

Agathidiini from Taiwan collected by Dr. Ales Smetana (Coleoptera, Leiodidae, Agathidiini)

Fernando ANGELINI* & Luigi DE MARZO**

*S.S. 7 per Latiano, Km 0,500,

I-72021 Francavilla Fontana (Brindisi), Italy

**Dipartimento di Biologia, Difesa e Biotecnologie agro-forestali,

Università della Basilicata, Via Nazario Sauro 85, I-85100 Potenza, Italy.

Agathidiini from Taiwan collected by Dr. Ales Smetana (Coleoptera, Leiodidae, Agathidiini). - Descriptions and/or field data are presented for 49 species of *Agathidiini* from Taiwan based on 392 specimens collected in 1990 and 1991 by Dr. Ales Smetana.

New species: *Anisotoma smetanai* n.sp., *Cyrtoplastus smetanai* n.sp., *Agathidium yushanicum* n.sp., *A. inquisitor* n.sp., *A. geniculatum* n.sp., *A. praeustum* n.sp., *A. nigrocastaneum* n.sp., *A. tarokoense* n.sp., *A. vestitum* n.sp., *A. rufomarginatum* n.sp., *A. oblitum* n.sp., *A. tardum* n.sp., *A. distinguendum* n.sp., *A. familiare* n.sp., *A. glabricolle* n.sp., *A. honestum* n.sp., *A. lucidum* n.sp., *A. tenebroides* n.sp., *A. discretum* n.sp., *A. meifengense* n.sp., *A. tessellatum* n.sp., *A. memnonium* n.sp., *A. kaohsiungense* n.sp., *A. chalconotum* n.sp., *A. angustatum* n.sp., *A. fuliginosum* n.sp., *A. alpestre* n.sp., *A. furcatum* n.sp., *A. comptum* n.sp., *A. egregium* n.sp., *A. anmas-hanense* n.sp., *A. subalpinum* n.sp., *A. intricatum* n.sp., *A. inustum* n.sp., *A. taichungense* n.sp., *A. exoletum* n.sp., *A. fuscum* n.sp., *A. lunatum* n.sp., *A. umbratum* n.sp., *A. fenestratum* n.sp., *A. asphaltinum* n.sp., *A. splendidum* n.sp., *A. melanocephalum* n.sp., *A. chiaicum* n.sp., *A. amictum* n.sp., *A. venustum* n.sp.

New generic record from the Oriental region: *Cyrtoplastus*.

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

INTRODUCTION

The present paper describes the material of *Agathidiini* collected by Dr. Ales Smetana in 1990 (14.IV-12.V) and 1991 (7.V-23.V) in 40 different localities of Taiwan. Forty-nine species are treated, 46 of which are new to science. Among these, the following species are particularly remarkable for the Oriental region:



- one new species of *Anisotoma*, as only another species of this genus was known;
- one new species of *Cyrtoplastus*, as no species of this genus was known;
- three new species of *Agathidium* subg. *Cyphoceble*, as only another species of this subgenus was known.

Other reports include 5 species of *Agathidium* subg. *Neoceble*, rare in the Oriental region, and 3 out of 6 species already known for Taiwan.

The specimens are deposited in the Natural History Museum of Geneva (MHNG), National Museum of Natural Science in Taichung (NMNT) and Angelini's collection (AC).

We wish to express our sincerest thanks to Dr. Ales Smetana (Ottawa) for both the loan of this precious material and his generous assistance in editing the paper.

KEY TO THE AGATHIDIINI OF TAIWAN

- | | | |
|----|--|--------------------------------|
| 1 | Antennal club 5-segmented. Genus <i>Anisotoma</i> | <i>smetanai</i> n.sp. |
| 1' | Antennal club 4- or 3-segmented. | 2 |
| 2 | Antennal club 4-segmented. Genus <i>Afroagathidium</i> . . . | <i>orientale</i> Ang. & Dmz. |
| 2' | Antennal club 3-segmented. | 3 |
| 3 | Postocular carina absent. Genus <i>Liadopria</i> | <i>taiwanensis</i> Ang. & Dmz. |
| 3' | Postocular carina present. | 4 |
| 4 | Clypeus protuberant (fig. 9). Genus <i>Cyrtoplastus</i> | <i>smetanai</i> n.sp. |
| 4' | Clypeus not protuberant. Genus <i>Agathidium</i> | 5 |
| 5 | Elytra with sharp humeral angle. Metasternum without femoral lines. | 6 |
| 6 | Head with temples 1/2 length of eye (fig. 14). Subg. <i>Cyphoceble</i> | 7 |
| 7 | Body length: 4,5-5,1 mm. | <i>yushanicum</i> n.sp. |
| 7' | Body length: 2,5-3,4 mm. | 8 |

MAP 1

Localities in Taiwan - 1, Taoyuan Hsien, Takuanshan Forest, 1650 m, 17.IV.1990; 2, Taichung Hsien, Hsuehshan, near Hsuehshan Tun-Feng, 3170 m, 7.V.1991; above Shan-Liu Gieu Hut, 3220 m, 7-8.V.1991; near Hsuehshan Tun-Feng, 3170 m, 11.V.1991; 3, Anmashan, 2225 m, 1-4.V.1990; 4, Wufeng, 100-200 m, 14-15.IV.1990; 5, Nantou Hsien, Houhuanshan, 3100 m, 20.IV.1990; 6, Meifeng, 2130 m, 3, 12-13.V.1991; 7, Fengnan, 700 m, 22.IV.1990; 8, San-liu-chiu (Shanlinchi), 1650 m, 16.IV.1990; 9, Yushan, SW slope below Yushan Mn. peak, 3650-3720 m, 14-15.V.1991; Pai-Yun Hut, 3528 m, 15.V.1991; 2 Km W Pai-Yun Hut, 3350 m, 16.V.1991; 1,8 Km W Pai-Yun Hut, 3375 m, 17.V.1991; 10, Chiai Hsien, Yushan N. P., Ta-Ta Ghia, 2750 m, 27.IV.1990; Mun-Li Cliff, 1700-2700 m, 27.IV.1990, 13.V.1991 and 18.V.1991; Taroko N.P., Nanhushi Hut, 2220 m, 8.V.1990; Chungyantienshi river, 2280 m, 10.V.1990; ridge SE Nanhushi Hut, 2700 m, 11.V.1990; Nanhushi Hut, 2220 m, 12.V.1990; 11, Alishan, Sister Ponds, 2180 m, 26.IV.1990; 12, Kaohsiung Hsien, Tienchih (Tengchih), 1535-1800 m, 23-24.IV.1990; 13, Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2325 m, 21.V.1991; above Kuai-Ku Hut, 2325 m, 22.V.1991; trail at 2000 m, 23.V.1991.

- 8 Body length: 3,4 mm; 3rd antennal segment 2,4 times as long as 2nd; head and pronotum black, elytra reddish-brown; two sizes of punctures on head and pronotum. *inquisitor* n.sp.
- 8' Body length: 2,5-2,8 mm. *geniculatum* n.sp.
- 6' Head without temples, widest either at eyes or at posterior margin of eyes (figs 31-34). Subg. *Neoceble*. 9
- 9 Body length: 3,3 mm. *praeustum* n.sp.
- 9' Body length: 2,1-2,8 mm. 10
- 10 Third antennal segment 1,5 times as long as 2nd. *nigrocastaneum* n.sp.
- 10' Third antennal segment 0,7-1,0 times as long as 2nd. 11
- 11 Entire dorsum black and microreticulate; 3rd antennal segment 0,7 times as long as 2nd. *tarokoense* n.sp.
- 11' Dorsum with microreticulation absent or vague: dorsum reddish-brown; 3rd antennal segment as long as 2nd. 12
- 12 Antennae uniformly testaceous; female tarsal formula: 5-4-4; head widest at eyes (fig. 33). *vestitum* n.sp.
- 12' Antennae darker at club; female tarsal formula: 4-4-4; head widest at posterior margin of eyes (fig. 34). *rufomarginatum* n.sp.
- 5' Elytra with weak humeral angle. Metasternum either with femoral lines or greatly abbreviated and without distinct femoral lines. 13
- 13 Metasternum greatly abbreviated: femoral lines indistinct. Subg. *Macroceble*. *oblitum* n.sp.
- 13' Metasternum not greatly abbreviated: femoral lines distinct. 14
- 14 Eyes flattened or moderately protuberant; clypeal line either typical (= semicircular, more or less impressed line) or absent; pronotum 1,3-1,7 times as wide as head. Subg. *Agathidium* s.str. 15
- 15 Antero-lateral margins of head raised. Group: *madurensis*. 16
- 16 Third antennal segment 1,8 times as long as 2nd. *tardum* n.sp.
- 16' Third antennal segment 1,1-1,3 times as long as 2nd. 17
- 17 Entire dorsum black; antennae uniformly testaceous; male hind femora with a sharp tooth. *distinguendum* n.sp.
- 17' Entire dorsum reddish-brown; antennae darker at segments 7-10; male hind femora without tooth. 18
- 18 Third antennal segment 1,3 times as long as 2nd; pronotum not markedly broader than long ($W/L = 1,35$); metathoracic wings present; lateral lines of mesosternum incomplete. *formosum* Ang. & Dmz.
- 18' Third antennal segment as long as 2nd; pronotum moderately broader than long ($W/L = 1,51$); metathoracic wings absent; lateral lines of mesosternum absent. *familiare* n.sp.
- 15' Antero-lateral margins of head not raised. 19
- 19 Sutural striae present. Dorsum microreticulate. Group: *seminulum*. *glabricolle* n.sp.
- 19' Sutural striae absent. 20
- 20 Dorsum microreticulate. Group: *laevigatum*. 21

- 21 Third antennal segment 0,9-1,0 times as long as 2nd. 22
- 22 Dorsum reddish-brown, male hind femora with very sharp tooth (fig. 95); mesosternum with a raised median carina. *honestum* n.sp.
- 22' Dorsum black; male hind femora without tooth; mesosternum without median carina. 23
- 23 Eyes protuberant (fig. 66); proximal part of aedeagus simple (fig. 78). *lucidum* n.sp.
- 23' Eyes flattened (fig. 67); proximal part of aedeagus hook-like (fig. 104). *tenebroides* n.sp.
- 21' Third antennal segment 1,1-1,8 times as long as 2nd. 24
- 24 Third antennal segment 1,8 times as long as 2nd. Male copulatory organ: figs 107-109. *discretum* n.sp.
- 24' Third antennal segment 1,1-1,7 times as long as 2nd. 25
- 25 Body length: 4,1 mm. *meifengense* n.sp.
- 25' Body length: 2,5-3,6 mm. 26
- 26 Male hind femora simple. 27
- 27 Body length: 2,9-3,2 mm; 3rd antennal segment 1,4 times as long as 2nd; pronotum moderately broader than long ($W/L = 1,36$); eyes flattened (fig. 68). *tessellatum* n.sp.
- 27' Body length: 3,3-3,5 mm; 3rd antennal segment 1,3 times as long as 2nd; pronotum not markedly broader than long ($W/L = 1,27$); eyes protuberant (fig. 70). *memnonium* n.sp.
- 26' Male hind femora either with a sharp tooth or enlarged distally. 28
- 28 Male hind femora enlarged distally, without a true tooth. 29
- 29 Body length: 3,0-3,1 mm. Entire dorsum black; eyes protuberant (fig. 121); 3rd antennal segment 1,2 times as long as 2nd. *kaohsiungense* n.sp.
- 29' Body length: 2,8 mm. Entire dorsum reddish-brown; eyes protuberant (fig. 122); 3rd antennal segment 1,5 times as long as 2nd. ... *chalconotum* n.sp.
- 28' Male hind femora with a more or less sharp tooth. 30
- 30 Male hind femora with a small subdistal tooth (figs 127-132). 31
- 31 Male hind femora with a hook-like tooth (figs 127-128). 32
- 32 Eyes moderately protuberant (fig. 123); median carina of mesosternum raised; entire dorsum dark reddish-brown; body length: 2,9-3,4 mm. *angustatum* n.sp.
- 32' Eyes more protuberant (fig. 124); median carina of mesosternum weak; entire dorsum black; body length 3,5 mm. *fuliginosum* n.sp.
- 31' Male hind femora with an usual tooth (fig. 129-132). 33
- 33 Body length 3,0-3,2 mm; entire dorsum black. *alpestre* n.sp.
- 33' Body length 2,5-2,8 mm; entire dorsum reddish-brown. 34
- 34 Parameres with a preapical enlargement (fig. 160). *furcatum* n.sp.
- 34' Parameres evenly narrowing toward apex. 35
- 35 Male copulatory organ as in figs 163-165. *comptum* n.sp.
- 35' Male copulatory organ as in figs 166-168. *egregium* n.sp.

- 30' Male hind femora with a very large tooth (figs 133-138). 36
- 36 Median carina of mesosternum absent. *anmashanense* n.sp.
- 36' Median carina of mesosternum present. 37
- 37 Pronotum moderately broader than long ($W/L = 1,18-1,21$), markedly bent at anterior margin (figs 175-176). 38
- 38 Eyes moderately convex (fig. 125); male copulatory organ: figs 172-174; male tarsi much more enlarged than those of females. . . *subalpinum* n.sp.
- 38' Eyes more convex (fig. 126); male copulatory organ: figs 201-203; male tarsi moderately more enlarged than those of females. . . *intricatum* n.sp.
- 37' Pronotum sharply broader than long ($W/L = 1,27-1,46$), moderately bent at anterior margin (figs 177-178). 39
- 39 Body length 2,7-3,0 mm; 3rd antennal segment 1,6 times as long as 2nd. *inustum* n.sp.
- 39' Body length 3,3-3,6 mm; 3rd antennal segment 1,1-1,3 times as long as 2nd. . 40
- 40 Pronotum moderately broader than long ($W/L = 1,29$); its lateral outline as in fig. 177; elytra broader than long ($W/L = 0,87$). *taichungense* n.sp.
- 40' Pronotum sharply broader than long ($W/L = 1,46$); its lateral outline as in fig. 178; elytra as broad as long. *exoletum* n.sp.
- 20' Dorsum not microreticulate. Group: *dentatum*. 41
- 41 Body length 4,0-4,2 mm. 42
- 42 Male hind femora with a small subdistal tooth (figs 193-194); 3rd antennal segment 1,6-1,8 times as long as 2nd. 43
- 43 Third antennal segment 1,8 times as long as 2nd; pronotum vaguely broader than long ($W/L = 1,06$). *fuscum* n.sp.
- 43' Third antennal segment 1,6 times as long as 2nd; pronotum slightly broader than long ($W/L = 1,16$). *lunatum* n.sp.
- 42' Male hind femora with a sharp tooth (figs 195-200); 3rd antennal segment 1,4-1,5 times as long as 2nd. 44
- 44 Apex of aedeagus slightly bent up (fig. 223); elytra markedly broader than long ($W/L = 1,21$); eyes moderately protuberant (fig. 187). *umbratum* n.sp.
- 44' Apex of aedeagus sharply bent up (fig. 226); elytra as broad as long; eyes flattened (fig. 189). *fenestratum* n.sp.
- 41' Body length 3,0-3,9 mm. 45
- 45 Third antennal segment as long as 2nd. *asphaltinum* n.sp.
- 45' Third antennal segment 1,25-1,54 times as long as 2nd. 46
- 46 Male hind femora with very sharp tooth (fig. 198); 3rd antennal segment 1,54 times as long as 2nd; parameres with a sharp subapical enlargement (fig. 232). *splendidulum* n.sp.
- 46' Male hind femora with a comparatively small subdistal tooth (figs 199-200); 3rd antennal segment 1,27 times as long as 2nd; parameres without subapical enlargement. 47
- 47 Male copulatory organ as in figs 235-237; spermatheca as in fig. 244. *melanocephalum* n.sp.

- 47' Male copulatory organ as in figs 238-240; spermatheca as in fig. 245.
 *chiaicum* n.sp.
- 14' Eyes hemispherical (figs 247, 251); clypeal line atypical (= either a continuous or interrupted crest, or a couple of short grooves); pronotum 1,7-2,1 times as broad as head. Subg. *Microceble*. 48
- 48 Head at least partly striolate. 49
- 49 Head striolate only at clypeus; pronotum without microreticulation.
 *klapperichi* Ang. & Dmz.
- 49' Head striolate on entire surface; pronotum with superficial microreticulation. 50
- 50 Male copulatory organ: see Cooter, 1984. *puncticolle* Cooter
- 50' Male copulatory organ as in figs 254-256. *amictum* n.sp.
- 48' Head not striolate. 51
- 51 Male copulatory organ: see Angelini & De Marzo, 1985.
 *taiwanense* Ang. & Dmz.
- 51' Male copulatory organ as in figs 258-260. *venustum* n.sp.

Genus **Anisotoma** Panzer, 1797

Anisotoma smetanai n.sp.

Figs. 1-6

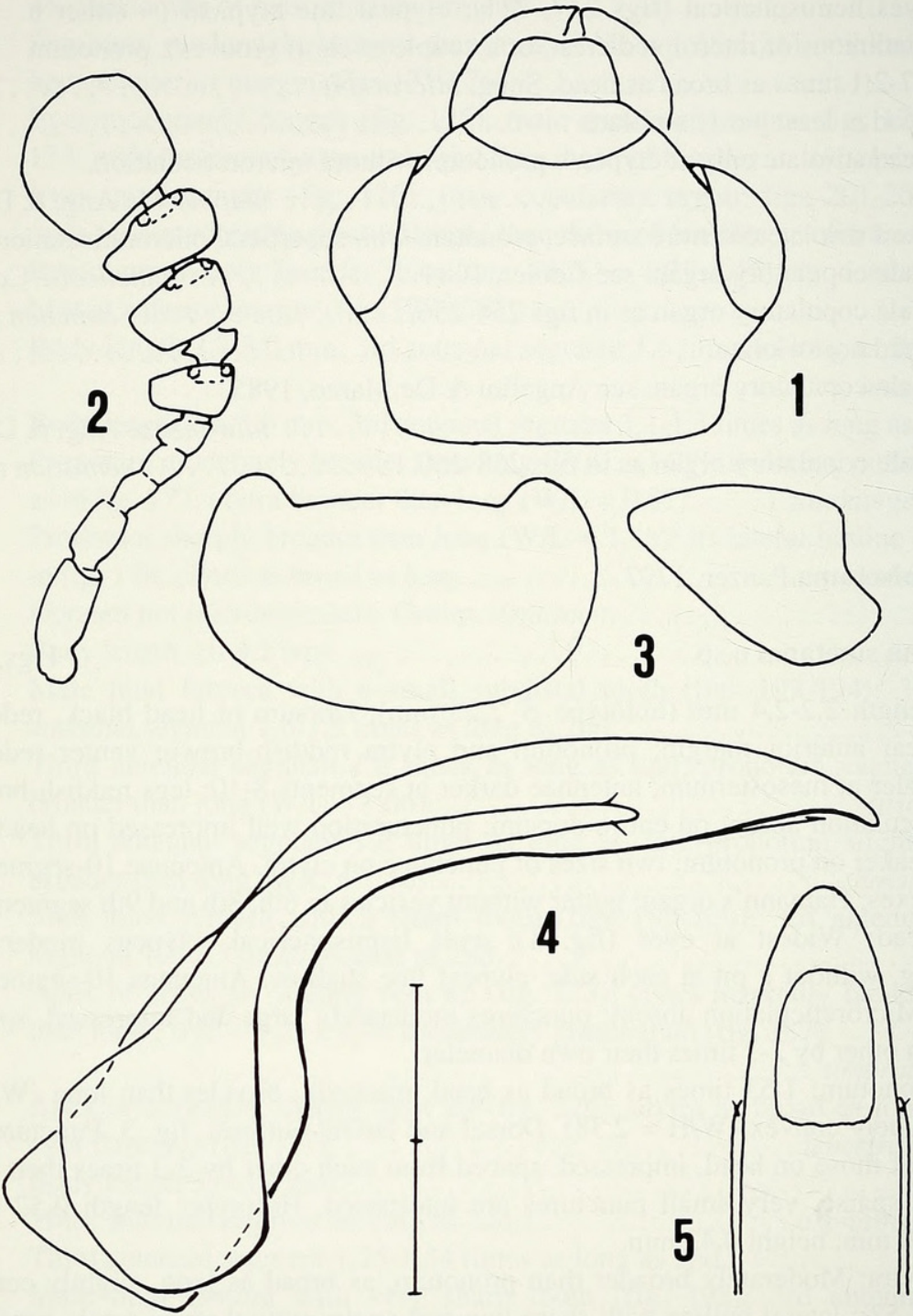
Length 2,2-2,4 mm (holotype ♂ 2,25 mm). Dorsum of head black, reddish-brown near anterior margin; pronotum and elytra reddish-brown; venter reddish-brown, paler at mesosternum; antennae darker at segments 8-10; legs reddish-brown. Microreticulation absent on entire dorsum; puncturation well impressed on head and elytra, weaker on pronotum; two sizes of punctures on elytra. Antennae 10-segmented in both sexes; Hamann's organ: gutter without vesicles in 6th, 8th and 9th segments.

Head: Widest at eyes (fig. 1); eyes hemispherical; clypeus moderately protruding, without a pit at each side; clypeal line shallow. Antennae 10-segmented (fig. 2). Microreticulation absent; punctures moderately large and impressed, spaced from each other by 2-3 times their own diameter.

Pronotum: 1,53 times as broad as head, markedly broader than long ($W/L = 1,92$), vaguely convex ($W/H = 2,38$). Dorsal and lateral outlines: fig. 3. Punctures of half size of those on head, impressed, spaced from each other by 2-3 times their own diameter; sparse, very small punctures are interposed. Holotype: length 0,52 mm, width 1,00 mm, height 0,42 mm.

Elytra: Moderately broader than pronotum, as broad as long, slightly convex ($W/H = 1,52$); lateral outline with sharp humeral angle; sutural striae weak, confined to apical half of elytra. Two sizes of punctures; punctures of larger size as large as those on head, spaced from each other by 0,5-2 times their own diameter; punctures of smaller size of nearly half diameter and sparser. Holotype: length 1,20 mm, width 1,22 mm, height 0,80 mm.

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



FIGS 1-5

Anisotoma smetanai n.sp.: head, antenna, pronotum (dorsal and lateral outline) and male copulatory organ (lateral view and ventral view of its apex). Scale: 1 division = 0,1 mm.

