other members of the family Histeridae in Taiwan by the yellow maculae on elytron.

Saprinus semistriatus (Scriba, 1790)

Hister semistriatus Scriba, 1790: 72 [Germany].

Hister nitidulus Fabricius, 1801: 85.

Saprinus nitiduls: Lewis, 1915: 56 [Taihoku], synonymized by Hoffmann, 1803: 125.

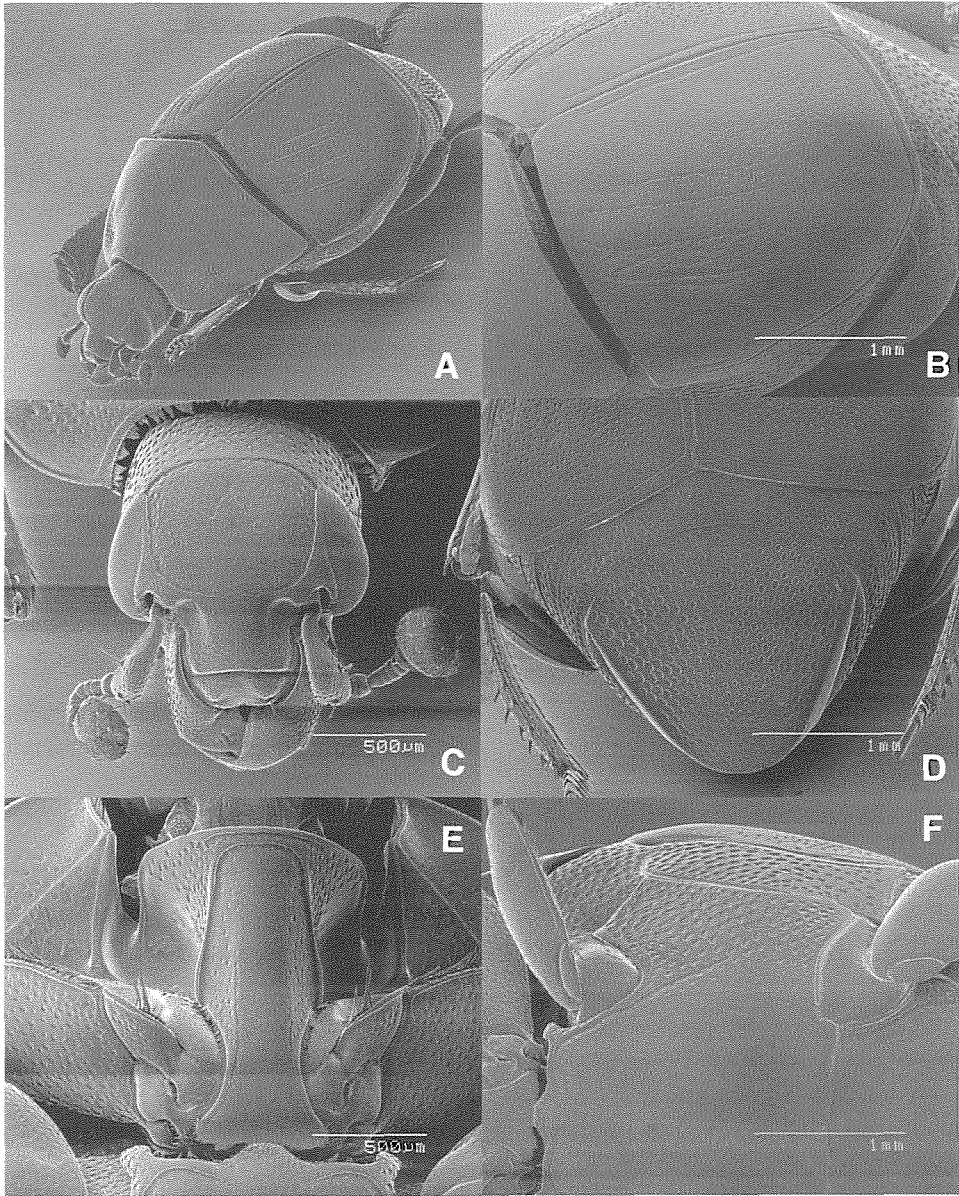


Fig. 4. *Saprinus splendens*. A: Adult, oblique view. B: Left elytron, dorsal view. C: Head, fronal view. D: Pygidium, caudal view. E: Prosternum, ventral view. F: Meso- and metasterna, ventral view. [A–D: male, MO-03095 (Nanshanchi, Puli); E–F: male, MO-03094 (Nanshanchi, Puli)].

