

Supplement to the knowledge of the Agathidiini of Taiwan (Coleoptera, Leiodidae)

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Supplement to the knowledge of the Agathidiini of Taiwan (Coleoptera, Leiodidae). - New records and/or descriptions are given for 32 species of Agathidiini from Taiwan, collected by Dr. Ales Smetana.

New species are: *Agathidium* (A.) *subnitidum* n.sp., *Agathidium* (A.) *delicatulum* n.sp., *Agathidium* (A.) *alesi* n.sp., *Agathidium* (A.) *pictum* n.sp. New records for Taiwan are: *Cyrtoplastus seriepunctatus* (Bris.), *Agathidium* (*Neoceble*) *kyotoense* Ang. & Dmz, A. (*Neoceble*) *confusum* Bris., A. (A.) *mequignoni* Roubal.

Spermatheca is figured for the first time of: *Agathidium* (A.) *honestum* Ang. & Dmz., A. (A.) *meifengense* Ang. & Dmz., A. (A.) *egregium* Ang. & Dmz.

Key-words: Leiodidae - Agathidiini - Taiwan - new species - new records.

INTRODUCTION

This new contribution increases the number of the species of Agathidiini known from Taiwan to 60. It is based on the study of 32 species in 430 specimens of *Cyrtoplastus* and *Agathidium*, collected in 18 localities by Dr. Ales Smetana, and includes:

(a) the descriptions of 4 new species: *Agathidium* (A.) *subnitidum* n.sp., *Agathidium* (A.) *delicatulum* n.sp., *Agathidium* (A.) *alesi* n.sp., *Agathidium* (A.) *pictum* n.sp.;

(b) 4 new records for Taiwan: *Cyrtoplastus seriepunctatus* (Bris.), *Agathidium* (*Neoceble*) *kyotoense* Ang. & Dmz, A. (*Neoceble*) *confusum* Bris., A. (A.) *mequignoni* Roubal;

(c) some female characters of 3 species known previously only from male specimens.

The specimens are deposited in Geneva Museum (MHNG), Taichung Museum (NMNT) and F. Angelini's private collection (AC).

We are indebted to Dr. Ales Smetana (Ottawa) for the opportunity of studying his very interesting material and to Dr. Ivan Löbl for comments on the manuscript of this paper.

Cyrtoplastus Reitter, 1884

Cyrtoplastus smetanai Ang. & Dmz.

Cyrtoplastus smetanai Angelini & De Marzo, 1995: 184.

MATERIAL: Taiwan, Taichung Hsien, Anmashan, 2230 m, 12.V.92, 1 ♂ and 3 ♀ (MHNG, NMNT, AC).

Discussion: These specimens agree in all characters with the types. Body length: 2.3-2.5 mm.

Distribution: Taiwan.

Cyrtoplastus seriepunctatus (Brisout)

Agathidium seriepunctatus Brisout in Grenier, 1867: 174.

Cyrtoplastus seriepunctatus, GANGLBAUER 1899: 239; ANGELINI & DE MARZO 1988: 65; HOSHINA 1996: 204.

MATERIAL: Taiwan, Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, 1 ex. (AC).

Discussion: This specimen differs from the European material in the shape of the aedeagal apex, in dorsal view.

Distribution: Europe, Siberia, Mongolia, Japan, Taiwan. New record for Taiwan.

Agathidium Panzer, 1797

Subg. **Cyphocele** Thomson, 1859

Agathidium (Cyphocele) yushanicum Ang. & Dmz.

Agathidium (Cyphocele) yushanicum Angelini & De Marzo, 1995: 186.

MATERIAL: Taiwan, Nantou Hsien, Nenkaoshan, 1.5 Km SW Tenchi Hut, 2830 m, 6.V.92, 2 exx. (MHNG, AC).

Distribution: Taiwan.

Agathidium (Cyphocele) geniculatum Ang. & Dmz.

Agathidium (Cyphocele) geniculatum Angelini & De Marzo, 1995: 191.

MATERIAL: Taiwan, Kaohsiung Hsien, Kuanshan, trail above Kaunshanchi Riv., 2550 m, 21.IV.92, 1 ♂ and 1 ♀ (AC); Taichung Hsien, Anmashan, 2225 m, 11.V.92, 1 ♀ (NMNT); Taichung Hsien, Anmashan, 2230 m, 12.V.92, 1 ♂ and 1 ♀ (MHNG); Kaohsiung Hsien, Kuanshan, trail at Kaunshanchi Riv., 2400 m, 20.VII.93, 1 ♂ (MHNG).

Distribution: Taiwan.

Subg. **Neocele** Gozis, 1886

nigripenne group

Agathidium (Neocele) kyotoense Ang. & Dmz.

Agathidium (Neocele) kyotoense Angelini & De Marzo, 1988: 79; ANGELINI 1995: 136.

MATERIAL: Taiwan, Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, 1 ♂ (AC); Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.93, 1 ♂ (MHNG); Nantou Hsien, Meifeng, 2130 m, 10.VII.93, 1 ♀ (NMNT).

Discussion: These specimens agree with the types from Japan in all characters, except one which has the dorsum black.

Distribution: Japan (Honshu), Taiwan. New record for Taiwan.

Agathidium (Neoceble) nigrocastaneum Ang. & Dmz.

Agathidium (Neoceble) nigrocastaneum Angelini & De Marzo, 1995: 192.

MATERIAL: Taiwan, Taichung Hsien, Anmashan, 2230 m, 12.V.92, 1 ♂ and 2 ♀ (MHNG); Taichung Hsien, Anmashan, 2120 m, 13.V.92, 1 ♂ and 1 ♀ (AC); Taichung Hsien, Anmashan, 2225 m, 14.V.92, 1 ex. (NMNT).