Legs: Tarsal formula: ♂ 4-4-4, ♀ 4-4-4; male tarsi not larger than those of females.

Male copulatory organ (figs 4-5): Aedeagus slender, with proximal part simple and apex bent down, lateral margins gently converging toward broadly rounded apex, ventral piece weakly sclerotized, not bifid. Parameres slender, short, gently narrowing toward apex.

Spermatheca (fig. 6): Both basal and apical parts stout, the former longer.

HOLOTYPE ♂: Hualien Hsien, Taroko N. P., Nanhushi Hut, 2220 m, 12.V.1990, in MHNG.

PARATYPE: Anmashan, 2225 m, 3.V.1990, 1 ♀, in AC.

Discussion: *Anisotoma smetanai* n.sp. easily differs from the two other species of this genus which occur in SE Asia, *A. martensi* Ang. & Dmz. (1994: 2, Nepal) and *A. loebli* Ang. & Dmz. (1986b: 828, Nepal) by its 10-segmented antennae; it differs from *A. loebli* in the dorsal coloration and from *A. martensi* in the size. The punctuation and the antennal club coloration are similar.

Habitats: Original broad-leaved forest, around bases of large trees. Original coniferous forest, rotting bark, wood and various debris near bases of large trees.

Distribution: Taiwan.

Etymology: dedicated to Dr. Ales Smetana, who found this species.

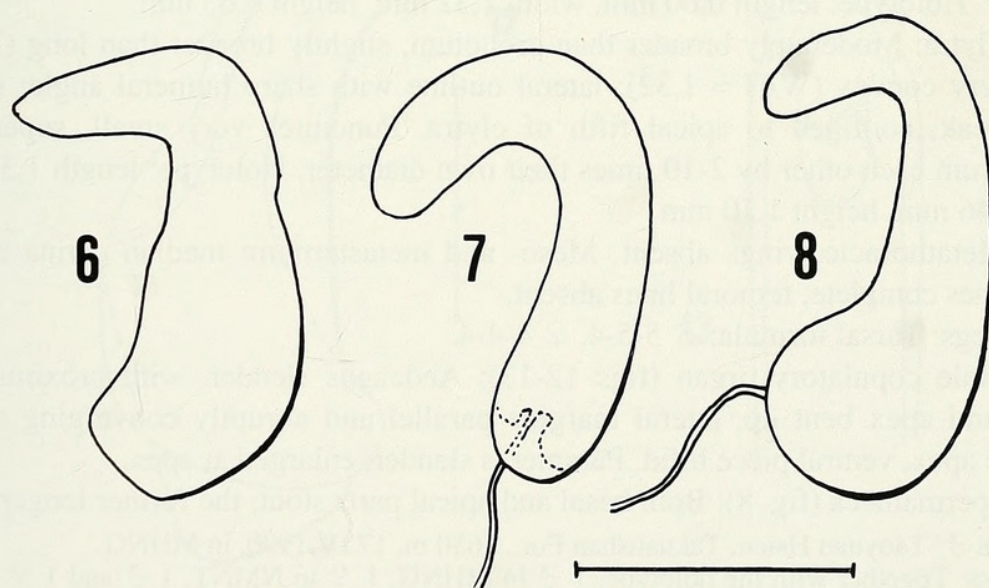
Genus **Liodopria** Reitter, 1909

Liodopria taiwanensis Ang. & Dmz.

Fig. 7

Liodopria taiwanensis Angelini & De Marzo, 1985, Entomologica, 19: 24.

Material: Nantou Hsien, Yushan N. P., SW slope below Yushan Mn. peak., 3650 m, 14.V.1991, 1 ♀ in MHNG.



FIGS 6-8

Spermatheca of: 6, *Anisotoma smetanai* n.sp.; 7, *Liodopria taiwanensis* Ang. & Dmz., 8, *Cyrtoplastus smetanai* n.sp. Scale: 1 division = 0,1 mm.

Discussion: The spermatheca of *Liodopria taiwanensis* Ang. & Dmz. (1985: 25; Taiwan) is figured here again, because its shape is appreciably different in the present specimen.

Habitat: Subalpine zone, moss, mouldy litter, humus and various debris under dense bushes of *Rhododendron*, with intermixed junipers.

Distribution: Taiwan.

Genus *Cyrtoplastus* Reitter, 1884

Cyrtoplastus smetanai n.sp.

Figs. 8-13

Length 2,4-2,7 mm (holotype ♂ 2,50 mm). Dorsum of head dark reddish-brown; pronotum and elytra reddish-brown; venter black, paler at mesosternum; antennae testaceous, darker at segments 9-10; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; two sizes of punctures on head; puncturation fine on pronotum, very sparse on elytra.

Head: Widest at the posterior margin of eyes (fig. 9); eyes hemispherical; clypeus protruding, without a pit at each side; clypeal line sharp. Antennae 10-segmented; 3rd antennal segment as long as 2nd, longer than 4th and 5th combined (fig. 10); Hamann's organ: gutter without vesicles in both 9th and 10th antennal segments. Punctures of the larger size impressed, spaced from each other by 1-2 times their own diameter; punctures of smaller size very sparse.

Pronotum: 1,73 times as broad as head, markedly broader than long ($W/L = 2,2$), little convex ($W/H = 2,25$). Dorsal and lateral outlines: fig. 11. Punctures as large as those on head, superficial, spaced from each other by 2-10 times their own diameter. Holotype: length 0,60 mm, width 1,32 mm, height 0,63 mm.

Elytra: Moderately broader than pronotum, slightly broader than long ($W/L = 1,08$), very convex ($W/H = 1,32$); lateral outline with sharp humeral angle; sutural striae weak, confined to apical fifth of elytra. Punctures very small, superficial, spaced from each other by 2-10 times their own diameter. Holotype: length 1,35 mm, width 1,46 mm, height 1,10 mm.

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

Legs: Tarsal formula: ♂ 5-5-4, ♀ 4-4-4.

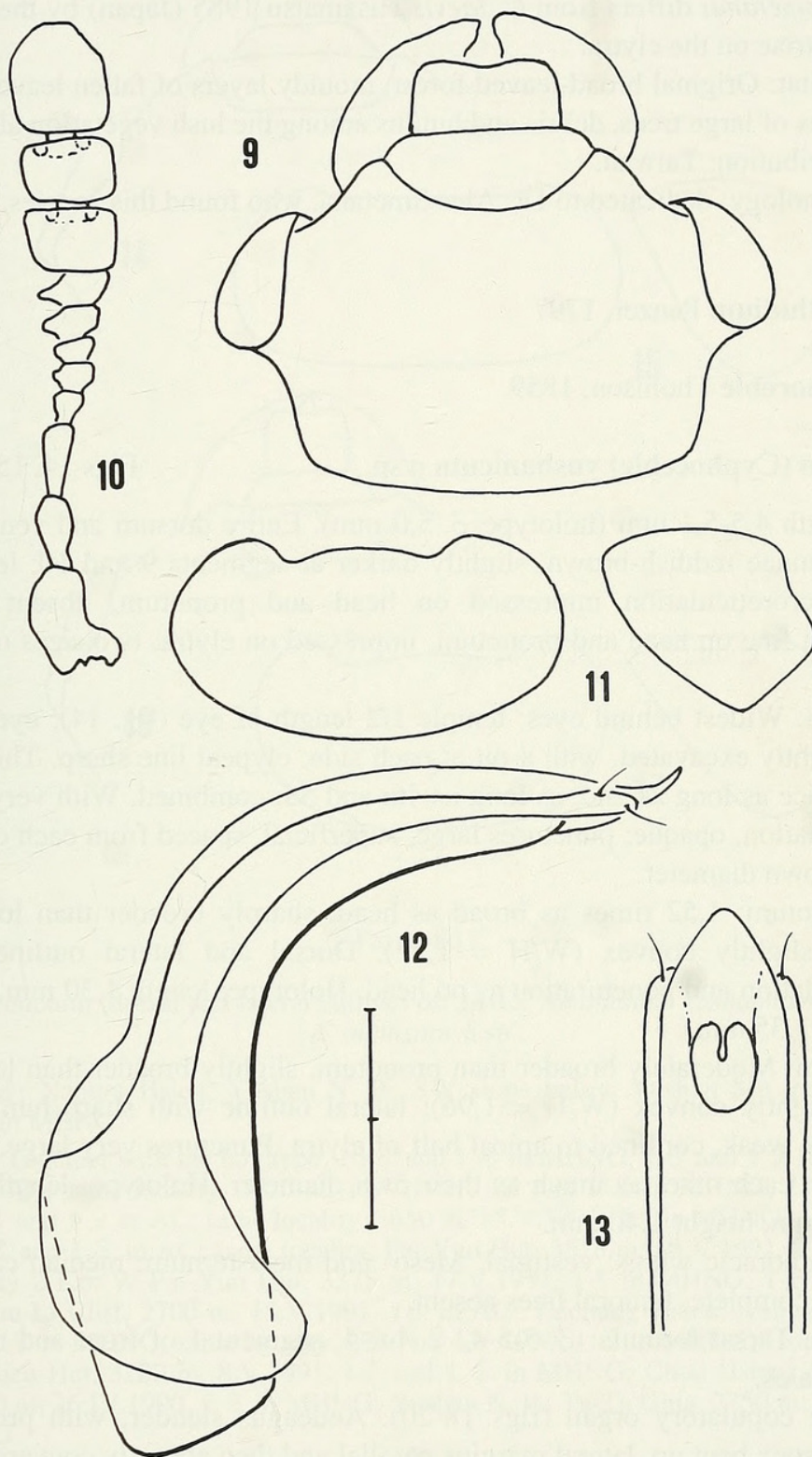
Male copulatory organ (figs 12-13): Aedeagus slender, with proximal part simple and apex bent up, lateral margins parallel and abruptly converging toward subacute apex, ventral piece bifid. Parameres slender, enlarged at apex.

Spermatheca (fig. 8): Both basal and apical parts stout; the former longer.

HOLOTYPE ♂: Taoyuan Hsien, Takuanshan For., 1650 m, 17.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 1 ♂ in MHNG, 1 ♀ in NMNT, 1 ♂ and 1 ♀ in AC; Taichung Hsien, Anmashan, 2225 m, 3.V.1990, 1 ♀ in MHNG.

Discussion: *Cyrtoplastus smetanai* n.sp. may be easily separated from the other Agathidiini of SE Asia by the generic characters (see key to species). If it is compared to *C. seriepunctatus* Bris., the elytral puncturation and size are clearly



FIGS 9-13

Cyrtoplastus smetanai n.sp.: head, antenna, pronotum (dorsal and lateral outline) and male copulatory organ (lateral view and ventral view of its apex). Scale: 1 division = 0,1 mm.

different in both species, although their male copulatory organs and spermathecae are similar. *C. smetanai* differs from *C. laevis* Hisamatsu 1985 (Japan) by the absence of punctured striae on the elytra.

Habitat: Original broad-leaved forest, mouldy layers of fallen leaves and twigs around bases of large trees, debris and humus among the lush vegetation along a trail.

Distribution: Taiwan.

Etymology: dedicated to Dr. Ales Smetana, who found this species.

Genus **Agathidium** Panzer, 1797

Subg. **Cyphocele** Thomson, 1859

Agathidium (Cyphocele) yushanicum n.sp.

Figs 14, 15, 18-20, 24

Length 4,5-5,1 mm (holotype ♂ 5,0 mm). Entire dorsum and venter reddish-brown; antennae reddish-brown, slightly darker at segments 9 and 10; legs reddish-brown. Microreticulation impressed on head and pronotum, absent on elytra; puncturation fine on head and pronotum, impressed on elytra; two sizes of punctures on the latter.

Head: Widest behind eyes: temple 1/2 length of eye (fig. 14); eyes flattened; clypeus slightly excavated, with a pit at each side; clypeal line sharp. Third antennal segment twice as long as 2nd, as long as 4th and 5th combined. With very impressed microreticulation, opaque; punctures large, superficial, spaced from each other by 1-2 times their own diameter.

Pronotum: 1,52 times as broad as head, sharply broader than long (W/L = 2,05) and slightly convex (W/H = 1,97). Dorsal and lateral outlines: fig. 15. Microreticulation and puncturation as on head. Holotype: length 1,30 mm, width 2,67 mm, height 1,35 mm.

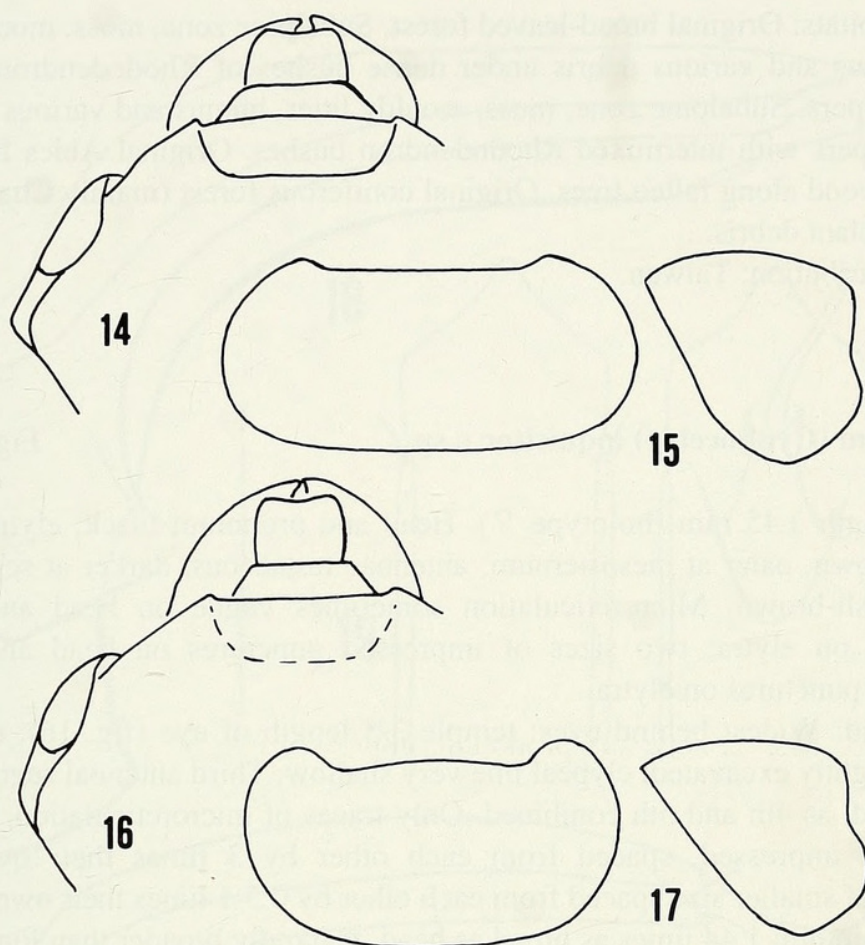
Elytra: Moderately broader than pronotum, slightly broader than long (W/L = 1,1) and slightly convex (W/H = 1,96); lateral outline with sharp humeral angle; sutural striae weak, confined to apical half of elytra. Punctures very large, impressed, spaced from each other as much as their own diameter. Holotype: length 2,50 mm, width 2,75 mm, height 1,40 mm.

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

Legs: Tarsal formula: ♂ 5-5-4, ♀ 4-4-4; segment 1 of front and middle tarsi dilated in males.

Male copulatory organ (figs 18-20): Aedeagus slender, with proximal part simple and apex bent up, lateral margins parallel and then abruptly converging toward subacute apex, ventral piece indistinct; short endophallic flagellum protruding. Parameres very slender, not enlarged at apex.

Spermatheca (fig. 24): Basal part elongate, twisted at duct connection; apical part stout, shorter.



FIGS 14-17

Head and pronotum (dorsal and lateral outline) of: 14-15, *Agathidium yushanicum* n.sp.; 16-17, *A. inquisitor* n.sp.

HOLOTYPE ♂: Nantou Hsien, Yushan N. P., SW slope below Yushan Mn. peak., 3650 m, 14.V.1991, in MHNG.

PARATYPES: Together with the holotype, 10 ♂ and 1 ♀ in MHNG, 1 ♂ and 1 ♀ in NMNT, 3 ♂ and 2 ♀ in AC; same locality, 3720 m, 15.V.1991, 4 ♂ and 1 ♀ in MHNG, 2 ♂ and 2 ♀ in NMNT, 3 ♂ and 1 ♀ in AC; same locality, 3650 m, 15.V.1991, 3 ♂ in MHNG, 1 ♂ and 1 ♀ in NMNT, 2 ♂ and 1 ♀ in AC; same locality, Pai-Yun Hut, 3528 m, 15.V.1991, 2 ♀ in MHNG; same locality 2 Km W Pai-Yun Hut, 3375 m, 17.V.1991, 1 ♂ in MHNG, 1 ♂ in AC; same locality, Mun-Li Cliff, 2700 m, 18.V.1991, 1 ♂ in AC; Taichung Hsien, Anmashan, 2225 m, 3.V.1990, 2 ♀ in MHNG; same locality, 2230 m, 4.V.1990, 1 ♂ in MHNG; Hsuehshan, above Shan-Liu Gieu Hut, 3200 m, 8.V.1991, 1 ♂ and 1 ♀ in MHNG; Chiai Hsien, Alishan, Sister Ponds, 2180 m, 26.IV.1990, 1 ♀ in MHNG; Yushan N. P., Ta-Ta Ghia, 2750 m, 27.IV.1990, 1 ♀ in MHNG.

Discussion: *Agathidium yushanicum* n.sp. differs from *A. inquisitor* n.sp. and *A. geniculatum* n.sp. by the size, the microreticulation, by the antennal coloration and by the deeper clypeal line; within the subg. *Cyphocele*, three Taiwanese species share the dorsal microreticulation, which is lacking in *A. glabrum* Ang. & Dmz. (1986b) from Nepal.

Habitats: Original broad-leaved forest. Subalpine zone, moss, mouldy layers of litter, humus and various debris under dense bushes of *Rhododendron*, with intermixed junipers. Subalpine zone, moss, mouldy litter, humus and various debris under dense junipers with intermixed *Rhododendron* bushes. Original *Abies* forest, rotting bark and wood along fallen trees. Original coniferous forest (mainly *Chamaecyparis*), moss and plant debris.

Distribution: Taiwan.

***Agathidium (Cyphocele) inquisitor* n.sp.**

Figs. 16, 17, 25

Length 3,45 mm (holotype ♀). Head and pronotum black, elytra and venter reddish-brown, paler at mesosternum; antennae testaceous, darker at segments 7-11; legs reddish-brown. Microreticulation sometimes vague on head and pronotum, superficial on elytra; two sizes of impressed punctures on head and pronotum, superficial punctures on elytra.

Head: Widest behind eyes: temple $\frac{3}{5}$ length of eye (fig. 16); eyes convex; clypeus slightly excavated; clypeal line very shallow. Third antennal segment twice as long as 2nd, as 4th and 5th combined. Only traces of microreticulation; punctures of larger size impressed, spaced from each other by 3 times their own diameter; punctures of smaller size spaced from each other by 0,5-1 times their own diameter.

Pronotum: 1,44 times as broad as head, markedly broader than long ($W/L = 2$), little convex ($W/H = 2,05$). Dorsal and lateral outlines: fig. 17. Traces of microreticulation on entire surface; puncturation sparser than at head; two sizes of punctures. Holotype: length 0,88 mm, width 1,76 mm, height 0,87 mm.

Elytra: Moderately broader than pronotum, slightly broader than long ($W/L = 1,07$), moderately convex ($W/H = 1,59$); lateral outline with sharp humeral angle; sutural striae impressed, extending beyond the apical half of elytra. Punctures large, superficial, spaced from each other by 1-2 times their own diameter. Holotype: length 0,88 mm, width 1,83 mm, height 1,15 mm.

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

Legs: Tarsal formula: ♂ not known, ♀ 4-4-4.

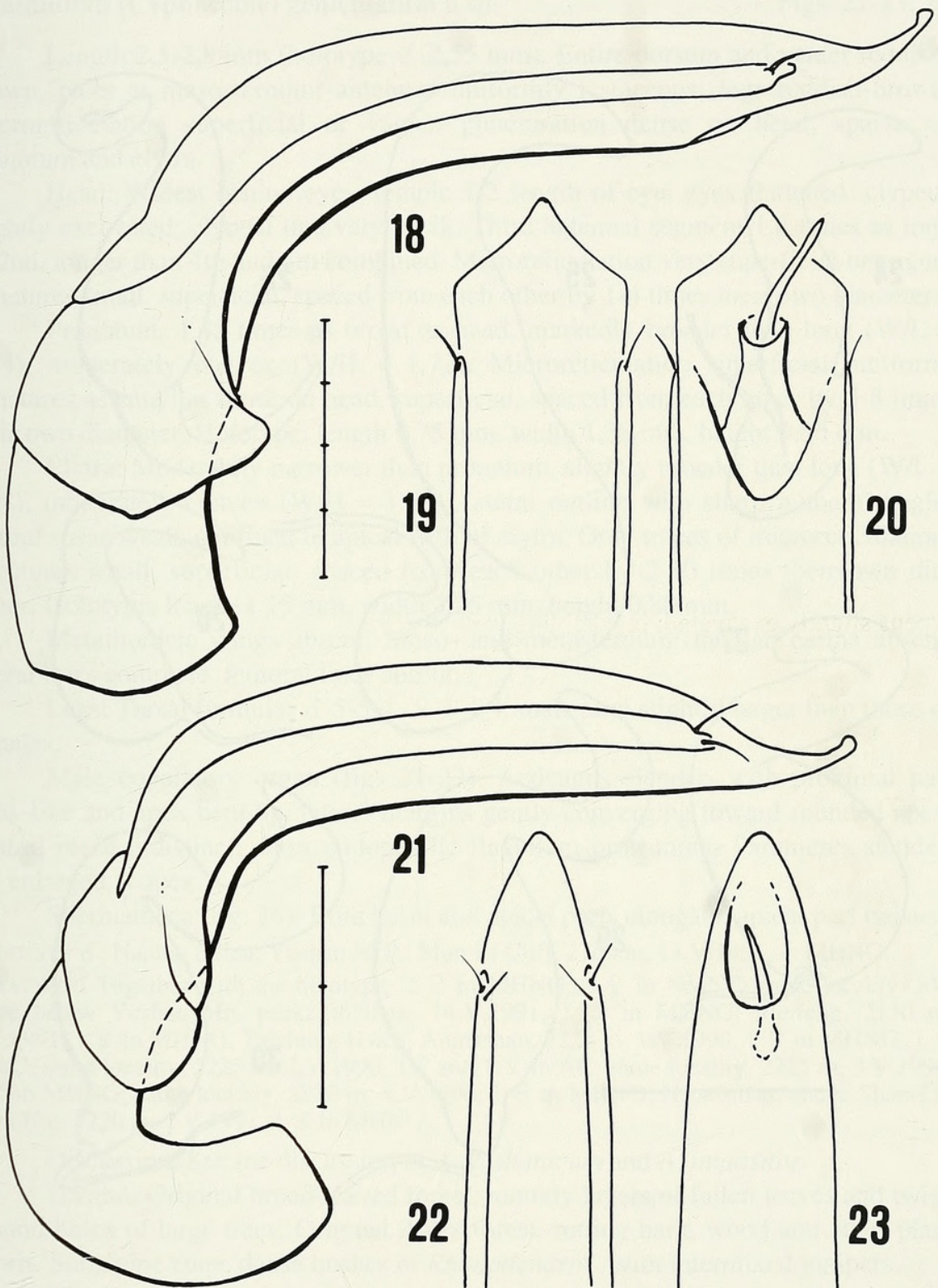
Spermatheca (fig. 25): Basal part elongate, twisted at duct connection; apical part stout, shorter.