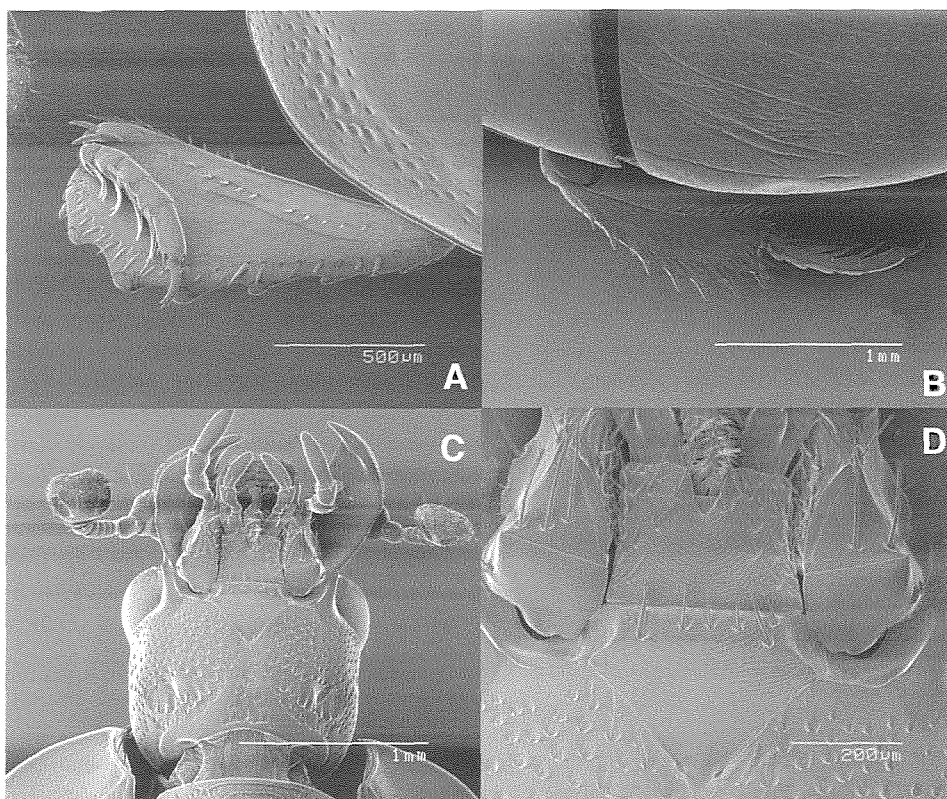


Fig. 5. *Saprinus splendens*. A: Left protibia, ventral view. B: Mesotibia, ventral view. C: Head, ventral view. D: Mentum and submentum, ventral view. [A–B: male, MO-03095 (Nanshanchi, Puli); D: male, MO-03094 (Nanshanchi, Puli)].

Saprinus semistriatus: Miwa, 1931: 51 [Taihoku].

See more detail checklist in Mazur (1997: 228).

Notes. This species distributes in northern part of Palearctic Region and Egypt. The species recorded by Lewis (1915) may refer to allied species, e.g., *semipunctatus*, *niponicus* or *planiusculus*. In this study, unfortunately, no material for these species from Taiwan has been available.

Saprinus (Saprinus) splendens (Paykull, 1811)
(Figs. 4 – 6)

Hister splendens Paykull, 1811: 53 [RSA: Capland].

Hister speciosus Dejean, 1821: 48 (nom. nud.).

Saprinus speciosus Erichson, 1834: 179; Bickhardt, 1913: 177 [Pilam]; Lewis, 1915: 56 [Taihoku]; Miwa, 1931: 51 [Taihoku], synonymized by Dahlgren, 1967: 214.

Saprinus (Saprinus) splendens: Ôhara, 1994: 236 [redescription]; Mazur, 1997: 229; Hayashi,

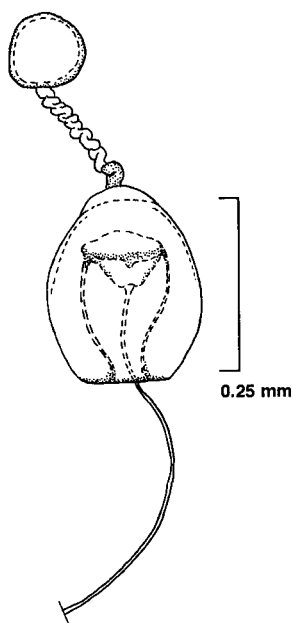


Fig. 6. *Saprinus splendens*. Spermatheca. [MO-03096 (Nanshanchi, Puli)] .

1986: pl. 11 [Larvae].

See more detail checklist in Mazur (1997: 229).

Additional description (see also Ôhara, 1994: 236). Mentum (Fig. 5D) quadriangular, the anterior margin deeply and caspidally emarginate at middle. Female genitalia, spermatheca as shown in Fig. 6.

Specimens examined. [Proper] Taipei Hsien: Pali Beach (16 exs., 16/viii/1987), K. Baba. Taichung Hsien: Lishan (1 ex., 25/viii/1989), Native collector. Nantou Hsien: Nanshanchi, Puli (19 exs., 9/vi; 7 exs., viii/1972), Q. Du & K. Masumoto; Chiaohsi (1 ex., 27/iv/1978), K. Masumoto. Kaohsiung Hsien: Liukuei (1 ex., 21/iv/1990) S. Osawa. Tainan Hsien: Chiali (2 exs., 12/ii/1998, collected by carcasses of fish), Y. Y. Lien. No detail locality: Formosa, T. Kano (1 ex., no date) (Kano collection, NSMT).

Distribution. Taiwan (proper); Japan; Oriental Region; tropical Africa; Arabia; Kashmir; Afganistan; Australia.

Remarks. This species resembles *Saprinus optabilis*, but differs in the striation of the elytra without basal portions of fifth dorsal and sutural striae and having the large punctation on lateral side of the pygidium.

KEY TO THE TAIWANESE SPECIES OF THE GENUS *SAPRINUS*

- 1 (2) Elytra with yellow maculae on lateral sides. *S. quadriguttatus* (Fabricius)
- 2 (1) Elytra without yellow maculae.
- 3 (4) Basal ends of fifth dorsal and sutural striae of elytron united with each other as an arc. Elytra light blue. Punctuation of pygidium evenly coarse.
..... *S. optabilis* Marseul
- 4 (3) Basal ends of fifth dorsal and sutural striae of elytron not united. Elytra dark blue. Pygidium covered with coarse punctures, the punctures become larger on lateral area.
..... *S. splendens* (Paykull)

Saprinus semistriatus is not included in the key because its record probably is erroneous.

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