Discussion: These specimens agree fully with the types. Body length: 2.5-2.7 mm.

Distribution: Taiwan.

Agathidium (Neoceble) confusum Brisout

Agathidium (Neoceble) confusum Brisout in GRENIER 1863: 9; HLISNIKOVSKY 1964: 90; ANGELINI 1995: 179.

MATERIAL: Taiwan, Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.93, 1 ♀ (MHNG); Kaohsiung Hsien, Peinantashan trail, 1950 m, 8.VII.93, 1 ♀ (AC).

Discussion: These specimens agree in all characters with European material.

Distribution: Europe, Caucasus, Siberia, Mongolia, Japan, Taiwan. New record for Taiwan.

canariense group

Agathidium (Neoceble) rufomarginatum Ang. & Dmz.

Agathidium (Neoceble) rufomarginatum Angelini & De Marzo, 1995: 197.

MATERIAL: Taiwan, Pingtung Hsien, Peitawhushan, trail at 1500 m, 1.V.92, 5 ♂ (MHNG, NMNT); Taichung Hsien, Anmashan, 2225 m, 11.V.92, 1 ♂ (MHNG); Taichung Hsien, Anmashan, creek, 2185 m, 12.V.92, 1 ♀ (MHNG); Taichung Hsien, Anmashan, 2120 m, 13.V.92, 1 ♂ (MHNG); Nantou Hsien, Meifeng, 2130 m, 10.VII.93, 2 ♂ and 2 ♀ (MHNG, AC).

Discussion: *Agathidium rufomarginatum* Ang. & Dmz. was described on the basis of 1 male and 1 female. The additional specimens agree with the types in all characters. Body length: 2.1-2.5 mm.

Distribution: Taiwan.

Subg. **Macroceble** Angelini, 1992

Agathidium (Macroceble) oblitum Ang. & Dmz.

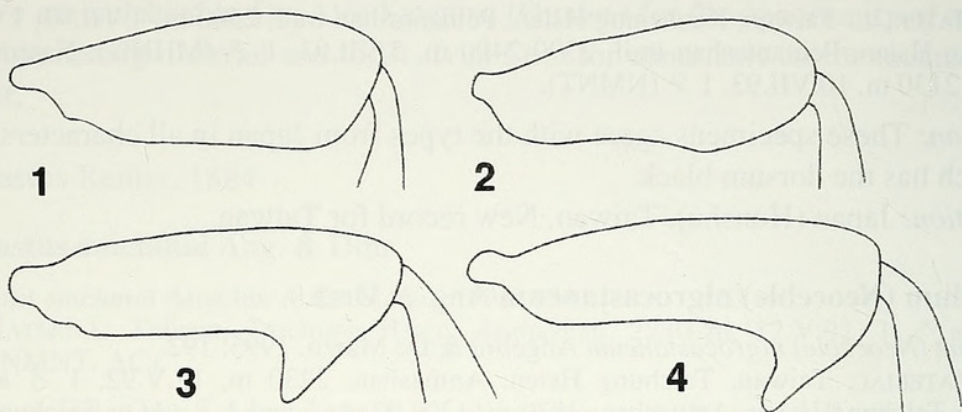
Agathidium (Macroceble) oblitum Angelini & De Marzo, 1995: 198.

MATERIAL: Taiwan, Taichung Hsien, Anmashan, 2225 m, 11.V.92, 2 ♀ (MHNG, AC).

Distribution: Taiwan.

Subg. **Agathidium** Panzer, 1797

madurensis group



FIGS 1-4

Male metafemora of: 1, *Agathidium subnitidum* n.sp.; 2, *A. delicatulum* n.sp.; 3, *A. alesi* n.sp.; 4, *A. pictum* n.sp.

***Agathidium (Agathidium) subnitidum* n.sp.**

Figs 1, 5-7, 17

Length 3.3-3.5 mm (holotype ♂: 3.4 mm). Dorsum either black or dark reddish-brown; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation almost absent: traceable on pronotum and elytra; puncturation fine and sparse on entire dorsum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins distinctly raised; clypeus deeply emarginate; clypeal line absent; eyes flattened. Antennal segment 3 1.8 times as long as 2 and as long as 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Microreticulation absent; punctures very small, superficial, hardly distinct, separated from each other by 1-10 times their diameter.