HOLOTYPE ♀: Taichung Hsien, Hsuehshan, above Shan-Liu Gieu Hut, 3200 m, 8.V.1991, in MHNG.

Discussion: See the discussion of *A.yushanicum*. *Agathidium inquisitor* n.sp. is closely related to *A.geniculatum* n.sp., although these two species are different in size, ratio of 3rd/2nd antennal segments, coloration and puncturation of dorsum.

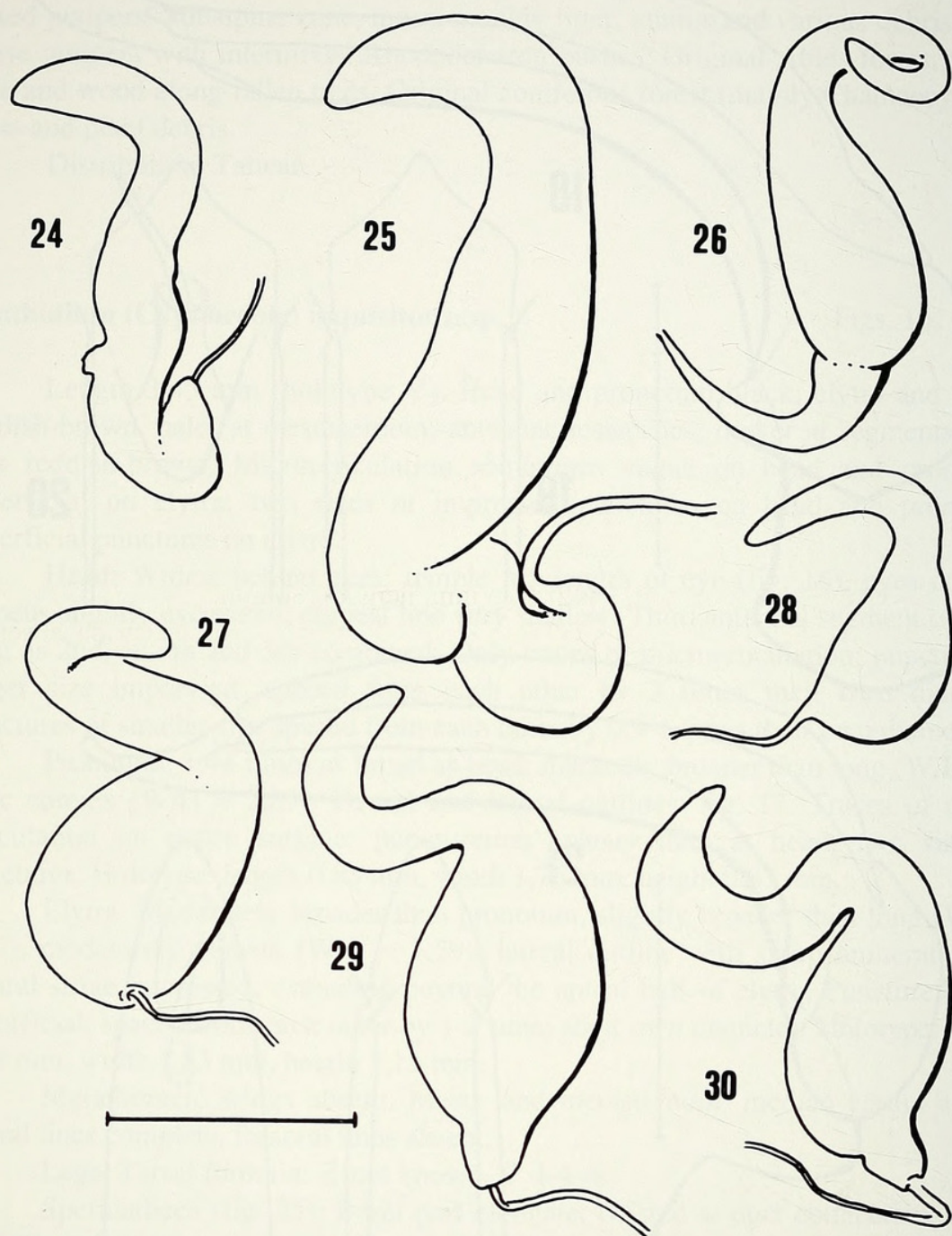
Habitat: Open *Abies* forest, dead leaves, rotting bark, wood and moss.

Distribution: Taiwan.



FIGS 18-23

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 18-20, *Agathidium yushanicum* n.sp.; 21-23, *A. geniculatum* n.sp. Scales: 1 division = 0,1 mm.



FIGS 24-30

Spermatheca of: 24, *Agathidium yushanicum* n.sp.; 25, *A. inquisitor* n.sp.; 26, *A. geniculatum* n.sp.; 27, *A. praeustum* n.sp.; 28, *A. tarokoense* n.sp.; 29, *A. vestitum* n.sp.; 30, *A. rufomarginatum* n.sp. Scale: 1 division = 0,1 mm.

Agathidium (Cyphocele) geniculatum n.sp.

Figs. 21-23, 26

Length 2,5-2,8 mm (holotype ♂ 2,55 mm). Entire dorsum and venter reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs reddish-brown. Microreticulation superficial or vague; puncturation dense on head, sparse on pronotum and elytra.

Head: Widest behind eyes: temple $1/2$ length of eye; eyes flattened; clypeus slightly excavated; clypeal line very weak. Third antennal segment 1,8 times as long as 2nd, longer than 4th and 5th combined. Microreticulation very superficial or vague; punctures small, superficial, spaced from each other by 1-4 times their own diameter.

Pronotum: 1,45 times as broad as head, markedly broader than long ($W/L = 1,84$), moderately convex ($W/H = 1,72$). Microreticulation superficial, uniform; punctures as small as those on head, superficial, spaced from each other by 3-8 times their own diameter. Holotype: length 0,75 mm, width 1,38 mm, height 0,80 mm.

Elytra: Moderately narrower than pronotum, slightly broader than long ($W/L = 1,08$), moderately convex ($W/H = 1,56$); lateral outline with sharp humeral angle; sutural striae weak, confined to apical fifth of elytra. Only traces of microreticulation; punctures small, superficial, spaced from each other by 2-10 times their own diameter. Holotype: length 1,15 mm, width 1,25 mm, height 0,80 mm.

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

Legs: Tarsal formula: ♂ 5-5-4, ♀ 4-4-4; male tarsi slightly larger than those of females.

Male copulatory organ (figs 21-23): Aedeagus slender, with proximal part hook-like and apex bent up, lateral margins gently converging toward rounded apex, ventral piece indistinct; short endophallic flagellum protruding. Parameres slender, not enlarged at apex.

Spermatheca (fig. 26): Both basal and apical parts elongate; apical part twisted.

HOLOTYPE ♂: Nantou Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 13.V.1991, in MHNG.

PARATYPES: Together with the holotype, 2 ♀ in MHNG, 2 ♀ in NMNT; same locality, SW slope below Yushan Mn. peak, 3650 m, 14.V.1991, 1 ♀ in MHNG; Meifeng, 2130 m, 3.V.1991, 1 ♀ in MHNG; Taichung Hsien, Anmashan, 2225 m, 1.V.1990, 1 ♀ in MHNG, 1 ♀ in AC; same locality, 2225 m, 2.V.1990, 1 ♂ and 1 ♀ in AC; same locality, 2225 m, 3.V.1990, 1 ♂ in MHNG; same locality, 2230 m, 4.V.1990, 1 ♂ in MHNG; Hsuehshan, above Shan-Liu Gieu Hut, 3220 m, 7.V.1991, 1 ♂ in MHNG.

Discussion: See the discussion of *A. yushanicum* and *A. inquisitor*.

Habitat: Original broad-leaved forest, mouldy layers of fallen leaves and twigs around bases of large trees. Original *Abies* forest, rotting bark, wood and other plant debris. Subalpine zone, dense bushes of *Rhododendron*, with intermixed junipers.

Distribution: Taiwan.

Subg. **Neocele** Gozis, 1886

Group: **nigripenne**

Agathidium (Neocele) praeustum n.sp.

Figs. 27, 31

Length 3,3 mm (holotype ♀). Entire dorsum and venter reddish-brown, paler at mesosternum (not fully sclerotized specimen); antennae testaceous, darker at segments 7-11; legs reddish-brown. Microreticulation vague, due to incomplete sclerotization; puncturation impressed on entire dorsum.

Head: Widest at eyes (fig. 31); eyes convex; clypeus moderately excavated; clypeal line very weak. Third antennal segment 1,6 times as long as 2nd, shorter than 4th and 5th combined; Hamann's organ: gutter with one vesicle in both 9th and 10th antennal segments. Microreticulation absent or vague; punctures moderately large, superficial, spaced from each other by 1-3 times their own diameter.

Pronotum: 1,6 times as broad as head, markedly broader than long ($W/L = 2$), slightly convex ($W/H = 1,85$). Microreticulation vague or absent; punctures somewhat larger than at head, impressed, spaced from each other by 1-6 times their own diameter. Holotype: length 0,90 mm, width 1,80 mm, height 0,97 mm.

Elytra: As broad as pronotum, moderately broader than long ($W/L = 1,12$), moderately convex ($W/H = 1,57$); lateral outline with sharp humeral angle; sutural striae weak, confined to apical half of elytra. Only traces of microreticulation; punctures larger and deeper than those of pronotum, spaced from each other by 1-4 times their own diameter. Holotype: length 1,60 mm, width 1,80 mm, height 1,14 mm.

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

Legs: Tarsal formula: ♂ not known, ♀ 4-4-4.

Spermatheca (fig. 27): Basal part pyriform, apical part elongate, twisted.

HOLOTYPE ♀: Pingtung Hsien, Peitawushan, trail at 2000 m, 23.V.1991, in MHNG.

Discussion: From the other *Neocele* species from Taiwan, *Agathidium praeustum* n.sp. differs by its larger size; furthermore, it differs from *A. nigrocastaneum* n.sp. in puncturation and coloration, from *A. tarokoense* n.sp., *A. vestitum* n.sp. and *A. rufomarginatum* n.sp. in the ratio of 3rd/2nd antennal segments.

Habitat: Original broad-leaved forest, lush undergrowth along trail.

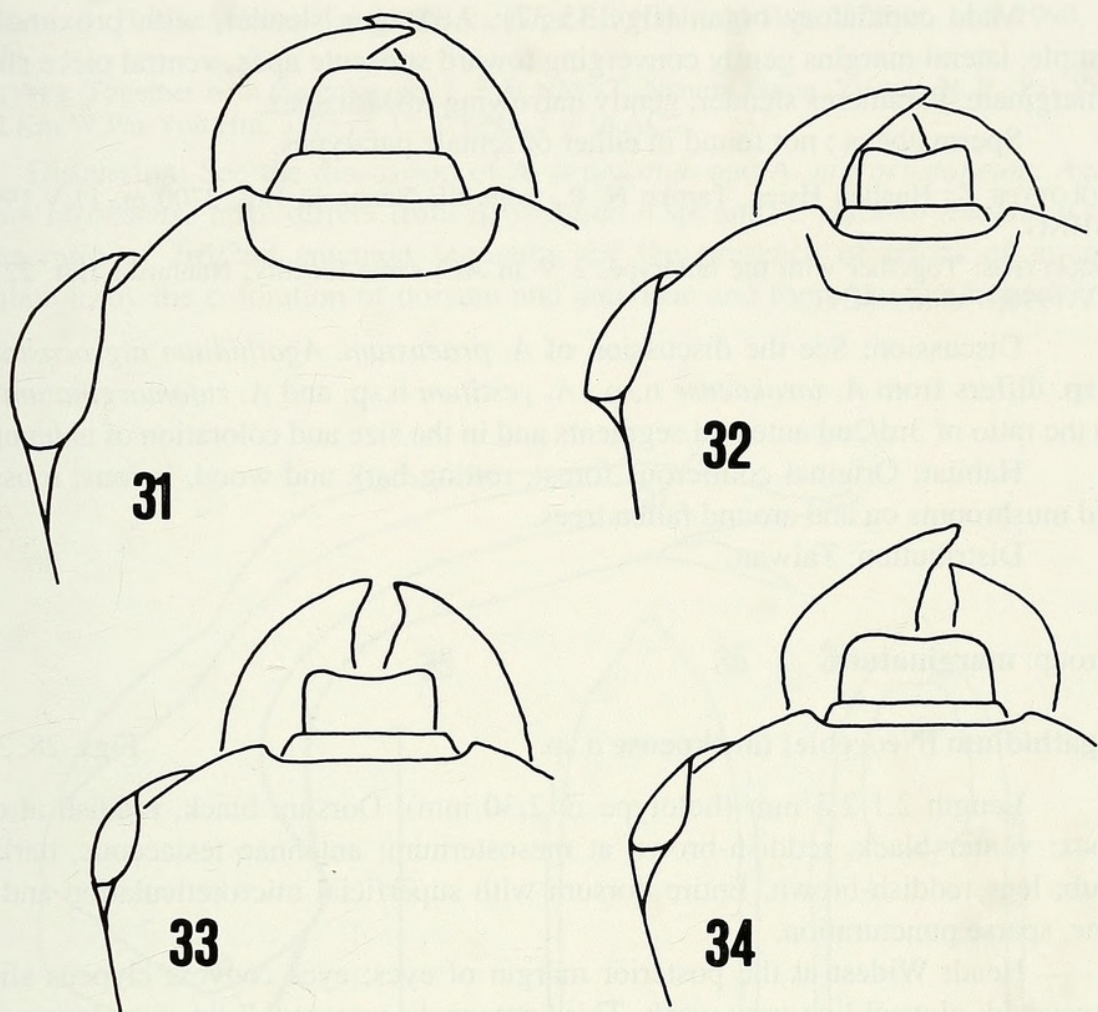
Distribution: Taiwan.

Agathidium (Neocele) nigrocastaneum n.sp.

Figs. 32, 35-37

Length 2,6-2,7 mm (holotype ♂ 2,60 mm). Head and pronotum black, elytra and venter reddish-brown, paler at mesosternum; antennae reddish-brown, darker at club; legs reddish-brown. Microreticulation absent, except for some traces on head and pronotum; puncturation fine, sparse on head and pronotum, absent on elytra.

Head: Widest at eyes (fig. 32); eyes convex; left mandible of males sometimes with a tooth (observed in the male paratype); clypeus much excavated; clypeal line absent. Third antennal segment 1,5 times as long as 2nd, as long as than 4th and 5th combined. Microreticulation absent; punctures small, superficial, spaced from each other by 4-10 times their own diameter.



FIGS 31-34

Head of: 31, *Agathidium praeustum* n.sp.; 32, *A. nigrocastaneum* n.sp.; 33, *A. vestitum* n.sp.; 34, *A. rufomarginatum* n.sp.

Pronotum: 1,40 times as broad as head, moderately broader than long ($W/L = 1,68$), moderately convex ($W/H = 1,72$). Only traces of microreticulation; punctures as small as those on head, sparser, spaced from each other by 5-20 times their own diameter. Holotype: length 0,82 mm, width 1,38 mm, height 0,80 mm.

Elytra: As broad as pronotum, moderately broader than long ($W/L = 1,15$), very convex ($W/H = 1,4$); lateral outline with sharp humeral angle; sutural striae weak, confined to apical half of elytra. Only traces of microreticulation; puncturation absent, except for some sparse, very small punctures. Holotype: length 1,20 mm, width 1,38 mm, height 0,98 mm.

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

Legs: Tarsal formula: ♂ 5-5-4, ♀ 4-4-4; male tarsi slightly larger than those of females.

Male copulatory organ (figs 35-37): Aedeagus slender, with proximal part simple, lateral margins gently converging toward subacute apex, ventral piece slightly emarginate. Parameres slender, gently narrowing toward apex.

Spermatheca : not found in either of female paratypes.

HOLOTYPE ♂: Hualien Hsien, Taroko N. P., ridge SE Nanhushi Hut, 2700 m, 11.V.1990, in MHNG.

PARATYPES: Together with the holotype, 2 ♀ in AC; same locality, Nanhushi Hut, 2220 m, 8.V.1990, 1 ♂ in NMNT.

Discussion: See the discussion of *A. praeustum*. *Agathidium nigrocastaneum* n.sp. differs from *A. tarokoense* n.sp., *A. vestitum* n.sp. and *A. rufomarginatum* n.sp. in the ratio of 3rd/2nd antennal segments and in the size and coloration of antennae.

Habitat: Original coniferous forest, rotting bark and wood, humus, moss and old mushrooms on and around fallen trees.

Distribution: Taiwan.

Group: **marginatum**

Agathidium (Neoceble) tarokoense n.sp.

Figs. 28, 38-40

Length 2,1-2,3 mm (holotype ♂ 2,30 mm). Dorsum black, reddish at elytra apex; venter black, reddish-brown at mesosternum; antennae testaceous, darker at club; legs reddish-brown. Entire dorsum with superficial microreticulation and with fine, sparse puncturation.

Head: Widest at the posterior margin of eyes; eyes convex; clypeus slightly excavated; clypeal line very weak. Third antennal segment 0,7 times as long as 2nd, shorter than 4th and 5th combined. Microreticulation superficial, uniform; punctures small, superficial, spaced from each other by 2-10 times their own diameter.

Pronotum: 1,6 times as broad as head, moderately broader than long ($W/L = 1,66$), moderately convex ($W/H = 1,60$). Microreticulation superficial; punctures as small as those on head, sparser. Holotype: length 0,72 mm, width 1,20 mm, height 0,75 mm.

Elytra: Slightly narrower than pronotum, moderately broader than long ($W/L = 1,1$), very convex ($W/H = 1,41$); lateral outline with sharp humeral angle; sutural striae absent. Microreticulation superficial; punctures larger than at head, superficial, spaced from each other by 1-10 times their own diameter. Holotype: length 1,05 mm, width 1,16 mm, height 0,82 mm.

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

Legs: Tarsal formula: ♂ 4-4-4, ♀ 4-4-4; male tarsi slightly larger than those of females.

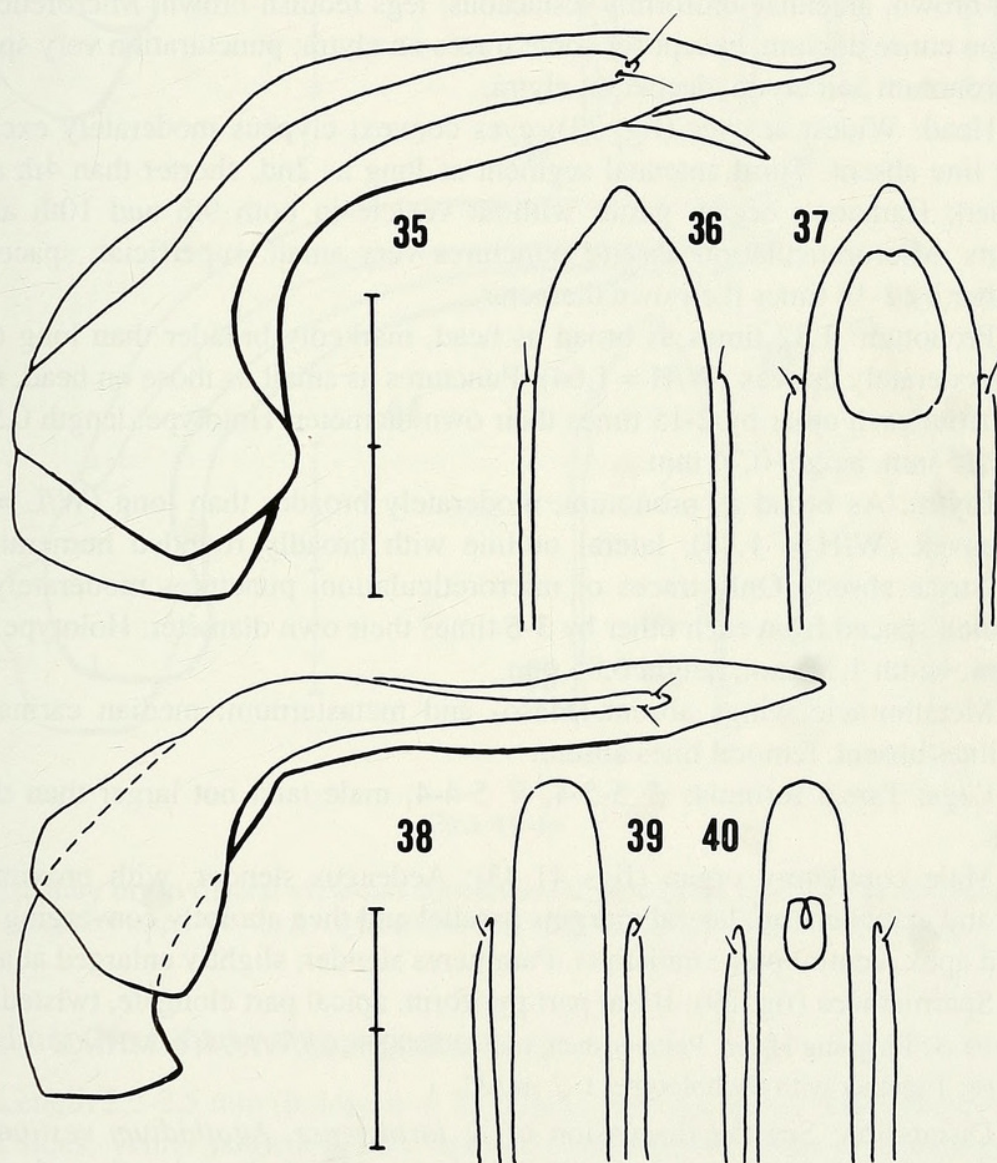
Male copulatory organ (figs 38-40): Aedeagus slender, with proximal part simple, lateral margins parallel, apex broadly rounded, ventral piece bifid. Parameres slender, slightly enlarged at apex.