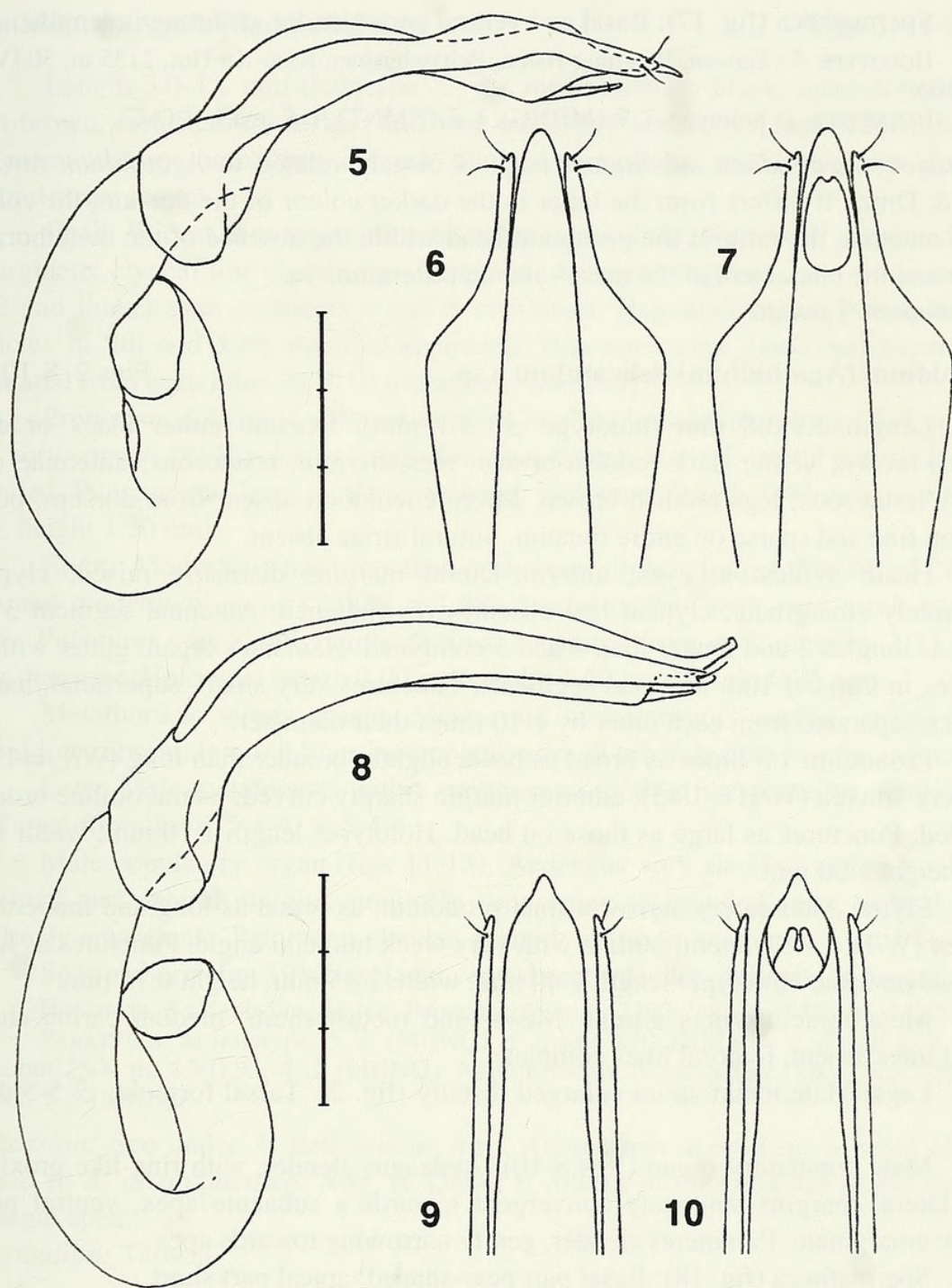
Pronotum: 1.3 times as broad as head, slightly broader than long ($W/L = 1.33$) and very convex ($W/H = 1.31$); anterior margin sharply curved; lateral outline broadly rounded. Microreticulation almost absent: only traceable; punctures as large as those on head but sparser, separated from each other by 2-15 times their diameter. Holotype: length 1.20 mm, width 1.60 mm, height 1.22 mm.

Elytra: Slightly narrower than pronotum, as broad as long and moderately convex ($W/H = 1.8$); lateral outline with very weak humeral angle. Microreticulation almost absent, only traceable; punctures as large as those on head, separated from each other by 5-15 times their diameter. Holotype: length 1.45 mm, width 1.50 mm, height 0.83 mm.

Metathoracic wings absent. Meso- and metasternum: median carina absent, lateral lines absent, femoral lines complete.

Legs: Male metafemora enlarged distally (fig. 1). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 5-7): Aedeagus stout, with ring-like proximal part, lateral margins gently convergent towards a rounded apex, ventral piece shallowly emarginate. Parameres sinuate, broadened apically.



FIGS 5-10

Male copulatory organ (lateral view, dorsal and ventral view of apex) of: 5-7, *Agathidium subnitidum* n.sp.; 8-10, *A. delicatulum* n.sp. Scale: 1 division = 0.1 mm.

Spermatheca (fig. 17): Basal and ventral parts slender, differing in length.

HOLOTYPE ♂: Taiwan, Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2135 m, 30.IV.92 (MHNG).

PARATYPES: as holotype, 1 ♀ (MHNG), 1 ♂ (NMNT), 1 ♂ and 1 ♀ (AC).

Discussion: *Agathidium subnitidum* n.sp. is closely related to *Agathidium tardum* Ang. & Dmz.; it differs from the latter in the darker colour of the dorsum, the colour of the antenna, the ratio of the pronotum/head width, the absence of the metathoracic wings and the characters of the meso- and metasternum.

Distribution: Taiwan.

***Agathidium (Agathidium) delicatulum* n.sp.**

Figs 2, 8-10, 18

Length 2.9-3.8 mm (holotype ♂: 3.1 mm). Dorsum either black or dark reddish-brown; venter dark reddish-brown, mesosternum testaceous; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent from dorsum; puncturation fine and sparse on entire dorsum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins distinctly raised; clypeus moderately emarginate; clypeal line absent; eyes flattened. Antennal segment 3 1.5 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Punctures very small, superficial, hardly distinct, separated from each other by 1-10 times their diameter.

Pronotum: 1.3 times as broad as head, slightly broader than long ($W/L = 1.31$) and very convex ($W/H = 1.45$); anterior margin sharply curved; lateral outline broadly rounded. Punctures as large as those on head. Holotype: length 1.10 mm, width 1.45 mm, height 1.00 mm.

Elytra: Moderately narrower than pronotum, as broad as long and moderately convex ($W/H = 1.8$); lateral outline with very weak humeral angle. Punctures as large as those on head. Holotype: length 1.40 mm, width 1.35 mm, height 0.75 mm.

Metathoracic wings absent. Meso- and metasternum: median carina sharp, lateral lines absent, femoral lines complete.

Legs: Male metafemora enlarged distally (fig. 2). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 8-10): Aedeagus slender, with ring-like proximal part, lateral margins sinuously convergent towards a subacute apex, ventral piece deeply emarginate. Parameres slender, gently narrowing towards apex.

Spermatheca (fig. 18): Basal part pear-shaped; apical part short.

HOLOTYPE ♂: Taiwan, Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93 (MHNG).

PARATYPES: as holotype, 1 ♂ and 1 ♀ (MHNG), 1 ♂ and 1 ♀ (AC); same but 2390-2490 m, 5.VII.93, 1 ♂ and 3 ♀ (MHNG), 1 ♂ and 1 ♀ (NMNT), 1 ♂ and 1 ♀ (AC); Kaohsiung Hsien, Kuanshan, trail above Kaunshanchi Riv., 2550 m, 22.VII.93, 1 ♂ and 3 ♀ (MHNG).

Discussion: *Agathidium delicatulum* n.sp. is closely related to *Agathidium alesi* n.sp. and *A. distinguendum* Ang. & Dmz.; it differs from them in the shape of the male metafemora and ratio of the 3rd/2nd antennal segments. The three species can be distinguished by the male copulatory organ.

Distribution: Taiwan.

Agathidium (Agathidium) alesi n.sp.

Figs 3, 11-13, 19

Length 3.0-4.1 mm (holotype ♂: 4.1 mm). Dorsum black, mesosternum reddish-brown, metasternum darker; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent from dorsum; punctures small and sparse on entire dorsum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins distinctly raised; clypeus deeply emarginate; clypeal line absent; eyes flattened. Antennal segment 3 1.3 times as long as 2 and longer than segments 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Punctures very small and superficial, separated from each other by 2-10 times their diameter.

Pronotum: 1.4 times as broad as head, slightly broader than long ($W/L = 1.25$) and very convex ($W/H = 1.45$); anterior margin sharply curved; lateral outline broadly rounded. Punctures as large as those on head. Holotype: length 1.40 mm, width 1.75 mm, height 1.20 mm.

Elytra: Moderately narrower than pronotum, slightly longer than broad ($W/L = 0.8$) and moderately convex ($W/H = 1.68$); lateral outline with very weak humeral angle. Punctures very small, hardly distinct, separated from each other by 2-15 times their diameter. Holotype: length 2.00 mm, width 1.60 mm, height 0.95 mm.

Metathoracic wings absent. Meso- and metasternum: median carina sharp, lateral lines absent, femoral lines incomplete; a small tubercle between the metacoxae.

Legs: Male metafemora with a pronounced tooth at the posterior margin (fig. 3). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 11-13): Aedeagus very slender, with a hook-like proximal part, lateral margins sinuously converging to rounded apex, ventral piece shallowly emarginate. Parameres slender, abruptly reflexed near apex.

Spermatheca (fig. 19): Basal and ventral parts slender, differing in length.

HOLOTYPE ♂: Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.93 (MHNG).

PARATYPES: as holotype, 5 ♀ (MHNG), 1 ♂ and 1 ♀ (NMNT), 3 ♂ and 2 ♀ (AC); same but 2500 m, 4.VII.93, 4 ♂ (MHNG); Nantou Hsien, Nenkaoshan Tenchi Hut, 2895 m, 7.V.92, 1 ♂ (MHNG).

Discussion: See under *A. delicatulum* n.sp. *Agathidium alesi* n.sp. is most closely related to *A. distinguendum* Ang. & Dmz.; it differs in the pronotal shape and the aedeagal apex.

Distribution: Taiwan.