Spermatheca (fig. 28): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Hualien Hsien, Taroko N. P., ridge SE Nanhushi Hut, 2700 m, 11.V.1990, in MHNG.

PARATYPES: Together with the holotype, 1 ♀ in NMNT; Nantou Hsien, Yushan N. P., Pai-Yun Hut, 2 Km W Pai-Yun Hut, 3375 m, 17.V.1991, 2 ♂ in AC.

Discussion: See the discussion of *A. praeustum* and *A. nigrocastaneum*; *Agathidium tarokoense* n.sp. differs from *A. vestitum* n.sp. and *A. rufomarginatum* n.sp. by the ratio of 3rd/2nd antennal segments, by the presence of traces of micro-reticulation, by the coloration of dorsum and antennae and the pronotum/head width ratio.



FIGS 35-40

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 35-37, *Agathidium nigrocastaneum* n.sp.; 38-40, *A. tarokoense* n.sp. Scales: 1 division = 0,1 mm.

Habitats: Original *Abies* forest, rotting bark and wood along fallen trees. Original coniferous forest, rotting bark and wood, humus, moss and old mushrooms on and around fallen trees.

Distribution: Taiwan.

Group: **canariense**

Agathidium (Neocele) vestitum n.sp.

Figs. 29, 33, 41-43

Length 2,1-2,5 mm (holotype ♂ 2,10 mm). Entire dorsum and venter dark reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; puncturation very sparse on head, pronotum and elytra, deeper on elytra.

Head: Widest at eyes (fig. 33); eyes convex; clypeus moderately excavated; clypeal line absent. Third antennal segment as long as 2nd, shorter than 4th and 5th combined; Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Microreticulation absent; punctures very small, superficial, spaced from each other by 2-10 times their own diameter.

Pronotum: 1,32 times as broad as head, markedly broader than long ($W/L = 1,98$), moderately convex ($W/H = 1,64$). Punctures as small as those on head, sparser, spaced from each other by 2-15 times their own diameter. Holotype: length 0,58 mm, width 1,15 mm, height 0,70 mm.

Elytra: As broad as pronotum, moderately broader than long ($W/L = 1,27$), very convex ($W/H = 1,35$); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation; punctures moderately large, superficial, spaced from each other by 3-6 times their own diameter. Holotype: length 0,90 mm, width 1,15 mm, height 0,85 mm.

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

Legs: Tarsal formula: ♂ 5-5-4, ♀ 5-4-4; male tarsi not larger than those of females.

Male copulatory organ (figs 41-43): Aedeagus slender, with proximal part simple and apex bent up, lateral margins parallel and then abruptly converging toward rounded apex, ventral piece indistinct. Parameres slender, slightly enlarged at apex.

Spermatheca (fig. 29): Basal part pyriform, apical part elongate, twisted.

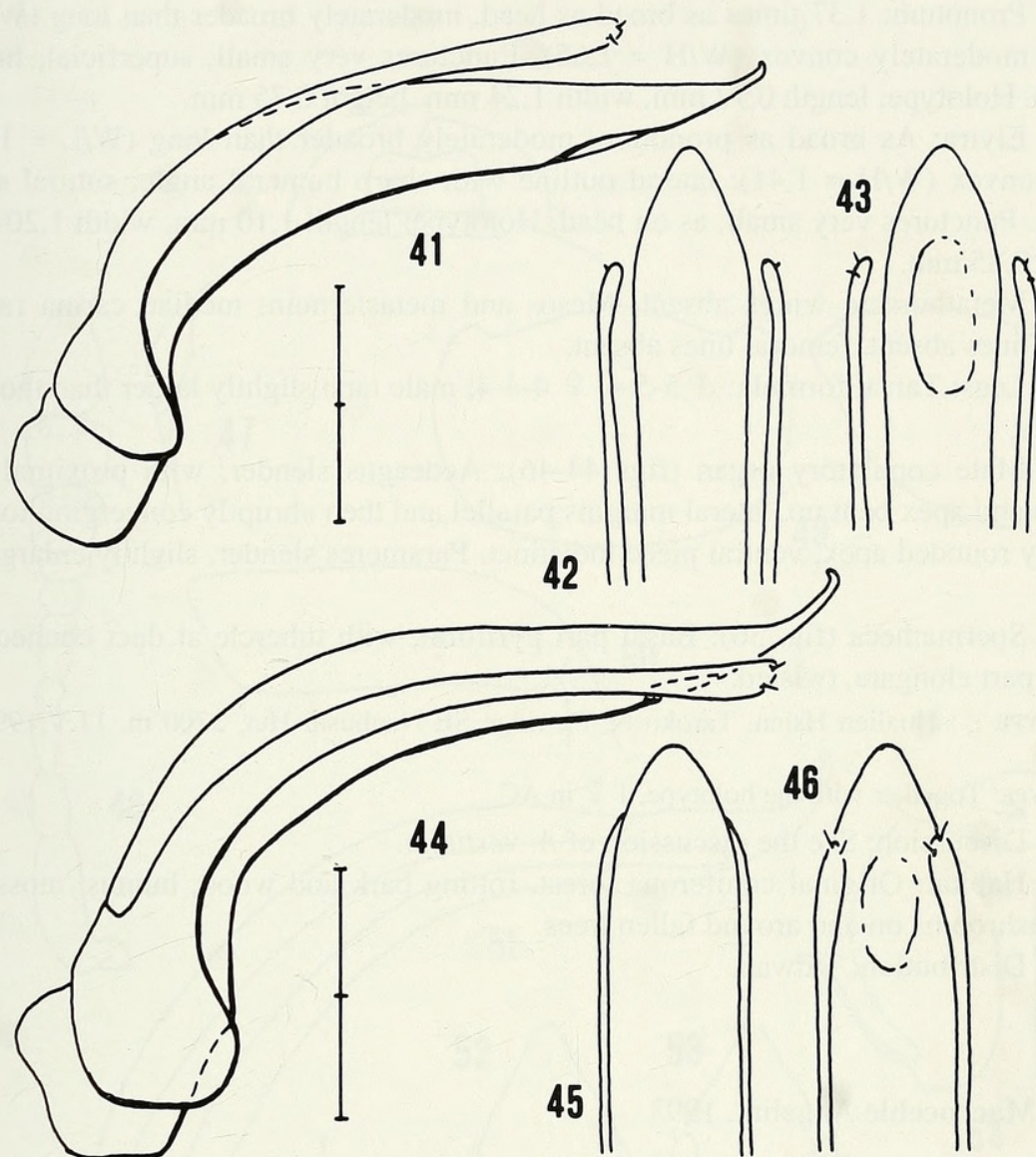
HOLOTYPE ♂: Pingtung Hsien, Peitawushan, trail at 2000 m, 23.V.1991, in MHNG.

PARATYPE: Together with the holotype, 1 ♀ in AC.

Discussion: See the discussion of *A. tarokoense*. *Agathidium vestitum* n.sp. differs from *A. rufomarginatum* n.sp. by the shape of head, the coloration of antennae, by the female tarsal formula and by the deeper elytral puncturation.

Habitat: Original broad-leaved forest, lush undergrowth along a trail, plant debris and litter.

Distribution: Taiwan.



FIGS 41-46

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 41-43, *Agathidium vestitum* n.sp.; 44-46, *A. rufomarginatum* n.sp. Scales: 1 division = 0,1 mm.

***Agathidium* (Neoceble) *rufomarginatum* n.sp.**

Figs. 30, 34, 44-46

Length 2,2-2,5 mm (holotype ♂ 2,50 mm). Entire dorsum dark reddish-brown, paler at sides; venter reddish-brown; antennae testaceous, darker at segments 9-10; legs reddish-brown. Microreticulation absent on entire dorsum; puncturation very sparse on entire dorsum.

Head: Widest at eyes (fig. 34); eyes convex; clypeus slightly excavated; clypeal line absent. Third antennal segment as long as 2nd, shorter than 4th and 5th combined. Punctures very small, superficial, hardly visible.

Pronotum: 1,37 times as broad as head, moderately broader than long ($W/L = 1,72$), moderately convex ($W/H = 1,65$). Punctures very small, superficial, hardly visible. Holotype: length 0,72 mm, width 1,24 mm, height 0,75 mm.

Elytra: As broad as pronotum, moderately broader than long ($W/L = 1,09$), very convex ($W/H = 1,41$); lateral outline with sharp humeral angle; sutural striae absent. Punctures very small, as on head. Holotype: length 1,10 mm, width 1,20 mm, height 0,85 mm.

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

Legs: Tarsal formula: ♂ 5-5-4, ♀ 4-4-4; male tarsi slightly larger than those of females.

Male copulatory organ (figs 44-46): Aedeagus slender, with proximal part simple and apex bent up, lateral margins parallel and then abruptly converging toward broadly rounded apex, ventral piece indistinct. Parameres slender, slightly enlarged at apex.

Spermatheca (fig. 30): Basal part pyriform, with tubercle at duct connection; apical part elongate, twisted.

HOLOTYPE ♂: Hualien Hsien, Taroko N. P., ridge SE Nanhushi Hut, 2700 m, 11.V.1990, in MHNG.

PARATYPE: Together with the holotype, 1 ♀ in AC.

Discussion: See the discussion of *A. vestitum*.

Habitat: Original coniferous forest, rotting bark and wood, humus, moss and old mushrooms on and around fallen trees.

Distribution: Taiwan.

Subg. **Macroceble** Angelini, 1993

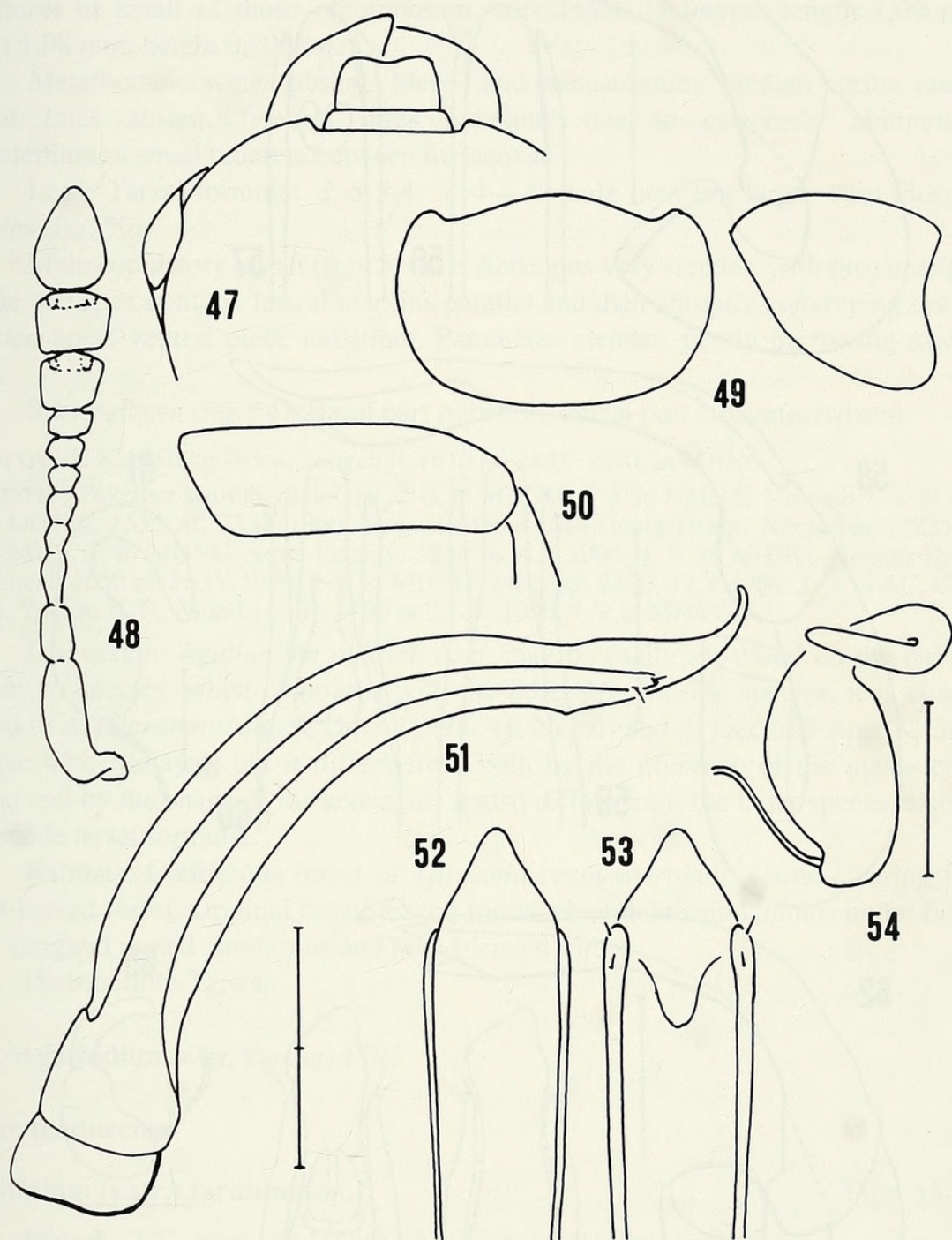
Agathidium (Macroceble) oblitum n.sp.

Figs. 47-54

Length 2,3-2,4 mm (holotype ♂ 2,40 mm). Entire dorsum dark reddish-brown or black; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum; puncturation very sparse on entire dorsum.

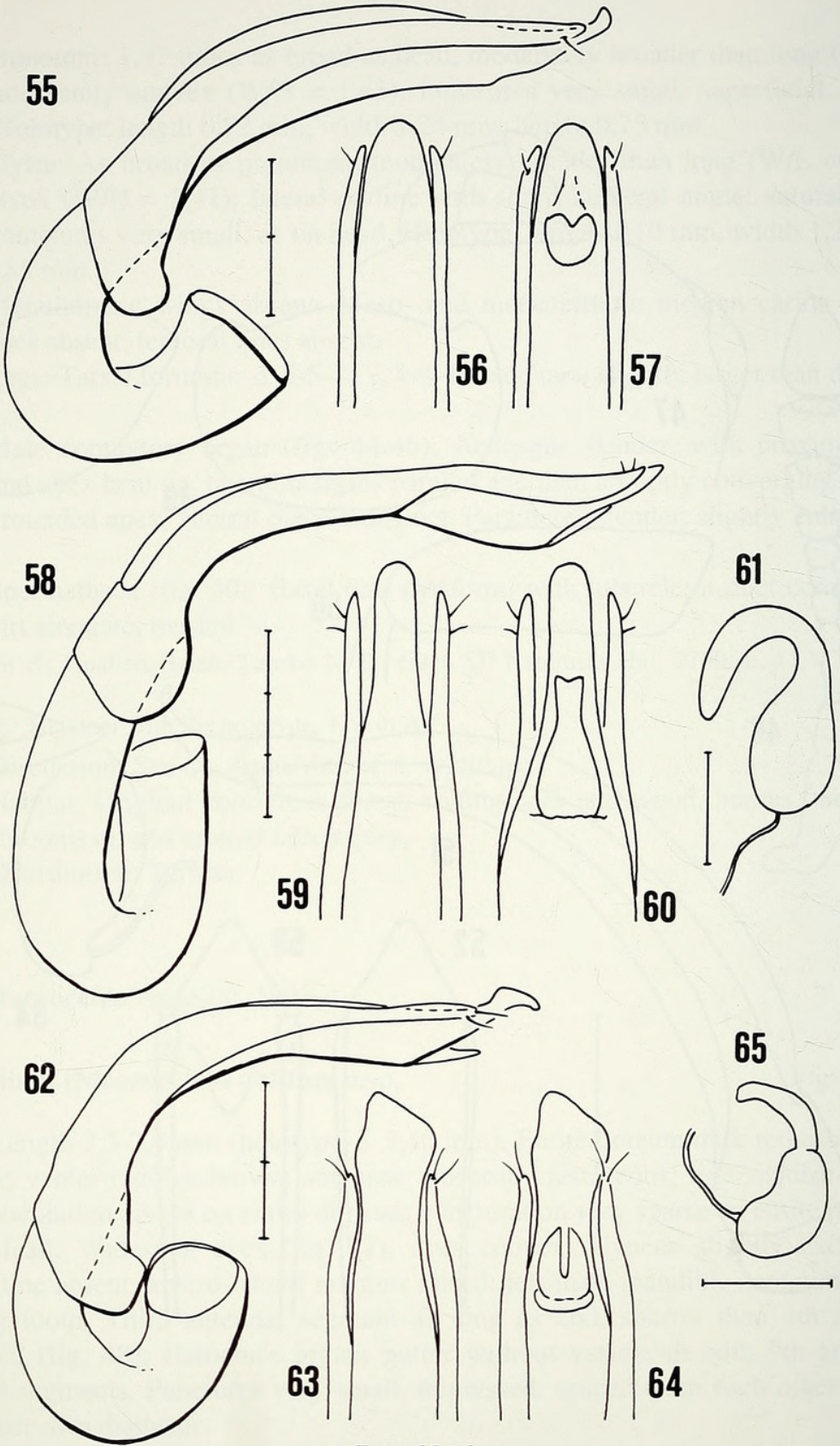
Head: Widest at eyes (fig. 47); eyes convex; clypeus slightly excavated; clypeal line absent; antero-lateral margins raised; left male mandible sometimes with a strong tooth. Third antennal segment as long as 2nd, shorter than 4th and 5th combined (fig. 48); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, impressed, spaced from each other by 1-6 times their own diameter.

Pronotum: 1,28 times as broad as head, moderately broader than long ($W/L = 1,51$), moderately convex ($W/H = 1,57$). Dorsal and lateral outlines: fig. 49. Punctures as small as those on head, superficial, spaced from each other by 1-20 times their own diameter. Holotype: length 0,74 mm, width 1,12 mm, height 0,71 mm.



FIGS 47-54

Agathidium oblitum n.sp.: head, antenna, pronotum (dorsal and lateral outline) male hind femur, male copulatory organ (lateral view and dorsal/ventral view of its apex) and spermatheca. Scales: 1 division = 0,1 mm.



FIGS. 55-65

Male copulatory organ (lateral view and dorsal/ventral view of its apex) and spermatheca of: 55-57, *Agathidium tardum* n.sp.; 58-61, *A. distinguendum* n.sp.; 62-65, *A. familiare* n.sp. Scales: 1 division = 0,1 mm.

Elytra: As broad as pronotum, as broad as long, moderately convex ($W/H = 1,54$); lateral outline with broadly rounded humeral angle; sutural striae absent. Punctures as small as those of pronotum, superficial. Holotype: length 1,09 mm, width 1,08 mm, height 0,70 mm.

Metathoracic wings absent. Meso- and metasternum: median carina raised, lateral lines absent, femoral lines indistinct due to extremely abbreviated metasternum; a small tubercle between metacoxae.

Legs: Tarsal formula: ♂ 5-5-4, ♀ 4-4-4; male tarsi not larger than those of females (fig. 50).

Male copulatory organ (figs 51-53): Aedeagus very slender, with proximal part simple and apex bent up, lateral margins parallel and then abruptly converging toward rounded apex, ventral piece indistinct. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 54): Basal part pyriform, apical part elongate, twisted.

HOLOTYPE ♂: Kaohsiung Hsien, Tengchih, 1610 m, 24.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 2 ♂ in MHNG, 1 ♂ in NMNT, 1 ♂ and 1 ♀ in AC; same locality, 1535 m, 23.IV.1990, 1 ♀ in MHNG; Taichung Hsien, Anmashan, 2225 m, 1.V.1990, 1 ♀ in MHNG; same locality, 2230 m, 4.V.1990, 1 ♀ in MHNG; Nantou Hsien, Shanlinchi, 1650 m, 16.IV.1990, 1 ♂ in MHNG; Meifeng, 2130, 12.V.1991, 1 ♂ in AC; Chiai Hsien, Yushan N. P., Mun-Li Cliff, 1700 m, 27.IV.1990, 1 ♀ in MHNG.

Discussion: *Agathidium oblitum* n.sp. may be easily separated on the base of the key to species; when compared with the other *Macroceble* species, it is closely related to *A. fulcratum* Ang. & Dmz. (1994: 41, Nepal) and *A. jaccoudi* Ang. & Dmz. (1986a: 429, Malaya), but it differs from both by the presence of the mesosternal carina, and by the shape of the aedeagus; it also differs from the latter species also by the female tarsal formula.

Habitats: Coniferous forest of *Taiwania cryptomeroides*. Large clearing in a broad-leaved forest. Original broad-leaved forest, plant debris and humus under fallen trees. Original mixed coniferous and broad-leaved forest.

Distribution: Taiwan.

Subg. **Agathidium** s.str. Panzer, 1797

Group: **madurensis**

Agathidium (s.str.) tardum n.sp.

Figs. 55-57

Length 2,75 mm (holotype ♂). Entire dorsum reddish-brown; antennae testaceous, darker at club; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; puncturation fine and sparse on entire dorsum.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins raised. Third antennal segment 1,8 times as long as 2nd, longer than 4th and 5th combined. Punctures small, superficial, spaced from each other by 3-10 times their own diameter.

Pronotum: 1,66 times as broad as head, moderately broader than long ($W/L = 1,56$), very convex ($W/H = 1,44$). Punctuation as that of head. Holotype: length 0,83 mm, width 1,30 mm, height 0,90 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1,78$); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation; punctures twice as broad as those on head, spaced from each other by 1-10 times their own diameter. Holotype: length 1,25 mm, width 1,25 mm, height 0,97 mm.

Metathoracic wings present. Meso- and metasternum: median carina weak, lateral lines absent, femoral lines incomplete.

Legs: Male hind femora broadened distally. Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 55-57): Aedeagus very slender, with proximal part hook-like and apex bent up, lateral margins parallel, apex broadly rounded, ventral piece deeply emarginate. Parameres slender, gently narrowing toward apex.