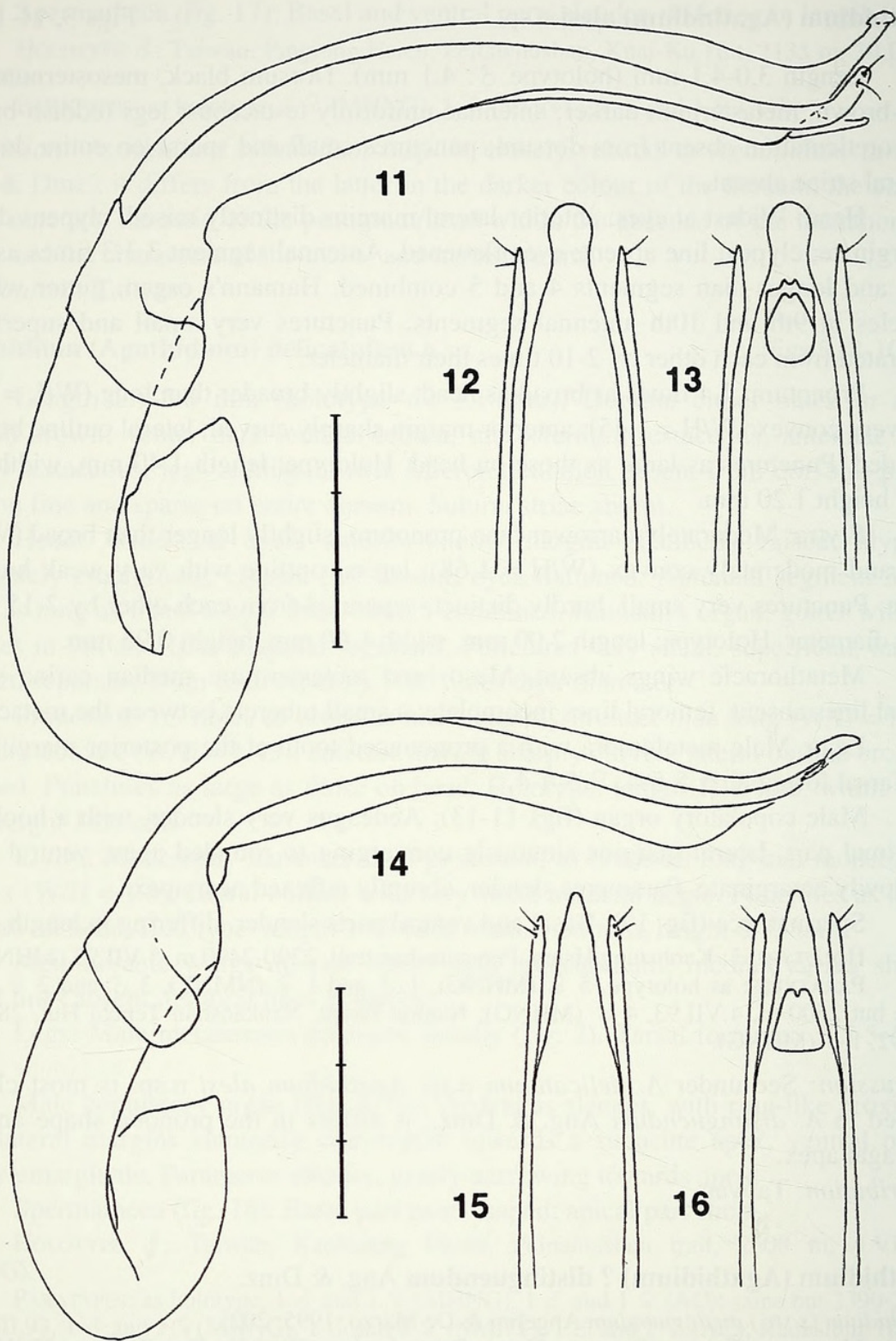
Agathidium (Agathidium) ? distinguendum Ang. & Dmz.

Agathidium (s.str.) *distinguendum* Angelini & De Marzo, 1995: 202.

MATERIAL: Taiwan, Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2125 m, 27.IV.92, 1 ♀ (MHNG).

Discussion: Our identification of this female is reported as doubtful because of the difficulties in distinguishing the species of the madurensis group without examination of the male copulatory organ.

Distribution: Taiwan.



FIGS 11-16

Male copulatory organ (lateral view, dorsal and ventral view of apex) of: 11-13, *Agathidium alesi* n.sp.; 14-16, *A. pictum* n.sp. Scale: 1 division = 0.1 mm.

Agathidium (Agathidium) familiare Ang. & Dmz.

Agathidium (s.str.) familiare Angelini & De Marzo, 1995: 203.

MATERIAL: Taiwan, Kaohsiung Hsien, Kuanshan, trail at Kaunshanchi Riv., 2650 m, 21.IV.92, 1 ♂ and 2 ♀ (MHNG); Taichung Hsien, Anmashan, 2225 m, 11.V.92, 1 ♂ (MHNG); Taichung Hsien, Anmashan, 2230 m, 12.V.92, 2 ♂ and 1 ♀ (MHNG, AC); Taichung Hsien, Anmashan, 2225 m, 14.V.92, 1 ♂ and 1 ♀ (MHNG); Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, 3 ♂ and 4 ♀ (MHNG, AC); Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.93, 3 ♂ and 8 ♀ (MHNG, NMNT); Kaohsiung Hsien, Kuanshan, trail at Kaunshanchi Riv., 2400 m, 20.VII.93, 1 ♂ and 2 ♀ (MHNG, AC).

Distribution: Taiwan.

seminulum group**Agathidium (Agathidium) mequignoni** Roubal

Agathidium (s.str.) mequignoni Roubal, 1911: 49; HLISNIKOVSKY 1964: 221; ANGELIN 1995: 278.

MATERIAL: Taiwan, Taichung Hsien, Anmashan, 2150 m, 13.V.92, 1 ♂ (AC).

Discussion: This specimen agrees in all characters with the type material from Caucasus.

Distribution: Caucasus, Turkey, North Iran, Kirgizstan, Siberia, Korea, Taiwan. New record for Taiwan.

laevigatum group**Agathidium (Agathidium) honestum** Ang. & Dmz.

Fig. 20

Agathidium (s.str.) honestum Angelini & De Marzo, 1995: 208.

MATERIAL: Taiwan, Kaohsiung Hsien, Kuanshan, Kunanoshing Hut, 3020 m, 18.IV.92, 1 ♂ (MHNG); Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2130 m, 27.IV.92, 2 ♂ and 2 ♀ (MHNG, NMNT); Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2125 m, 27.IV.92, 3 ♂ and 4 ♀ (MHNG, NMNT, AC); Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2135 m, 30.IV.92, 3 ♂ and 1 ♀ (MHNG, AC); Kaohsiung Hsien, Peinantashan trail, ridge at 2800 m, 3.VII.93, 1 ♂ (AC); Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, 1 ♂ (MHNG); Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.93, 2 ♂ (AC).

Discussion: *Agathidium honestum* Ang. & Dmz. was described on the basis of 3 males. The additional specimens agree in all characters with the types. Female tarsal formula: 5-4-4. Spermatheca as in fig. 20. Body length: 2.6-2.9 mm.