HOLOTYPE ♂: Kaohsiung Hsien, Tengchih, 1610 m, 24.IV.1990, in MHNG.

Discussion: *Agathidium tardum* n.sp. clearly differs from the other Taiwanese species of the *madurensis* group by the ratio of 3rd/2nd antennal segments and by the coloration of the antennal club; furthermore, it differs from *A. distinguendum* n.sp. by the possession of the metathoracic wings and by the pronotum/head ratio.

Habitat: Large clearing in a broad-leaved forest, dead vegetation and humus, rotting bark and wood along fallen trees and stumps.

Distribution: Taiwan.

***Agathidium* (s.str.) *distinguendum* n.sp.**

Figs. 58-61

Length 3,0-3,7 mm (holotype ♂ 3,65 mm). Entire dorsum black; venter reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum; punctuation very sparse on head and pronotum, absent on elytra.

Head: Widest at eyes; eyes convex; clypeus sharply excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,2 times as long as 2nd, as long as 4th and 5th combined. Punctures very small, superficial, hardly visible.

Pronotum: 1,45 times as broad as head, slightly broader than long ($W/L = 1,35$), very convex ($W/H = 1,3$). Punctures as small and sparse as those on head. Holotype: length 1,35 mm, width 1,70 mm, height 0,30 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1,53$); lateral outline with broadly rounded humeral angle; sutural striae absent. Holotype: length 1,55 mm, width 1,47 mm, height 0,96 mm.

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

Legs: Male hind femora with a very large tooth. Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 58-60): Aedeagus very slender, with ring-like proximal part, lateral margins gently converging toward rounded apex, ventral piece slightly emarginate. Parameres stout, abruptly narrowed at middle of their length.

Spermatheca (fig. 61): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Kaohsiung Hsien, Tengchih, 1580 m, 24.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 2 ♂ in MHNG, 1 ♂ in NMNT, 1 ♀ in AC; same locality, 1535 m, 23.IV.1990, 1 ♂ in MHNG, 1 ♂ in NMNT, 2 ♂ in AC; same locality, 1610 m, 24.IV.1990, 2 ♂ in MHNG.

Discussion: See the discussion of *A. tardum*. *Agathidium distinguendum* n.sp. differs from *A. formosum* Ang. & Dmz. (1985: 32, Taiwan) and *A. familiare* n.sp. by the coloration of the dorsum and the antennae, and by the shape of the male hind femora; furthermore, it differs from the former by the absence of the metathoracic wings and from the latter by the absence of the puncturation and traces of microreticulation on the elytra.

Habitats: Coniferous forest of *Taiwanis cryptomeroides*. Large clearing in a broad-leaved forest, dead vegetation and humus, rotting bark and wood along fallen trees and stumps.

Distribution: Taiwan.

***Agathidium* (s.str.) *familiale* n.sp.**

Figs. 62-65

Length 2,5-2,7 mm (holotype ♂ 2,65 mm). Entire dorsum and venter reddish-brown, paler at mesosternum; antennae testaceous, darker at segments 7-11; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; puncturation fine and sparse on entire dorsum.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins raised. Third antennal segment as long as 2nd, shorter than 4th and 5th combined. Punctures small, superficial, spaced from each other by 1-8 times their own diameter.

Pronotum: 1,44 times as broad as head, moderately broader than long ($W/L = 1,51$), very convex ($W/H = 1,44$). Puncturation as that of head. Holotype: length 0,86 mm, width 1,30 mm, height 0,90 mm.

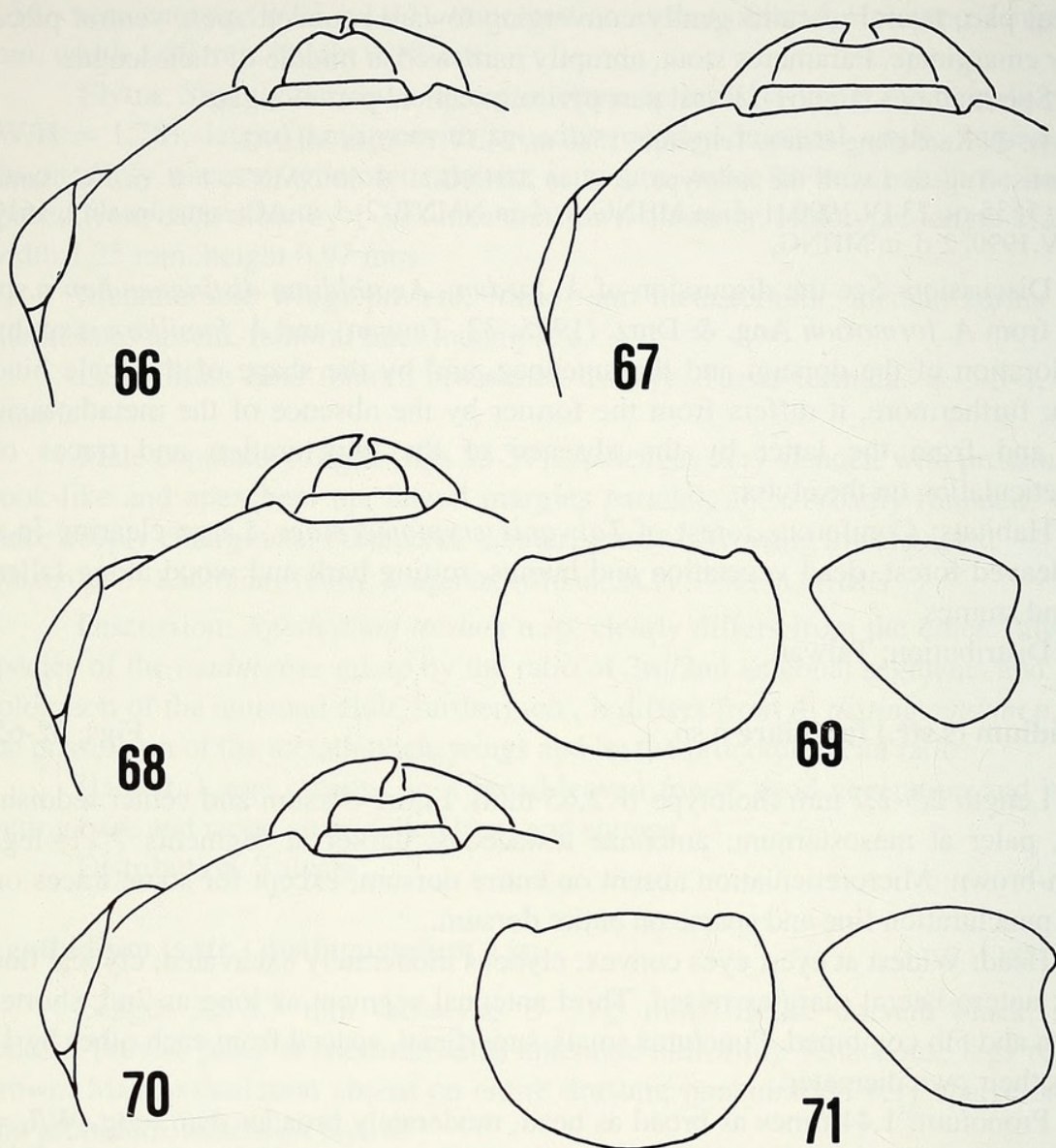
Elytra: Slightly narrower than pronotum, nearly as broad as long ($W/L = 1,08$), slightly convex ($W/H = 1,86$); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation; punctures very small, superficial, spaced from each other by 5-15 times their own diameter. Holotype: length 1,15 mm, width 1,25 mm, height 0,67 mm.

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

Legs: Male hind femora broadened distally. Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 62-64): Aedeagus slender, with proximal part hook-like and apex bent up, lateral margins sinuate, apex asymmetrical, subacute, ventral piece deeply bifid. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 65): Basal part pyriform, apical part elongate.

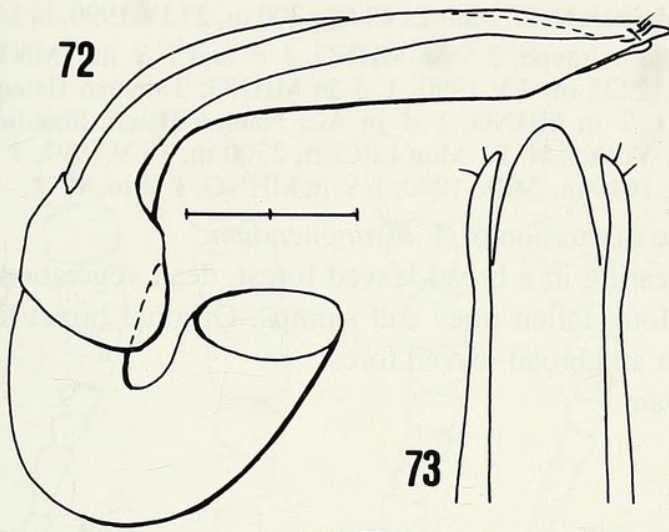


FIGS 66-71

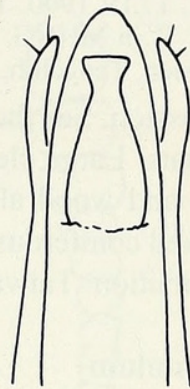
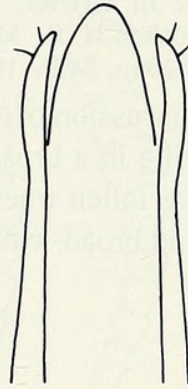
Pronotum (dorsal and lateral outline) and/or head of: 66, *Agathidium lucidum* n.sp.; 67, *A. tenebroides* n.sp.; 68-69, *A. tessellatum* n.sp.; 70-71, *A. memnonium* n.sp.

FIGS 72-80

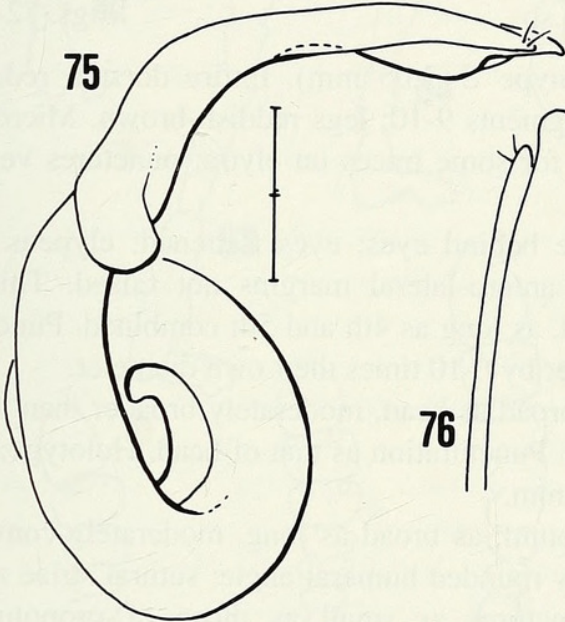
Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 72-74, *Agathidium glabricolle* n.sp.; 75-77, *A. honestum* n.sp.; 78-80, *A. lucidum* n.sp. Scales: 1 division = 0,1 mm.



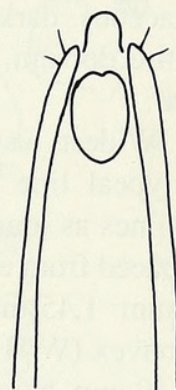
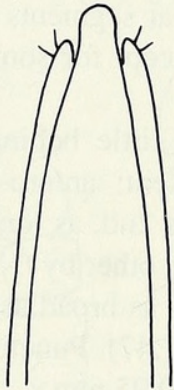
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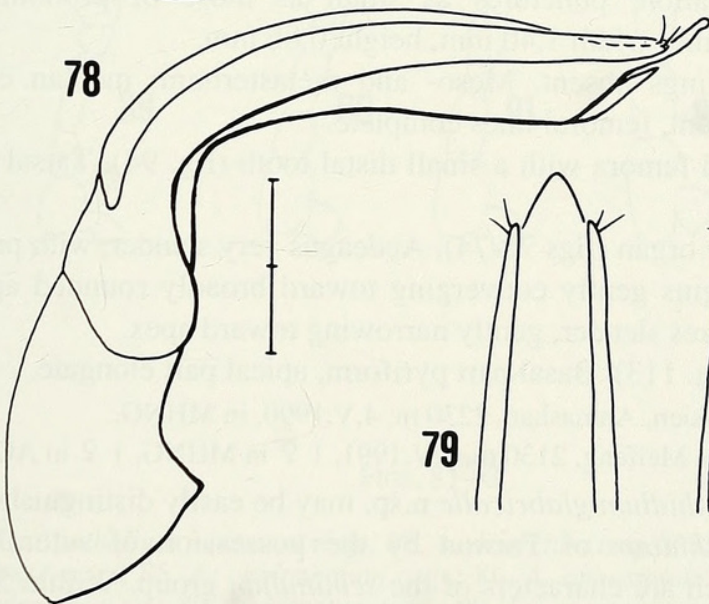
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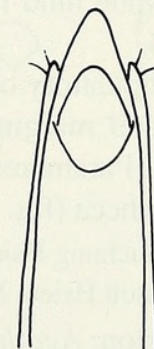
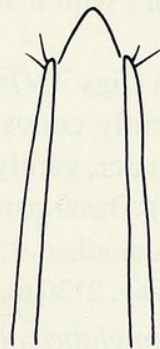
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HOLOTYPE ♂: Chiai Hsien, Yushan N. P., Mun-Li Cliff, 1700 m, 27.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 2 ♀ in MHNG, 1 ♂ and 1 ♀ in NMNT, 1 ♂ in AC; Taichung Hsien, Anmashan, 2225 m, 2.V.1990, 1 ♂ in MHNG; Taoyuan Hsien, Takuanshan For., 1650 m, 17.IV.1990, 1 ♀ in MHNG, 1 ♂ in AC; Nantou Hsien, Shanlinchi, 1650 m, 16.IV.1990, 1 ♀ in MHNG; Yushan N. P., Mun-Li Cliff, 2700 m, 18.V.1991, 1 ♂ in MHNG; Kaohsiung-Hsien, Tengchih, 1610 m, 24.IV.1990, 1 ♀ in MHNG, 1 ♀ in AC.

Discussion: See the discussion of *A. distinguendum*.

Habitats: Large clearing in a broad-leaved forest, dead vegetation and humus, rotting bark and wood along fallen trees and stumps. Original broad-leaved forest. Original mixed coniferous and broad-leaved forest.

Distribution: Taiwan.

Group: **seminulum**

Agathidium (s.str.) glabricolle n.sp.

Figs. 72-74, 94, 113

Length 2,9-3,0 mm (holotype ♂ 3,05 mm). Entire dorsum reddish-brown; antennae testaceous, darker at segments 9-10; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; punctures very small on entire dorsum.

Head: Widest just a little behind eyes; eyes flattened; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,6 times as long as 2nd, as long as 4th and 5th combined. Punctures small, superficial, spaced from each other by 6-10 times their own diameter.

Pronotum: 1,45 times as broad as head, moderately broader than long ($W/L = 1,45$), very convex ($W/H = 1,47$). Punctuation as that of head. Holotype: length 0,96 mm, width 1,40 mm, height 0,95 mm.

Elytra: As broad as pronotum, as broad as long, moderately convex ($W/H = 1,62$); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation; punctures as small as those of pronotum, sparser. Holotype: length 1,36 mm, width 1,40 mm, height 0,86 mm.

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

Legs: Male hind femora with a small distal tooth (fig. 94). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

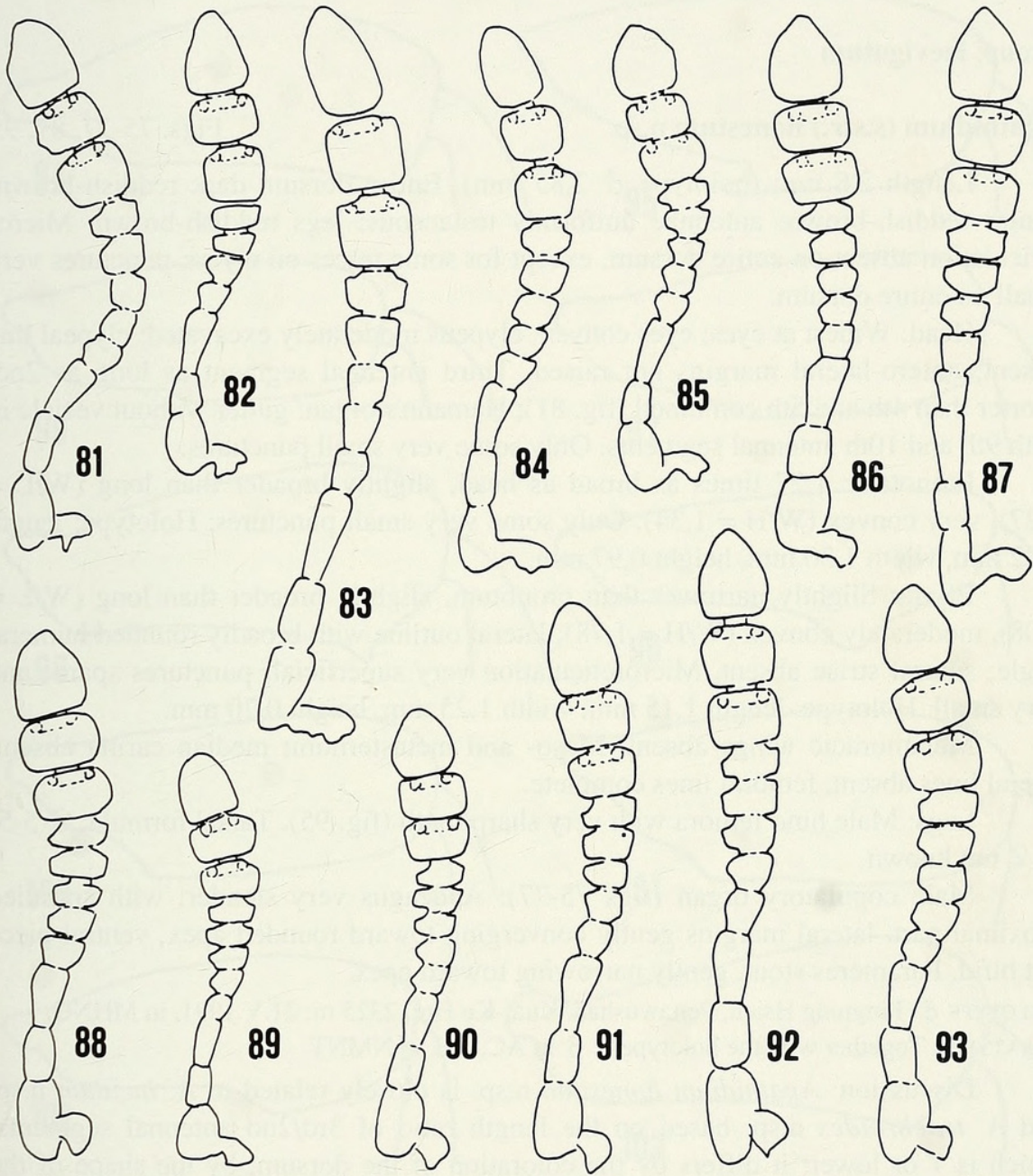
Male copulatory organ (figs 72-74): Aedeagus very slender, with proximal part hook-like, lateral margins gently converging toward broadly rounded apex, ventral piece not bifid. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 113): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Taichung Hsien, Anmashan, 2230 m, 4.V.1990, in MHNG.

PARATYPES: Nantou Hsien, Meifeng, 2130 m, 3.V.1991, 1 ♀ in MHNG, 1 ♀ in AC.

Discussion: *Agathidium glabricolle* n.sp. may be easily distinguished from any other species of *Agathidium* of Taiwan by the possession of sutural striae and microreticulation, which are characters of the *seminulum* group. Within SE Asia, the species of this group were previously known only from the Himalaya and Meghalaya.



FIGS. 81-93

Antenna of: 81, *Agathidium honestum* n.sp.; 82, *A. discretum* n.sp.; 83, *A. meifengense* n.sp.; 84, *A. kaohsiungense* n.sp.; 85, *A. chalconotum* n.sp.; 86, *A. angustatum* n.sp.; 87, *A. fuliginosum* n.sp.; 88, *A. alpestre* n.sp.; 89, *A. furcatum* n.sp.; 90, *A. comptum* n.sp.; 91, *A. intricatum* n.sp.; 92, *A. taichungense* n.sp.; 93, *A. exoletum* n.sp.

Habitat: Original broad-leaved forest, rotting bark, wood and other debris.
Distribution: Taiwan.

Group: **laevigatum**

Agathidium (s.str.) honestum n.sp.

Figs. 75-77, 81, 95

Length 2,8 mm (holotype ♂ 2,85 mm). Entire dorsum dark reddish-brown; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; punctures very small on entire dorsum.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment as long as 2nd, shorter than 4th and 5th combined (fig. 81); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Only some very small punctures.

Pronotum: 1,27 times as broad as head, slightly broader than long ($W/L = 1,27$), very convex ($W/H = 1,34$). Only some very small punctures. Holotype: length 1,02 mm, width 1,30 mm, height 0,97 mm.

Elytra: Slightly narrower than pronotum, slightly broader than long ($W/L = 1,08$), moderately convex ($W/H = 1,78$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation very superficial; punctures sparse and very small. Holotype: length 1,15 mm, width 1,25 mm, height 0,70 mm.

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

Legs: Male hind femora with very sharp tooth (fig. 95). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 75-77): Aedeagus very slender, with spiralled proximal part, lateral margins gently converging toward rounded apex, ventral piece not bifid. Parameres stout, gently narrowing toward apex.

HOLOTYPE ♂: Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2325 m, 21.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1 ♂ in AC, 1 ♂ in NMNT.

Discussion: *Agathidium honestum* n.sp. is closely related to *A. lucidum* n.sp. and *A. tenebroides* n.sp. based on the length ratio of 3rd/2nd antennal segments, which is 1 or lower; it differs by the coloration of the dorsum, by the shape of the male hind femora and by the carinate mesosternum; furthermore, it differs from the former species by the width ratio of pronotum/head.

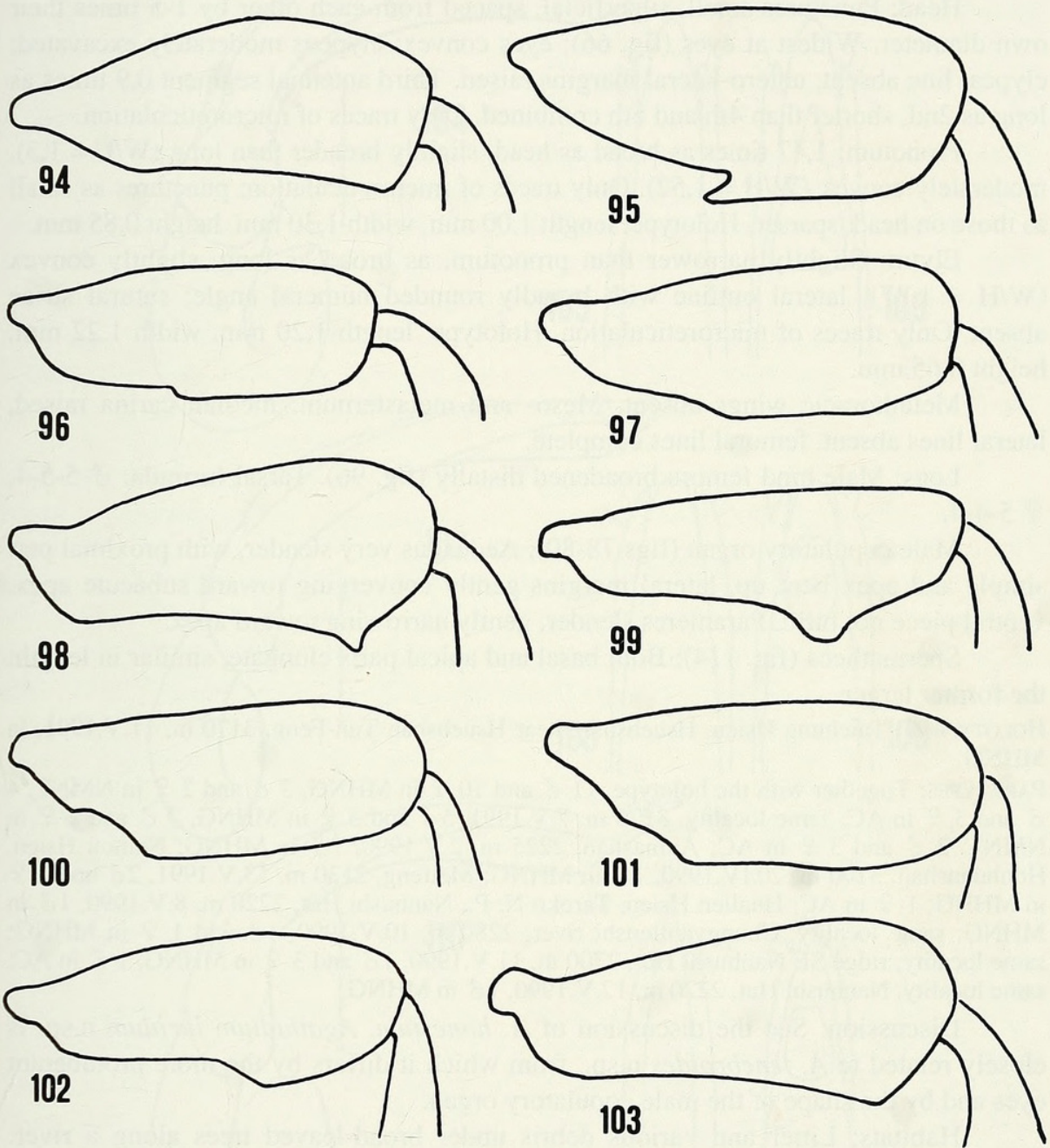
Habitat: Original broad-leaved forest, dead vegetation, fallen leaves and other debris.

Distribution: Taiwan.

Agathidium (s.str.) lucidum n.sp.

Figs. 66, 78-80, 96, 114

Length 2,6-2,9 mm (holotype ♂ 2,85 mm). Entire dorsum black; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation



FIGS 94-103

Male hind femur of: 94, *Agathidium glabricolle* n.sp.; 95, *A. honestum* n.sp.; 96, *A. lucidum* n.sp.; 97, *A. tenebroides* n.sp.; 98, *A. discretum* n.sp.; 99, *A. meifengense* n.sp.; 100, *A. tessellatum* n.sp.; 101, *A. memnonium* n.sp.; 102, *A. kaohsiungense* n.sp.; 103, *A. chalconotum* n.sp.

vague on head and pronotum; punctures very small on head and pronotum, absent on elytra.

Head: Punctures small, superficial, spaced from each other by 1-5 times their own diameter. Widest at eyes (fig. 66); eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins raised. Third antennal segment 0,9 times as long as 2nd, shorter than 4th and 5th combined. Only traces of microreticulation.

Pronotum: 1,47 times as broad as head, slightly broader than long ($W/L = 1,3$), moderately convex ($W/H = 1,52$). Only traces of microreticulation; punctures as small as those on head, sparser. Holotype: length 1,00 mm, width 1,30 mm, height 0,85 mm.

Elytra: Slightly narrower than pronotum, as broad as long, slightly convex ($W/H = 1,87$); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation. Holotype: length 1,20 mm, width 1,22 mm, height 0,65 mm.

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

Legs: Male hind femora broadened distally (fig. 96). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 78-80): Aedeagus very slender, with proximal part simple and apex bent up, lateral margins gently converging toward subacute apex, ventral piece not bifid. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 114): Both basal and apical parts elongate, similar in length; the former larger.

HOLOTYPE ♂: Taichung Hsien, Hsuehshan, near Hsuehshan Tun-Feng, 3170 m, 11.V.1991, in MHNG.

PARATYPES: Together with the holotype, 11 ♂ and 10 ♀ in MHNG, 3 ♂ and 2 ♀ in NMNT, 4 ♂ and 3 ♀ in AC; same locality, 3170 m, 7.V.1991, 5♂ and 3 ♀ in MHNG, 3 ♂ and 2 ♀ in NMNT, 3 ♂ and 3 ♀ in AC; Anmashan, 2225 m, 2.V.1990, 1♂ in MHNG; Nantou Hsien, Houhuanshan, 3100 m, 20.IV.1990, 1♂ in MHNG; Meifeng, 2130 m, 13.V.1991, 2♂ and 2 ♀ in MHNG, 1 ♀ in AC; Hualien Hsien, Taroko N. P., Nanhushi Hut, 2220 m, 8.V.1990, 1♂ in MHNG; same locality, Chungyantienshi river, 2280 m, 10.V.1990, 1♂ and 1 ♀ in MHNG; same locality, ridge SE Nanhushi Hut, 2700 m, 11.V.1990, 1♂ and 3 ♀ in MHNG, 1 ♂ in AC; same locality, Nanhushi Hut, 2220 m, 12.V.1990, 1♂ in MHNG.

Discussion: See the discussion of *A. honestum*. *Agathidium lucidum* n.sp. is closely related to *A. tenebroides* n.sp., from which it differs by the more protuberant eyes and by the shape of the male copulatory organ.

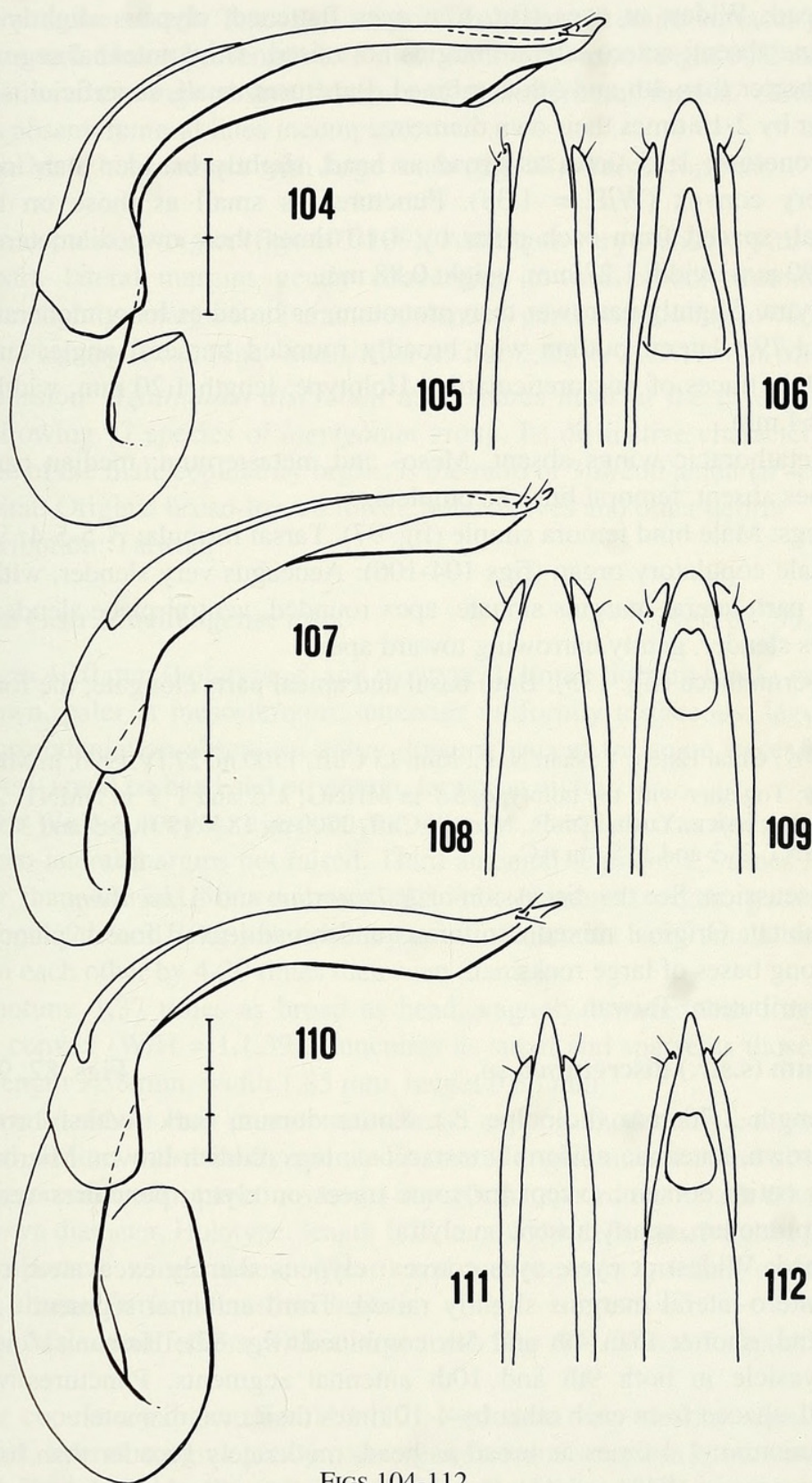
Habitats: Litter and various debris under broad-leaved trees along a river. Original broad-leaved forest, lush vegetation, debris and humus along a road. Original coniferous forest on northern slope. Open Abies forest. Original coniferous forest, rotting bark and wood, humus, moss and old mushrooms on and around fallen trees.

Distribution: Taiwan.

***Agathidium* (s.str.) *tenebroides* n.sp.**

Figs. 67, 97, 104-106, 115

Length 2,4-2,8 mm (holotype ♂ 2,70 mm). Entire dorsum reddish-brown; venter dark reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; puncturation fine and sparse on head and pronotum, absent on elytra.



FIGS 104-112

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 104-106, *Agathidium tenebroides* n.sp.; 107-109, *A. discretum* n.sp.; 110-112, *A. meifengense* n.sp.
 Scales: 1 division = 0,1 mm.

Head: Widest at eyes (fig. 67); eyes flattened; clypeus slightly excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment as long as 2nd, shorter than 4th and 5th combined. Punctures small, superficial, spaced from each other by 2-10 times their own diameter.

Pronotum: 1,35 times as broad as head, slightly broader than long ($W/L = 1,35$), very convex ($W/H = 1,38$). Punctures as small as those on head, more superficial, spaced from each other by 4-10 times their own diameter. Holotype: length 0,90 mm, width 1,22 mm, height 0,88 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1,79$); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation. Holotype: length 1,20 mm, width 1,15 mm, height 0,64 mm.

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

Legs: Male hind femora simple (fig. 97). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 104-106): Aedeagus very slender, with hook-like proximal part, lateral margins sinuate, apex rounded, ventral piece slender, not bifid. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 115): Both basal and apical parts elongate; the former longer and larger.

HOLOTYPE ♂: Chiai Hsien, Yushan N. P., Mun-Li Cliff, 1700 m, 27.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 5♂ in MHNG, 3♂ and 1♀ in NMNT, 2♂ and 2♀ in AC; Nantou Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 18.V.1991, 5♂ and 3♀ in MHNG, 3♂ in NMNT, 2♂ and 1♀ in AC.

Discussion: See the discussion of *A. honestum* and *A. lucidum*.

Habitat: Original mixed coniferous and broad-leaved forest, plant debris and humus along bases of large rocks.

Distribution: Taiwan.

Agathidium (s.str.) discretum n.sp.

Figs. 82, 98, 107-109

Length 2,70 mm (holotype ♂). Entire dorsum dark reddish-brown; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; punctures very small on head and pronotum, nearly absent on elytra.

Head: Widest at eyes; eyes convex; clypeus sharply excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,8 times as long as 2nd, shorter than 4th and 5th combined (fig. 82); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, superficial, spaced from each other by 4-10 times their own diameter.

Pronotum: 1,3 times as broad as head, moderately broader than long ($W/L = 1,41$), very convex ($W/H = 1,41$). Puncturation as that of head. Holotype: length 0,89 mm, width 1,26 mm, height 0,89 mm.

Elytra: Slightly broader than pronotum, slightly broader than long ($W/L = 1,13$), very little convex ($W/H = 2,09$); lateral outline with broadly rounded humeral

angle; sutural striae absent. Traces of microreticulation on entire surface; punctures sparse, very small. Holotype: length 1,15 mm, width 1,30 mm, height 0,62 mm.

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

Legs: Male hind femora with large tooth (fig. 98). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 107-109): Aedeagus very slender, with hook-like proximal part, lateral margins gently converging toward broadly rounded apex, ventral piece slightly emarginate. Parameres slender, gently narrowing toward apex.

HOLOTYPE ♂: Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2325 m, 21.V.1991, in MHNG.

Discussion: *Agathidium discretum* n.sp. shares most of the external features with the following 17 species of *laevigatum* group. Its distinctive character, in addition to shape of the male copulatory organ, is the ratio of 3rd/2nd antennal segments.

Habitat: Original broad-leaved forest, fallen leaves and other debris.

Distribution: Taiwan.

***Agathidium* (s.str.) meifengense** n.sp.

Figs. 83, 99, 110-112

Length 4,10 mm (holotype ♂ and paratypes). Entire dorsum black; venter dark reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum, except for some traces on elytra; punctures very small on head and pronotum, larger on elytra.

Head: Widest at eyes; eyes convex; clypeus sharply excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,5 times as long as 2nd, longer than 4th and 5th combined (fig. 83); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, superficial, spaced from each other by 4-20 times their own diameter.

Pronotum: 1,37 times as broad as head, vaguely broader than long (W/L = 1,17), very convex (W/H = 1,1,39). Punctures as small and sparse as those on head. Holotype: length 1,58 mm, width 1,85 mm, height 0,33 mm.

Elytra: Narrower than pronotum, as broad as long, moderately convex (W/H = 1,72); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation; punctures large, superficial, spaced from each other by 3-10 times their own diameter. Holotype: length 1,72 mm, width 1,78 mm, height 1,03 mm.

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

Legs: Male hind femora with a large tooth (fig. 99). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 110-112): Aedeagus very slender, with hook-like proximal part, lateral margins gently converging toward subacute apex, ventral piece deeply split. Parameres slender, gently narrowing toward apex.

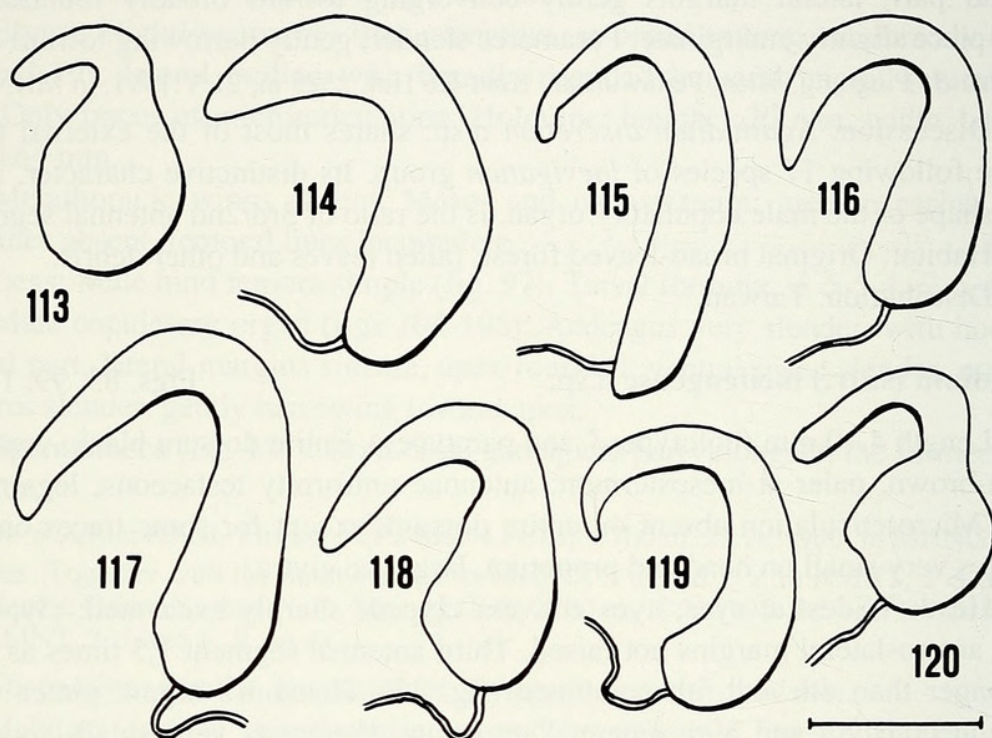
HOLOTYPE ♂: Nantou Hsien, Meifeng, 2130 m, 13.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1 ♂ in NMNT, 1 ♂ in AC; Taichung Hsien, An-mashan, 2230 m, 4.V.1990, 1 ♂ in MHNG.

Discussion: *Agathidium meifengense* n.sp. shares most external features with the following species of *laevigatum* group. Its distinctive character, in addition to the shape of the male copulatory organ, is the size.

Habitat: Original broad-leaved forest, lush vegetation, debris and humus along a road.

Distribution: Taiwan.



FIGS 113-120

Spermatheca of: 113, *Agathidium glabricolle* n.sp.; 114, *A. lucidum* n.sp.; 115, *A. tenebroides* n.sp.; 116, *A. tessellatum* n.sp.; 117, *A. memnonium* n.sp.; 118, *A. kaohsiungense* n.sp.; 119, *A. angustatum* n.sp.; 120, *A. alpestre* n.sp. Scale: 1 division = 0,1 mm.

***Agathidium* (s.str.) *tessellatum* n.sp.**

Figs. 68, 69, 100, 116, 139-141

Length 2,9-3,2 mm (holotype ♂ 3,20 mm). Entire dorsum and venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation vague on head and pronotum, superficial and uniform on elytra; puncturation fine on head and pronotum, absent on elytra.

Head: Punctures small, superficial, spaced from each other by 2-4 times their own diameter. Widest at eyes (fig. 68); eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,3 times as long as 2nd, shorter than 4th and 5th combined. Only traces of microreticulation.

Pronotum: 1,25 times as broad as head, slightly broader than long ($W/L = 1,36$), moderately convex ($W/H = 1,53$). Dorsal and lateral outlines: fig. 69. Only traces of microreticulation; punctures as small as those on head, spaced from each other by 2-5 times their own diameter. Holotype: length 1,10 mm, width 1,50 mm, height 0,98 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1,68$); lateral outline with broadly rounded humeral angle; sutural striae absent. Traces of microreticulation on entire surface. Holotype: length 1,40 mm, width 1,40 mm, height 0,83 mm.

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

Legs: Male hind femora simple (fig. 100). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 139-141): Aedeagus very slender, with proximal part hook-like and apex bent up, lateral margins sinuate, apex broadly rounded, ventral piece very small. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 116): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Taichung Hsien, Hsuehshan, near Hsuehshan Tun-Feng, 3170 m, 7.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1 ♀ in NMNT, 1 ♂ in AC.

Discussion: See the discussion of *A. discretum* and *A. meifengense*. *Agathidium tessellatum* n.sp. is remarkably similar in the external characters to the following species of *laevigatum* group. An interesting taxonomic character is the shape of the male hind femora, which are either simple or enlarged distally, or with a more or less pronounced tooth, which is curved in some instances. Based on that, *A. tessellatum* is close to *A. memnonium* n.sp., from which it differs by the size, by the ratio of 3rd/2nd antennal segments, by the ratio width/length of pronotum and by the less protuberant eyes.

Habitat: Original coniferous forest on northern slope, dead vegetation, rotting bark, wood and moss.

Distribution: Taiwan.