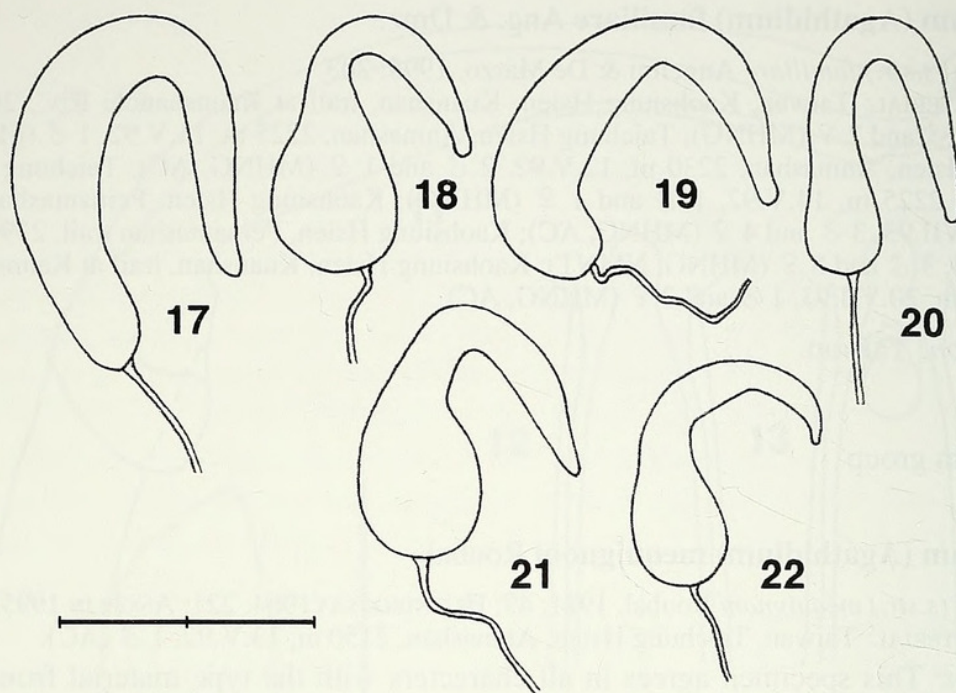
Distribution: Taiwan.

Agathidium (Agathidium) lucidum Ang. & Dmz.

Agathidium (s.str.) lucidum Angelini & De Marzo, 1995: 208.

MATERIAL: Taiwan, Nantou Hsien, Nenkaoshan trail, Yuenhal Hut, 2350 m, 4.V.92, 1 ♂ and 2 ♀ (MHNG); Nantou Hsien, Nenkaoshan Tenchi Hut, 2900 m, 5.V.92, 3 ♂ and 1 ♀ (MHNG); Nantou Hsien, Nenkaoshan, 2.5 Km SW Tenchi Hut, 2720 m, 6.V.92, 11 ♂ and 6 ♀ (MHNG, NMNT, AC); Ilan Hsien, Taipingshan, 1950 m, 13.VII.93, 1 ♂ (MHNG).

Distribution: Taiwan.



FIGS 17-22

Spermatheca of: 17, *Agathidium subnitidum* n.sp.; 18, *A. delicatulum* n.sp.; 19, *A. alesi* n.sp.; 20, *A. honestum* Ang. & Dmz.; 21, *A. meifengense* Ang. & Dmz.; 22, *A. egregium* Ang. & Dmz. Scale: 1 division = 0.1 mm.

***Agathidium (Agathidium) tenebroides* Ang. & Dmz.**

Agathidium (s.str.) tenebroides Angelini & De Marzo, 1995: 210.

MATERIAL: Taiwan, Kaohsiung Hsien, Kuanshan, Kuananoshing Hut, 3020 m, 18.IV.92, 1 ♂ (MHNG); Kaohsiung Hsien, Kuanshan, trail at Kaunshanchi Riv., 2400 m, 20.IV.92, 2 ♂ and 1 ♀ (MHNG); Kaohsiung Hsien, Kuanshan, trail at Kaunshanchi Riv., 2650 m, 21.IV.92, 4 ♂ and 10 ♀ (MHNG, NMNT, AC); Kaohsiung Hsien, Kuanshan, trail above Kaunshanchi Riv., 2550 m, 21.IV.92, 1 ♂ (MHNG); Kaohsiung Hsien, Peinantashan trail, 2400 m, 4.VII.93, 1 ♂ (AC); Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, 2 ♂ and 3 ♀ (MHNG); Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.93, 9 ♂ and 6 ♀ (MHNG, NMNT, AC); Kaohsiung Hsien, Peinantashan trail, 2080 m, 6.VII.93, 1 ♂ and 1 ♀ (MHNG); Kaohsiung Hsien, Peinantashan trail, 2020 m, 7.VII.93, 2 ♂ (MHNG); Kaohsiung Hsien, Kuanshan, trail at Kaunshanchi Riv., 2400 m, 20.VII.93, 1 ♂ (MHNG); Kaohsiung Hsien, Kuanshan, trail above Kaunshanchi Riv., 2550 m, 22.VII.93, 3 ♂ (MHNG).

Distribution: Taiwan.

***Agathidium (Agathidium) meifengense* Ang. & Dmz.**

Fig. 21

Agathidium (s.str.) meifengense Angelini & De Marzo, 1995: 213.

MATERIAL: Taiwan, Taichung Hsien, Anmashan, creek, 2185 m, 12.V.92, 1 ♂ and 2 ♀ (MHNG, NMNT); Taichung Hsien, Anmashan, 2230 m, 12.V.92, 3 ♂ and 4 ♀ (MHNG, AC); Taichung Hsien, Anmashan, 2120 m, 13.V.92, 1 ♂ (MHNG).

Discussion: *Agathidium meifengense* Ang. & Dmz. was described on the basis of 4 males. Female tarsal formula: 5-4-4. Spermatheca as in fig. 21. These specimens agree in all characters with the types. Body length: 3.9-4.2 mm.