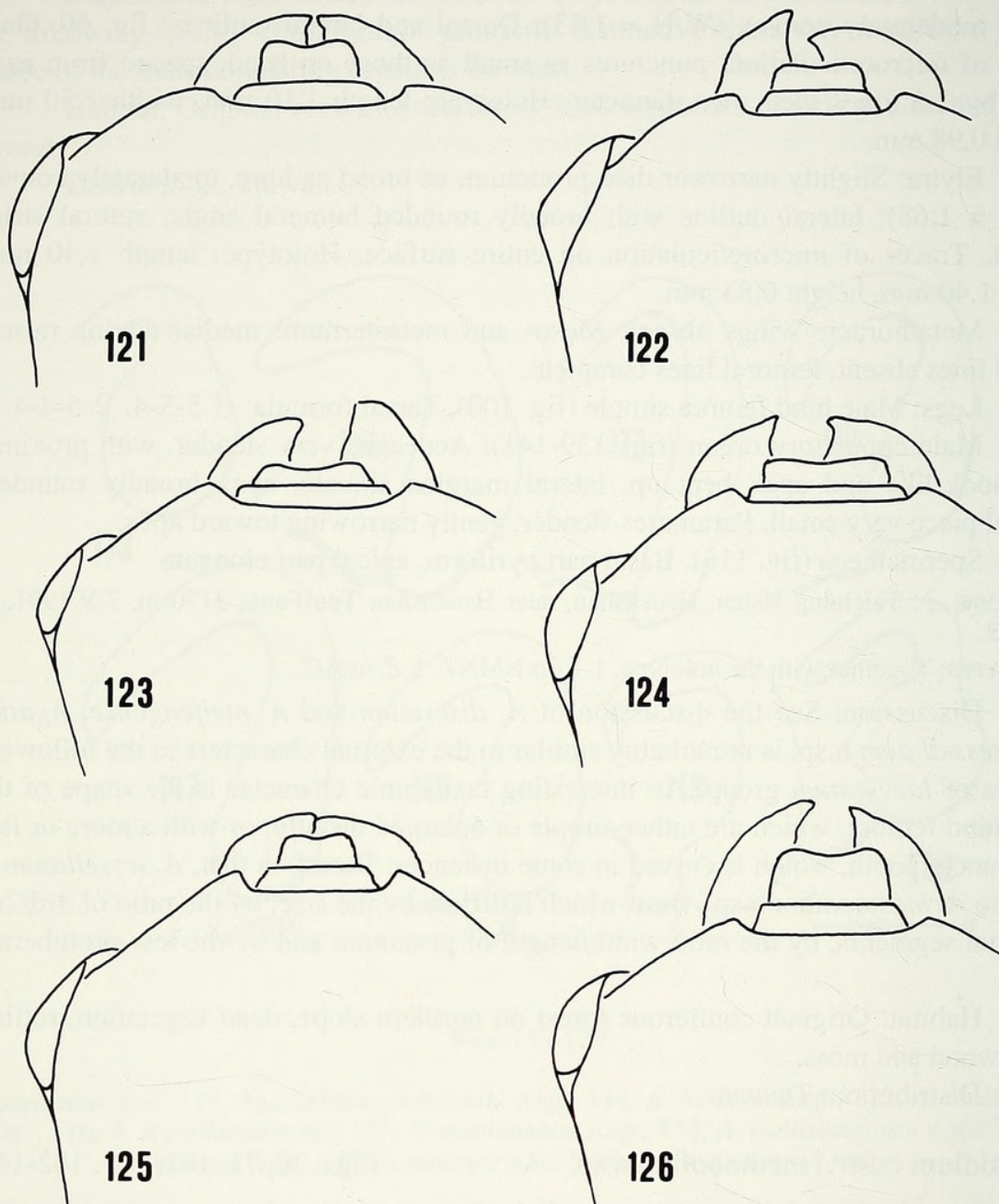
***Agathidium* (s.str.) *memnonium* n.sp.**

Figs. 70, 71, 101, 117, 142-144

Length 3,3-3,5 mm (holotype ♂ 3,45 mm). Entire dorsum reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, superficial and uniform on elytra; punctures very small on head and pronotum, absent on elytra.

Head: Widest at eyes (fig. 70); eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,5 times as long as 2nd, longer than 4th and 5th combined. Punctures very small, superficial, spaced from each other by 1-10 times their own diameter.

Pronotum: 1,31 times as broad as head, slightly broader than long ($W/L = 1,27$), very convex ($W/H = 1,47$). Dorsal and lateral outlines: fig. 71. Punctures as small as those on head, sparser, spaced from each other by 5-10 times their own diameter. Holotype: length 1,22 mm, width 1,55 mm, height 1,05 mm.



FIGS 121-126

Head of: 121, *Agathidium kaohsiungense* n.sp.; 122, *A. chalconotum* n.sp.; 123, *A. angustatum* n.sp.; 124, *A. fuliginosum* n.sp.; 125, *A. subalpinum* n.sp.; 126, *A. intricatum* n.sp.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1,71$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation superficial, uniform. Holotype: length 1,48 mm, width 1,46 mm, height 0,85 mm.

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

Legs: Male hind femora simple (fig. 101). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 142-144): Aedeagus very slender, with proximal part hook-like and apex bent up, lateral margins sinuate, apex broadly rounded, ventral piece deeply bifid. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 117): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Hualien Hsien, Taroko N. P., ridge SE Nanhushi Hut, 2700 m, 11.V.1990, in MHNG.

PARATYPES: Together with the holotype, 1 ♀ in NMNT, 1 ♂ in AC.

Discussion: See the discussion of *A. tessellatum*.

Habitat: Original coniferous forest, rotting bark and wood, humus, moss and old mushrooms on and around fallen trees.

Distribution: Taiwan.

Agathidium (s.str.) kaohsiungense n.sp.

Figs. 84, 102, 118, 121, 145-147

Length 3,0-3,1 mm (holotype ♂ 3,0 mm). Entire dorsum black; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, vague on elytra; punctures very small on head and pronotum, absent on elytra.

Head: Widest at eyes (fig. 121); eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,2 times as long as 2nd, as long as 4th and 5th combined (fig. 84); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, hardly visible.

Pronotum: 1,29 times as broad as head, moderately broader than long ($W/L = 1,4$), moderately convex ($W/H = 1,56$). Punctures as small as those on head, sparser, spaced from each other by 5-10 times their own diameter. Holotype: length 1,05 mm, width 1,47 mm, height 0,94 mm.

Elytra: Narrower than pronotum, slightly broader than long ($W/L = 1,06$), moderately convex ($W/H = 1,81$); lateral outline with broadly rounded humeral angle; sutural striae absent. Traces of microreticulation on entire surface. Holotype: length 1,30 mm, width 1,38 mm, height 0,76 mm.

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

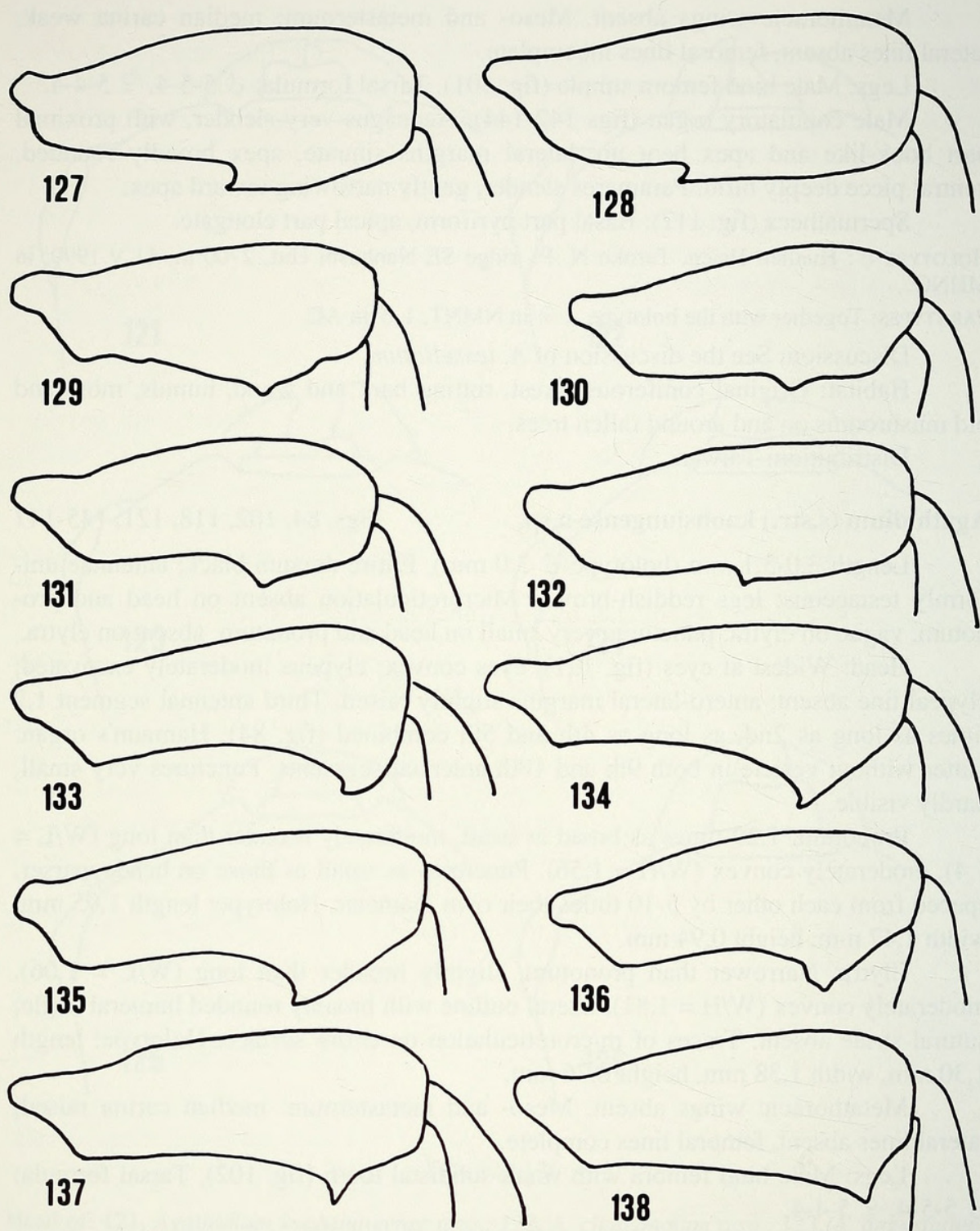
Legs: Male hind femora with small subdistal tooth (fig. 102). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 145-147): Aedeagus slender, with proximal part ring-like and apex bent up, lateral margins gently converging toward rounded apex, ventral piece slightly emarginate. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 118): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Kaohsiung Hsien, Tengchih, 1535 m, 23.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 3 ♀ in MHNG, 2 ♀ in NMNT, 2 ♀ in AC; same locality, 1610 m, 24.IV.1990, 1 ♀ in MHNG, 1 ♀ in AC; Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2325 m, 21.V.1991, 1 ♀ in MHNG.



FIGS 127-138

Male hind femur of: 127, *Agathidium angustatum* n.sp.; 128, *A. fuliginosum* n.sp.; 129, *A. alpestre* n.sp.; 130, *A. furcatum* n.sp.; 131, *A. comptum* n.sp.; 132, *A. egregium* n.sp.; 133, *A. anmashanense* n.sp.; 134, *A. subalpinum* n.sp.; 135, *A. intricatum* n.sp.; 136, *A. inustum* n.sp.; 137, *A. taichungense* n.sp.; 138, *A. exoletum* n.sp.

Discussion: *Agathidium kaohsiungense* n.sp. differs from *A. chalconotum* n.sp. by the colour of the dorsum, by the ratio of 3rd/2nd antennal segments and by the shape of the male hind femora, which are devoid of a true tooth in both species.

Habitats: Coniferous forest of *Taiwanis cryptomeroides*. Large clearing in a broad-leaved forest, dead vegetation and humus, rotting bark and wood along fallen trees and stumps.

Distribution: Taiwan.

***Agathidium* (s.str.) *chalconotum* n.sp.**

Figs. 85, 103, 122, 148-150

Length 2,85 mm (holotype ♂). Entire dorsum reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, vague on elytra; punctures very small on head and pronotum, nearly absent on elytra.

Head: Widest at eyes (fig. 122); eyes convex; clypeus slightly excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,5 times as long as 2nd, as long as 4th and 5th combined (fig. 85); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, superficial, spaced from each other by 3-10 times their own diameter.

Pronotum: 1,5 times as broad as head, slightly broader than long ($W/L = 1,37$), very convex ($W/H = 1,31$). Punctures as small as those on head, spaced from each other by 3-20 times their own diameter. Holotype: length 0,95 mm, width 1,30 mm, height 0,99 mm.

Elytra: Narrower than pronotum, slightly broader than long ($W/L = 1,05$), slightly convex ($W/H = 2,06$); lateral outline with broadly rounded humeral angle; sutural striae absent. Traces of microreticulation on entire surface; sparse, very small punctures. Holotype: length 1,21 mm, width 1,28 mm, height 0,62 mm.

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

Legs: Male hind femora with distal tooth (fig. 103). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 148-150): Aedeagus very slender, with hook-like proximal part, lateral margins gently converging toward rounded apex, ventral piece slightly emarginate. Parameres stout, gently narrowing toward apex.

HOLOTYPE ♂: Pingtung Hsien, Peitawushan, above Kuai-Ku Hut, 2325 m, 22.V.1991, in MHNG.

Discussion: See the discussion of *A.kaohsiungense*.

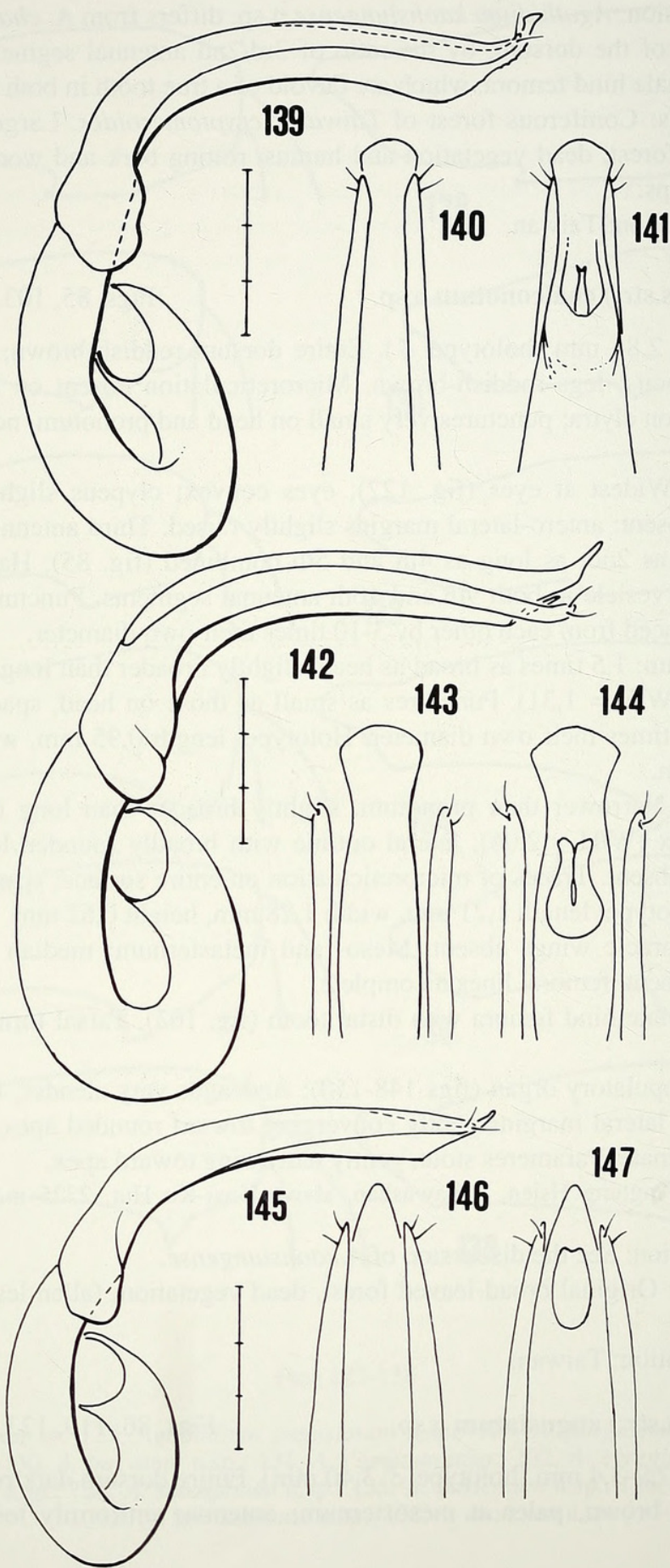
Habitat: Original broad-leaved forest, dead vegetation, fallen leaves and other debris.

Distribution: Taiwan.

***Agathidium* (s.str.) *angustatum* n.sp.**

Figs. 86, 119, 123, 127, 151-153

Length 2,9-3,4 mm (holotype ♂ 3,40 mm). Entire dorsum dark reddish-brown; venter reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs



reddish-brown. Microreticulation absent on head and pronotum, impressed on elytra; puncturation fine and sparse on head and pronotum, absent on elytra.

Head: Widest at eyes (123); eyes convex; clypeus slightly excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,6 times as long as 2nd, shorter than 4th and 5th combined (fig. 86). Punctures small, superficial, spaced from each other by 2-4 times their own diameter.

Pronotum: 1,31 times as broad as head, slightly broader than long ($W/L = 1,37$), moderately convex ($W/H = 1,54$). Puncturation as that of head. Holotype: length 1,12 mm, width 1,54 mm, height 1,00 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1,85$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation impressed, uniform, superficial in one paratype. Holotype: length 1,50 mm, width 1,50 mm, height 0,81 mm.

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

Legs: Male hind femora with a very sharp, curved tooth (fig. 127). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 151-153): Aedeagus very slender, with proximal part hook-like and apex bent up, lateral margins sinuate, apex enlarged and broadly rounded, ventral piece slightly emarginate. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 119): Both basal and apical parts elongate; the former larger.

HOLOTYPE ♂: Taichung Hsien, Hsuehshan, near Hsuehshan Tun-Feng, 3170 m, 7.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1 ♀ in NMNT, 1 ♂ in AC; same locality, 3170 m, 11.V.1991, 1 ♂ in MHNG, 1 ♀ in AC.

Discussion: *Agathidium angustatum* n.sp. shares the shape of the male hind femora, bearing a hook-like tooth, with *A. fuliginosum* n.sp. It differs from it by the size, the colour of the dorsum and by the shape of the head.

Habitat: Original coniferous forest on northern slope dead vegetation, rotting bark, wood and moss.

Distribution: Taiwan.

***Agathidium* (s.str.) *fuliginosum* n.sp.**

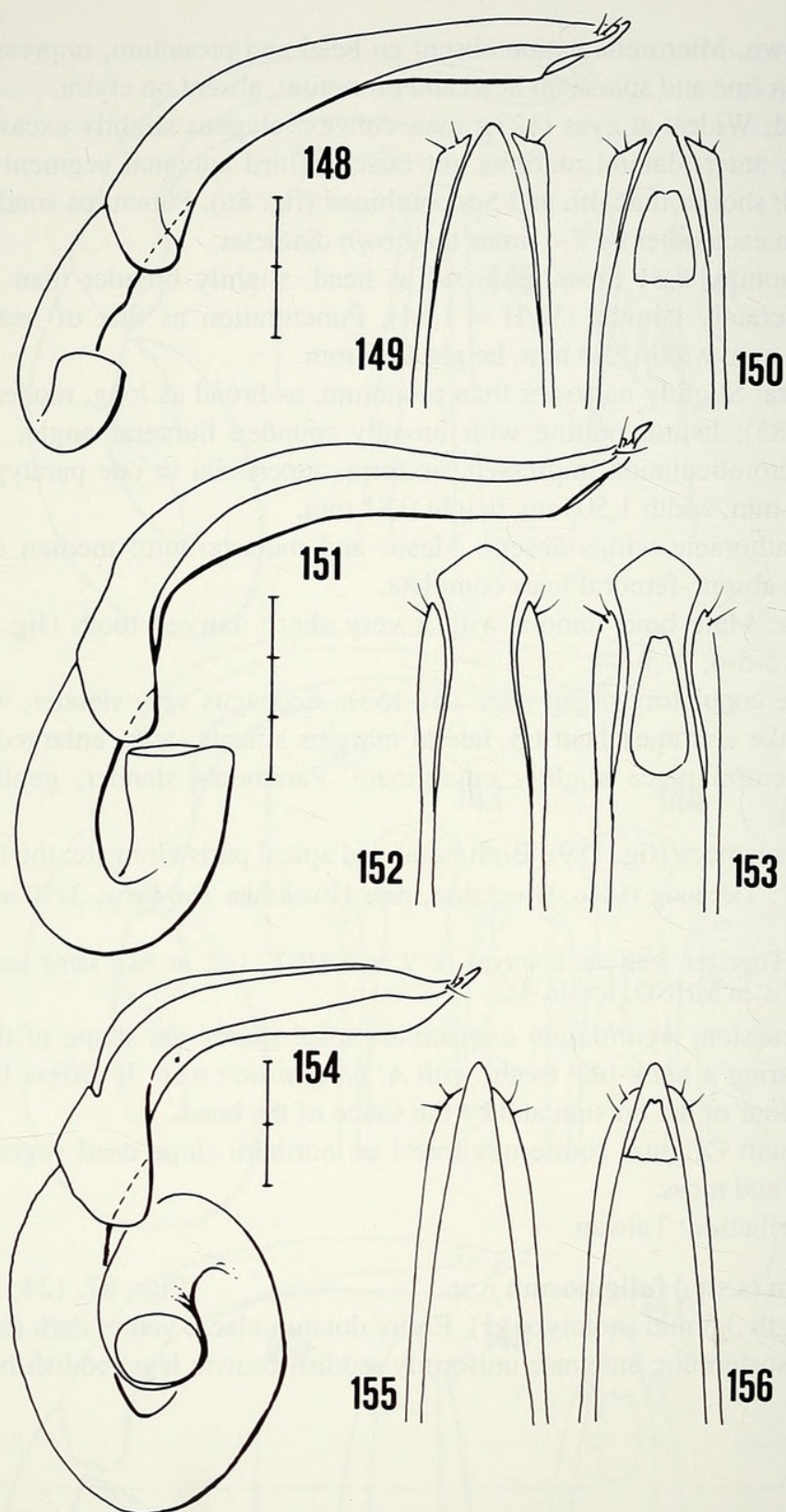
Figs. 87, 124, 128, 154-156

Length 3,5 mm (holotype ♂). Entire dorsum black; venter dark reddish-brown, paler at mesosternum; antennae uniformly reddish-brown; legs reddish-brown. Micro-

FIGS 139-147

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 139-141, *Agathidium tessellatum* n.sp.; 142-144, *A. memnonium* n.sp.; 145-147, *A. kaohsiungense* n.sp.

Scales: 1 division = 0,1 mm.



FIGS 148-156

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 148-150, *Agathidium chalconotum* n.sp.; 151-153, *A. angustatum* n.sp.; 154-156, *A. fuliginosum* n.sp.
Scales: 1 division = 0,1 mm.

reticulation absent on head and pronotum, vague on elytra; punctures very small on head and pronotum, absent on elytra.

Head: Widest at eyes (fig. 124); eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,7 times as long as 2nd, as long as 4th and 5th combined (fig. 87); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures small, superficial, spaced from each other by 6-15 times their own diameter.