Distribution: Taiwan.

***Agathidium (Agathidium) kaohsiungense* Ang. & Dmz.**

Agathidium (s.str.) kaohsiungense Angelini & De Marzo, 1995: 217.

MATERIAL: Taiwan, Kaohsiung Hsien, Peinantashan trail, 2080 m, 6.VII.93, 2 ♂ and 2 ♀ (MHNG, AC); Kaohsiung Hsien, Kuanshan, trail above Kaunshanchi Riv., 2550 m, 22.VII.93, 2 ♂ and 2 ♀ (MHNG, NMNT, AC).

Distribution: Taiwan.

***Agathidium (Agathidium) fuliginosum* Ang. & Dmz.**

Agathidium (s.str.) fuliginosum Angelini & De Marzo, 1995: 221.

MATERIAL: Taiwan, Pingtung Hsien, Peitawhushan, ridge at 1288-2910 m, 28.IV.92, 4 ♂ (MHNG, NMNT, AC).

Discussion: *Agathidium fuliginosum* Ang. & Dmz. was described on the basis of 1 male. Female remains unknown. The additional specimens agree in all characters with the type. Body length: 3.4-3.7 mm.

Distribution: Taiwan.

***Agathidium (Agathidium) alpestre* Ang. & Dmz.**

Agathidium (s.str.) alpestre Angelini & De Marzo, 1995: 223.

MATERIAL: Taiwan, Nantou Hsien, Nenkaoshan, 2.5 Km SW Tenchi Hut, 2720 m, 6.V.92, 2 ♂ and 1 ♀ (MHNG, NMNT); Nantou Hsien, Nenkaoshan Tenchi Hut, 2895 m, 7.V.92, 1 ♂ and 1 ♀ (MHNG); Nantou Hsien, Nenkaoshan trail, 2050-2150 m, 8.V.92, 3 ♂ and 2 ♀ (MHNG, AC).

Discussion: Apart from some specimens being lighter coloured, this new material agrees in all characters with the types. Body length: 3.0-3.3 mm.

Distribution: Taiwan.

***Agathidium (Agathidium) comptum* Ang. & Dmz.**

Agathidium (s.str.) comptum Angelini & De Marzo, 1995: 227.

MATERIAL: Taiwan, Pingtung Hsien, Peitawhushan, trail at 1500 m, 1.V.92, 1 ♂ (MHNG). Further two specimens are doubtfully referred to the same species: Kaohsiung Hsien, Kuanshan, Kunanoshing Hut, 3020 m, 18.IV.92, 1 ♂ (AC); Kaohsiung Hsien, Kuanshan, trail above Kaunshanchi Riv., 2550 m, 21.IV.92, 1 ♂ (MHNG).

Discussion: The two doubtful specimens differ slightly from the types in the shape of the aedeagus.

Distribution: Taiwan.

***Agathidium (Agathidium) egregium* Ang. & Dmz.**

Fig. 22

Agathidium (s.str.) egregium Angelini & De Marzo, 1995: 228.

MATERIAL: Taiwan, Taichung Hsien, Anmashan, 2225 m, 11.V.92, 1 ♂ (MHNG); Taichung Hsien, Anmashan, creek, 2185 m, 12.V.92, 2 ♂ and 2 ♀ (MHNG, NMNT, AC);

Taichung Hsien, Anmashan, 2230 m, 12.V.92, 1 ♂ and 1 ♀ (AC); Taichung Hsien, Anmashan, 2225 m, 14.V.92, 1 ♂ (MHNG); Ilan Hsien, Taipingshan, 1950 m, 13.VII.93, 2 ♂ (MHNG).

Discussion: *Agathidium egregium* Ang. & Dmz. was described on the basis of 1 male. The additional specimens agree in all characters with the types, except for the colour of some of them, which are either darker or lighter dorsally. Female tarsal formula: 5-4-4. Spermatheca as in fig. 22. Body length: 2.3-2.6 mm.

Distribution: Taiwan.

***Agathidium (Agathidium) anmashanense* Ang. & Dmz.**

Agathidium (s.str.) anmashanense Angelini & De Marzo, 1995: 228.

MATERIAL: Taiwan, Nantou Hsien, Nenkaoshan trail, Yuenhal Hut, 2350 m, 4.V.92, 1 ♂ and 1 ♀ (MHNG); Nantou Hsien, Nenkaoshan Tenchi Hut, 2900 m, 5.V.92, 3 ♂ and 6 ♀ (MHNG, AC); Nantou Hsien, Nenkaoshan, 2.5 Km SW Tenchi Hut, 2720 m, 6.V.92, 8 ♂ and 5 ♀ (MHNG, AC); Nantou Hsien, Nenkaoshan, 1.5 Km SW Tenchi Hut, 2830 m, 6.V.92, 4 ♂ and 3 ♀ (MHNG, AC); Nantou Hsien, Nenkaoshan trail, 2050-2150 m, 8.V.92, 5 ♂ and 3 ♀ (MHNG, NMNT).

Distribution: Taiwan.

***Agathidium (Agathidium) subalpinum* Ang. & Dmz.**

Agathidium (s.str.) subalpinum Angelini & De Marzo, 1995: 230.

MATERIAL: Taiwan, Pingtung Hsien, Peitawhushan, trail at 1500 m, 1.V.92, 6 ♀ (MHNG, NMNT, AC).

Distribution: Taiwan.

***Agathidium (Agathidium) exoletum* Ang. & Dmz.**

Agathidium (s.str.) exoletum Angelini & De Marzo, 1995: 236.

MATERIAL: Taiwan, Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2130 m, 27.IV.92, 2 ♂ (MHNG); Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2125 m, 27.IV.92, 1 ♂ (MHNG); Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2135 m, 30.IV.92, 1 ♂ and 1 ♀ (MHNG); Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, 4 ♂ and 6 ♀ (MHNG, NMNT, AC).

Discussion: The additional specimens agree in all characters with the types, except for the lighter colour of some of them. Body length: 3.2-3.5 mm.

Distribution: Taiwan.

dentatum group

***Agathidium (Agathidium) pictum* n.sp.**

Figs 4, 14-16

Length 4.0 mm (holotype ♂ and paratype). Dorsum black, venter reddish-brown, meso- and metasternum lighter; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum; punctures very small on head and pronotum, absent from elytra. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins not raised; clypeus deeply emarginate; clypeal line absent; eyes flattened. Antennal segment 3 1.6 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th

and 10th antennal segments. Punctures very small and superficial, not very distinct, separated from each other by 4-6 times their diameter.

Pronotum: 1.3 times as broad as head, slightly broader than long ($W/L = 1.2$) and very convex ($W/H = 1.28$); anterior margin sharply curved; lateral outline broadly rounded. Punctures hardly distinct, separated from each other by 1-10 times their diameter. Holotype: length 1.50 mm, width 1.80 mm, height 1.40 mm.

Elytra: Moderately narrower than pronotum, as broad as long and moderately convex ($W/H = 1.7$); lateral outline with very weak humeral angle. Puncturation, except for few very small punctures, absent. Holotype: length 1.65 mm, width 1.70 mm, height 1.00 mm.

Metathoracic wings absent. Meso- and metasternum: median carina sharp, lateral lines absent, femoral lines incomplete; a small tubercle between metacoxae.

Legs: Male metafemora with a pronounced tooth at posterior margin (fig. 4). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 14-16): Aedeagus very slender, with hook-like proximal part, lateral margins converging to small subacute tip, ventral piece shallowly emarginate. Parameres slender, bent up at apex.

HOLOTYPE ♂: Taiwan, Taichung Hsien, Anmashan, 2225 m, 11.V.92 (MHNG).

PARATYPE: as holotype, 1 ♂ (AC).

Discussion: *A. pictum* n.sp. is closely related to *A. umbratum* Ang. & Dmz. and *A. fenestratum* Ang. & Dmz.; it differs in the shape of the male hind femora and the ratio of the 3rd/2nd antennal segments. The aedeagus is very similar in these species but the shape of the male hind femora is characteristic.

Distribution: Taiwan.

Agathidium (Agathidium) splendidulum Ang. & Dmz.

Agathidium (s.str.) *splendidulum* Angelini & De Marzo, 1995: 245.

MATERIAL: Taiwan, Kaohsiung Hsien, Kuanshan, trail at Kaunshanchi Riv., 2650 m, 21.IV.92, 8 ♂ and 12 ♀ (MHNG, NMNT, AC); Pingtung Hsien, Peitawhushan, Kuai-Ku Hut, 2130 m, 27.IV.92, 1 ♂ (MHNG); Pingtung Hsien, Peitawhushan, ridge at 1288-2910 m, 28.IV.92, 3 ♂ and 1 ♀ (MHNG); Pingtung Hsien, Peitawhushan, above Kuai-Ku Hut, 2680 m, 29.IV.92, 4 ♂ and 3 ♀ (MHNG); Nantou Hsien, Nenkaoshan Tenchi Hut, 2900 m, 5.V.92, 1 ♂ and 1 ♀ (MHNG); Nantou Hsien, Nenkaoshan, 2.5 Km SW Tenchi Hut, 2720 m, 6.V.92, 2 ♂ (MHNG); Taichung Hsien, Anmashan, 2230 m, 12.V.92, 1 ♂ (MHNG); Taichung Hsien, Anmashan, 2225 m, 14.V.92, 1 ♂ (MHNG); Kaohsiung Hsien, Peinantashan trail, 2400 m, 4.VII.93, 3 ♂ and 2 ♀ (MHNG); Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, 7 ♂ and 10 ♀ (MHNG, AC); Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.93, 13 ♂ and 14 ♀ (MHNG, NMNT, AC); Nantou Hsien, Meifeng, 2130 m, 10.VII.93, 1 ♂ (MHNG); Kaohsiung Hsien, Kuanshan, trail at Kaunshanchi Riv., 2400 m, 20.VII.93, 1 ♂ (MHNG); Kaohsiung Hsien, Kuanshan, trail above Kaunshanchi Riv., 2550 m, 22.VII.93, 8 ♂ and 2 ♀ (MHNG, NMNT, AC).

Discussion: *Agathidium splendidulum* Ang. & Dmz. was described on the basis of 4 males. The additional specimens are variable in puncturation and colour. Body length: 3.5-3.9 mm.

Distribution: Taiwan.

Agathidium (Agathidium) melanocephalum Ang. & Dmz.

Agathidium (s.str.) *melanocephalum* Angelini & De Marzo, 1995: 246.

MATERIAL: Taiwan, Nantou Hsien, Nenkaoshan trail, 2050-2150 m, 8.V.92, 7 ♂ and 12 ♀ (MHNG, NMNT, AC).

Distribution: Taiwan.

Subg. **Microceble** Ang. & Dmz., 1986

grouvellei group

Agathidium (Microceble) klapperichi Ang. & Dmz.

Agathidium (Microceble) klapperichi Angelini & De Marzo, 1984 (1985): 41 (s.str.); 1986: 454; 1995: 248.

MATERIAL: Taiwan, Taichung Hsien, Anmashan, 2230 m, 12.V.92, 1 ♂ (MHNG).

Distribution: Taiwan.

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