Pronotum: 1,34 times as broad as head, slightly broader than long ($W/L = 1,3$), very convex ($W/H = 1,43$). Punctures as small and sparse as those on head. Holotype: length 1,23 mm, width 1,60 mm, height 1,12 mm.

Elytra: Narrower than pronotum, as broad as long, moderately convex ($W/H = 1,73$); lateral outline with broadly rounded humeral angle; sutural striae absent. Traces of microreticulation on entire surface. Holotype: length 1,50 mm, width 1,53 mm, height 0,88 mm.

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

Legs: Male hind femora with a sharp, curved tooth (fig. 128). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 154-156): Aedeagus very slender, with spiralled proximal part, lateral margins gently converging toward rounded apex, ventral piece slightly emarginate. Parameres stout, gently narrowing toward apex.

Holotype ♂: Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2325 m, 21.V.1991, in MHNG.

Discussion: See the discussion of *A. angustatum*.

Habitat: Original broad-leaved forest, fallen leaves and other debris.

Distribution: Taiwan.

Agathidium (s.str.) alpestre n.sp.

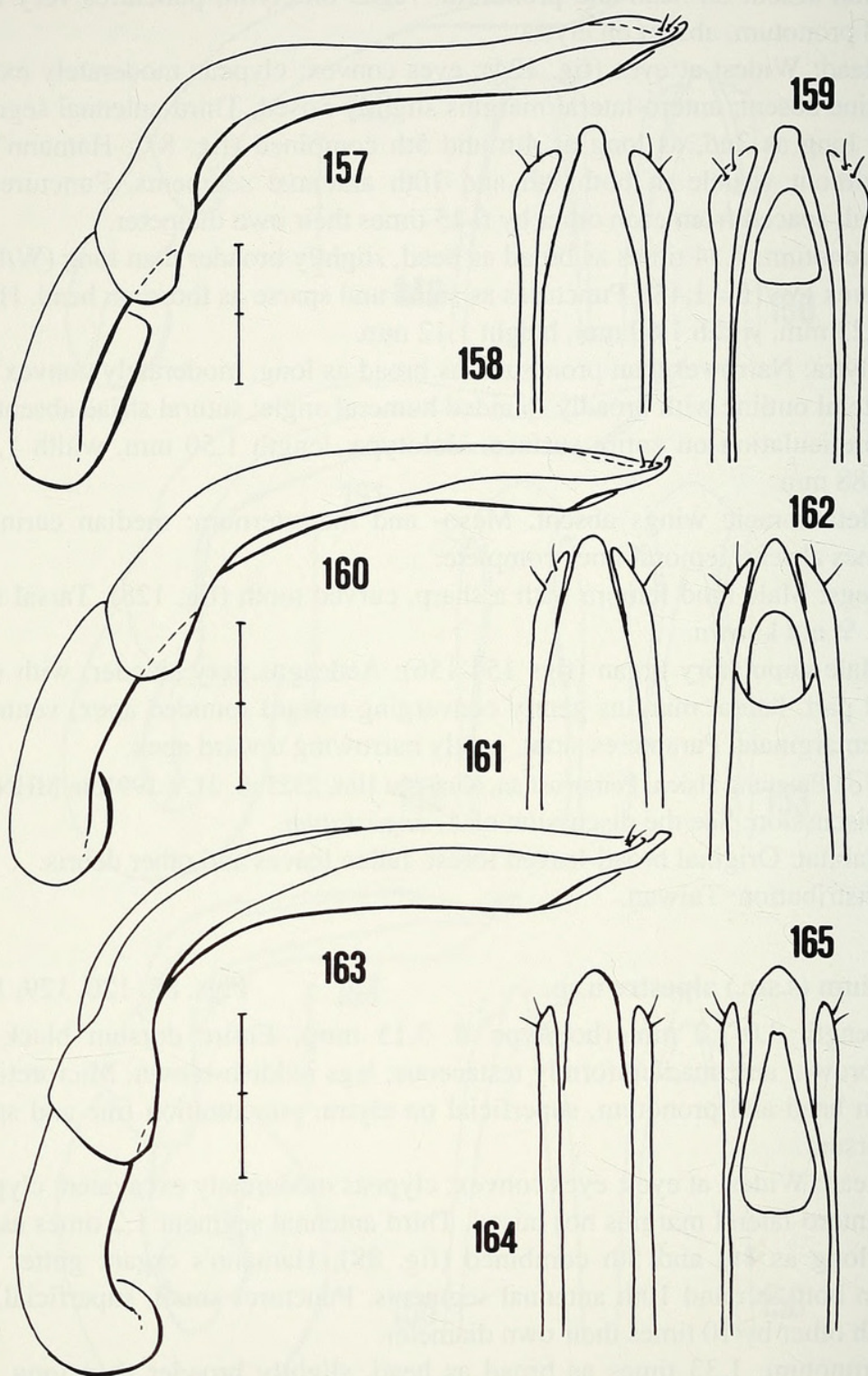
Figs. 88, 120, 129, 157-159

Length 3,0-3,2 mm (holotype ♂ 3,15 mm). Entire dorsum black; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, superficial on elytra; puncturation fine and sparse on entire dorsum.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,2 times as long as 2nd, as long as 4th and 5th combined (fig. 88); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures small, superficial, spaced from each other by 10 times their own diameter.

Pronotum: 1,33 times as broad as head, slightly broader than long ($W/L = 1,23$), very convex ($W/H = 1,43$). Puncturation as that of head. Holotype: length 1,10 mm, width 1,36 mm, height 0,95 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1,83$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation very superficial or vague; puncturation as that of head. Holotype: length 1,35 mm, width 1,32 mm, height 0,72 mm.



FIGS 157-165

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 157-159, *Agathidium alpestre* n.sp.; 160-162, *A. furcatum* n.sp.; 163-165, *A. comptum* n.sp. Scales: 1 division = 0,1 mm.

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

Legs: Male hind femora with small subdistal tooth (fig. 129). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 157-159): Aedeagus very slender, with hook-like proximal part, lateral margins gently converging toward rounded apex, ventral piece not bifid. Parameres stout, gently narrowing toward apex.

Spermatheca (fig. 120): Basal part globose, apical part elongate.

HOLOTYPE ♂: Nantou Hsien, Yushan N. P., Pai-Yun Hut, 2 Km W Pai-Yun Hut, 3350 m, 16.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1 ♂ and 1 ♀ in AC; Meifeng, 2130 m, 13.V.1991, 1 ♂ and 2 ♀ in MHNG, 1 ♀ in NMNT.

Discussion: *Agathidium alpestre* n.sp. shares with *A. furcatum* n.sp., *A. compactum* n.sp. and *A. egregium* n.sp., the presence of a comparatively small subdistal tooth on the male hind femora; in addition to the shape of the male copulatory organ, the distinctive features of *A. alpestre* are the size and the colour of dorsum.

Habitats: Original broad-leaved forest, lush vegetation, debris and humus along a road. Original *Abies* forest, rotting bark and wood along fallen trees.

Distribution: Taiwan.

***Agathidium* (s.str.) *furcatum* n.sp.**

Figs. 89, 130, 160-162

Length 2,60 mm (holotype ♂). Entire dorsum reddish-brown; venter reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, superficial on elytra; punctures very small on head and pronotum, absent on elytra.

Head: Widest at eyes; eyes convex; clypeus sharply excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,1 times as long as 2nd, as long as 4th and 5th combined (fig. 89); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Only some very small punctures.

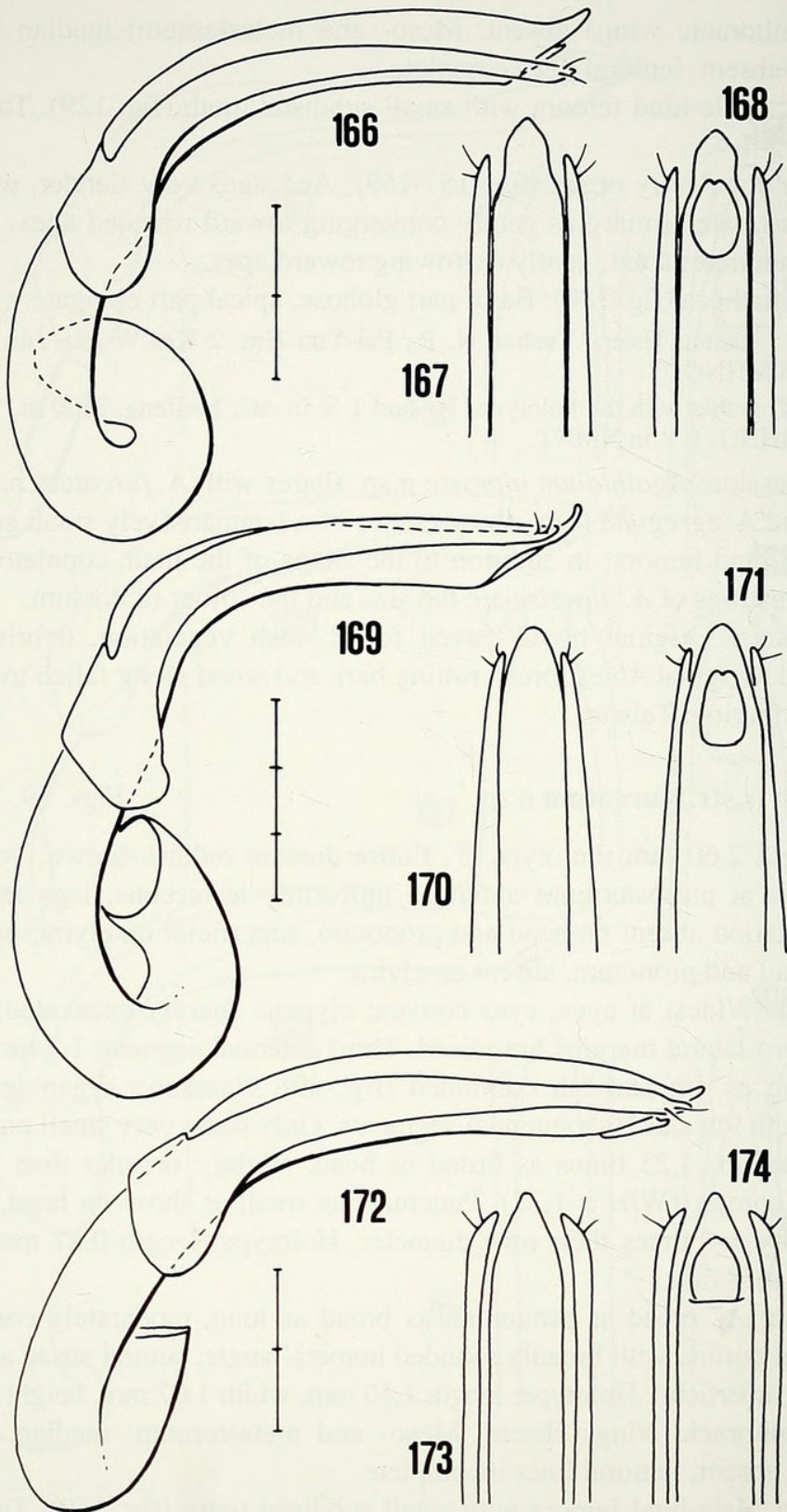
Pronotum: 1,23 times as broad as head, slightly broader than long (W/L = 1,23), very convex (W/H = 1,37). Punctures as small as those on head, spaced from each other by 1-6 times their own diameter. Holotype: length 0,87 mm, width 1,07 mm, height 0,78 mm.

Elytra: As broad as pronotum, as broad as long, moderately convex (W/H = 1,84); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation superficial. Holotype: length 1,10 mm, width 1,07 mm, height 0,58 mm.

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

Legs: Male hind femora with small subdistal tooth (fig. 130). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 160-162): Aedeagus very slender, with hook-like proximal part, lateral margins gently converging toward rounded apex, ventral piece not bifid. Parameres stout, gently narrowing toward apex.



FIGS 166-174

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 166-168, *Agathidium egregium* n.sp.; 169-171, *A. anmashanense* n.sp.; 172-174, *A. subalpinum* n.sp.
Scales: 1 division = 0,1 mm.

Holotype ♂: Kaohsiung Hsien, Tengchih, 1535 m, 23.IV.1990, in MHNG.

Discussion: See the discussion of *A. alpestre*. *Agathidium furcatum* n.sp. differs from *A. comptum* n.sp. and *A. egregium* n.sp. by the ratio of 3rd/2nd antennal segments and by the shape of the parameres.

Habitat: Coniferous forest of *Taiwania cryptomeroides*, fallen twigs, humus and other debris, mainly along fallen trees.

Distribution: Taiwan.

***Agathidium* (s.str.) *comptum* n.sp.**

Figs. 90, 131, 163-165, 181

Length 2,6-2,7 mm (holotype ♂ 2,65 mm). Entire dorsum dark reddish-brown or black; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, superficial or vague on elytra; punctures very small on entire dorsum.

Head: Widest at eyes; eyes convex; clypeus slightly excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,2 times as long as 2nd, shorter than 4th and 5th combined (fig. 90); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Only traces of microreticulation. Punctures very small, superficial, spaced from each other by 3-10 times their own diameter.

Pronotum: 1,35 times as broad as head, slightly broader than long ($W/L = 1,3$), very convex ($W/H = 1,3$). Punctures as small as those on head. Holotype: length 0,88 mm, width 1,15 mm, height 0,88 mm.

Elytra: As broad as pronotum, as broad as long, moderately convex ($W/H = 1,61$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation very superficial or vague on entire surface; punctures as small as those on head. Holotype: length 1,15 mm, width 1,10 mm, height 0,68 mm.

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

Legs: Male hind femora with sharp sudistal tooth (fig. 131). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 163-165): Aedeagus very slender, with hook-like proximal part, lateral margins sinuate, gently converging toward rounded apex, ventral piece very slender, slightly emarginate. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 181): Both basal and apical parts elongate; the former larger.

HOLOTYPE ♂: Nantou Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 13.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1 ♀ in MHNG, 1 ♀ in NMNT; Kaohsiung Hsien, Tengchih, 1700-1800 m, 24.IV.1990, 1 ♂ and 1 ♀ in AC.

Discussion: See the discussion of *A. alpestre* and *A. furcatum*. *Agathidium egregium* n.sp. differs from *A. comptum* n.sp. by the presence of the traces of microreticulation on both the head and pronotum, and by the very small punctures on the elytra.

Habitat: Original broad-leaved forest, litter and plant debris.

Distribution: Taiwan.

Agathidium (s.str.) egregium n.sp.

Figs. 132, 166-168

Length 2,50 mm (holotype ♂). Entire dorsum dark reddish-brown; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation vague on head, superficial on elytra; punctures very small only on pronotum.

Head: Widest at eyes; eyes convex; clypeus slightly excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,2 times as long as 2nd, longer than 4th and 5th combined. Only traces of microreticulation.

Pronotum: 1,33 times as broad as head, moderately broader than long ($W/L = 1,43$), moderately convex ($W/H = 1,53$). Punctures very small, superficial, spaced from each other by 2-10 times their own diameter. Holotype: length 0,80 mm, width 1,15 mm, height 0,75 mm.

Elytra: As broad as pronotum, as broad as long, slightly convex ($W/H = 1,88$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation very superficial. Holotype: length 1,10 mm, width 1,15 mm, height 0,61 mm.

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

Legs: Male hind femora with small subdistal tooth (fig. 132). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 166-168): Aedeagus slender, with ring-like proximal part, lateral margins sinuate, abruptly converging toward rounded apex, ventral piece slightly emarginate. Parameres slender, gently narrowing toward apex.

HOLOTYPE ♂: Hualien Hsien, Taroko N. P., Nanhushi Hut, 2220 m, 12.V.1990, in MHNG.

Discussion: See the discussion of *A. alpestre*, *A. furcatum* and *A. comptum*.

Habitat: Original coniferous forest, rotting bark, wood and various debris near bases of large trees.

Distribution: Taiwan.

Agathidium (s.str.) anmashanense n.sp.

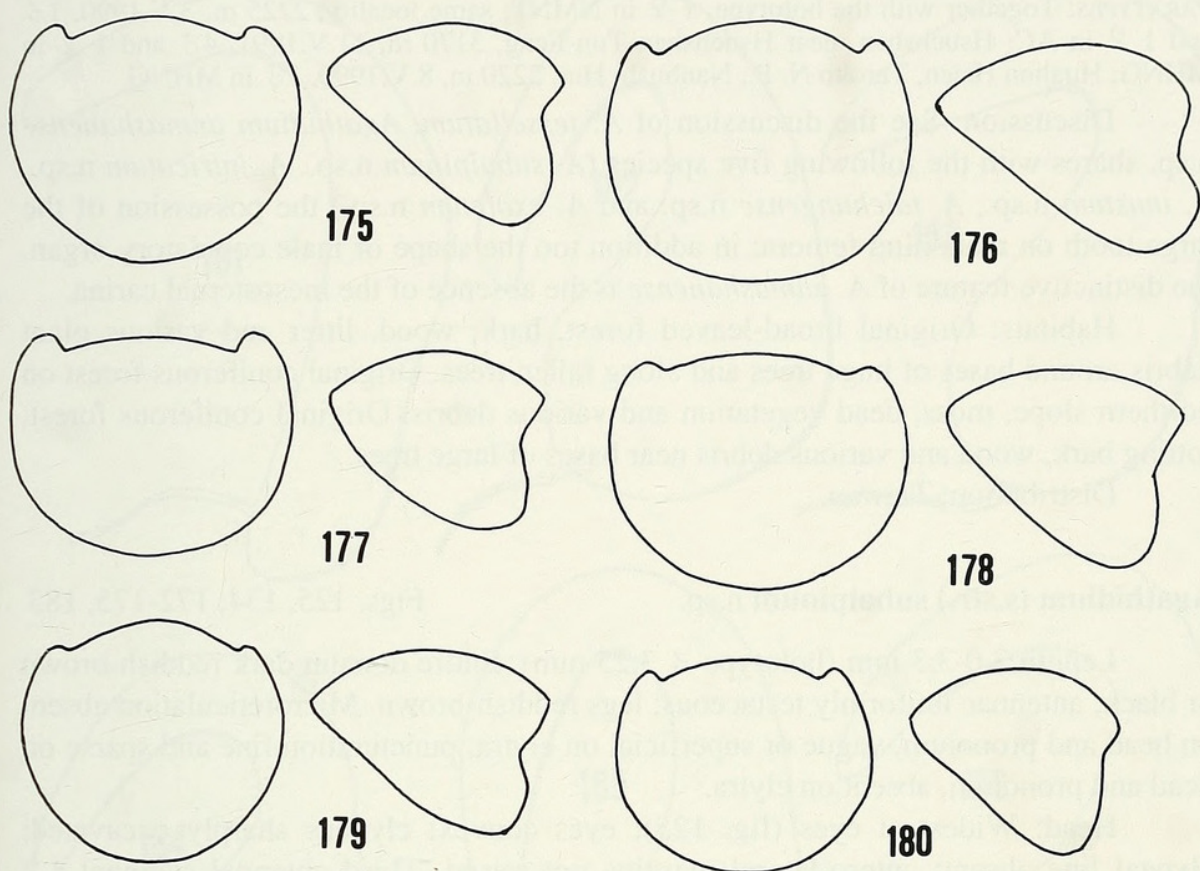
Figs. 133, 169-171, 182

Length 3,1-3,4 mm (holotype ♂ 3,40 mm). Entire dorsum black; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, vague on elytra; punctures very small on entire dorsum.

Head: Widest at eyes; eyes very convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,2 times as long as 2nd, as long as 4th and 5th combined; Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, hardly visible.

Pronotum: 1,28 times as broad as head, slightly broader than long ($W/L = 1,31$), moderately convex ($W/H = 1,55$). Punctures as small as those on head, superficial, spaced from each other by 5-15 times their own diameter. Holotype: length 1,22 mm, width 1,60 mm, height 1,07 mm.

Elytra: As broad as pronotum, slightly broader than long ($W/L = 1,08$), slightly convex ($W/H = 2,07$); lateral outline with broadly rounded humeral angle; sutural



FIGS 175-180

Pronotum (dorsal and lateral outline) of: 175, *Agathidium subalpinum* n.sp.; 176, *A. intricatum* n.sp.; 177, *A. taichungense* n.sp.; 178, *A. exoletum* n.sp.; 179, *A. fuscum* n.sp.; 180, *A. lunatum* n.sp.

striae absent. Traces of microreticulation on entire surface; punctures as small as those on head, spaced from each other by 2-20 times their own diameter. Holotype: length 1,47 mm, width 1,60 mm, height 0,77 mm.

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

Legs: Male hind femora with a sharp distal tooth (fig. 133). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 169-171): Aedeagus slender, with ring-like proximal part, lateral margins parallel and then abruptly converging toward rounded apex, ventral piece slightly emarginate. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 182): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Taichung Hsien, Anmashan, 2225 m, 2.V.1990, in MHNG.

PARATYPES: Together with the holotype, 1 ♀ in NMNT; same locality, 2225 m, 3.V.1990, 1 ♂ and 1 ♀ in AC; Hsuehshan, near Hsuehshan Tun-Feng, 3170 m, 11.V.1991, 4 ♂ and 1 ♀ in MHNG; Hualien Hsien, Taroko N. P., Nanhushi Hut, 2220 m, 8.V.1990, 1 ♂ in MHNG.

Discussion: See the discussion of *A. tessellatum*. *Agathidium anmashanense* n.sp. shares with the following five species (*A. subalpinum* n.sp., *A. intricatum* n.sp., *A. inustum* n.sp., *A. taichungense* n.sp. and *A. exoletum* n.sp.) the possession of the large tooth on male hind femora; in addition too the shape of male copulatory organ, the distinctive feature of *A. anmashanense* is the absence of the mesosternal carina.

Habitats: Original broad-leaved forest, bark, wood, litter and various plant debris around bases of huge trees and along fallen trees. Original coniferous forest on northern slope, moss, dead vegetation and various debris. Original coniferous forest, rotting bark, wood and various debris near bases of large trees.

Distribution: Taiwan.

***Agathidium* (s.str.) *subalpinum* n.sp.**

Figs. 125, 134, 172-175, 183

Length 3,0-3,3 mm (holotype ♂ 3,25 mm). Entire dorsum dark reddish-brown or black; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, vague or superficial on elytra; puncturation fine and sparse on head and pronotum, absent on elytra.

Head: Widest at eyes (fig. 125); eyes convex; clypeus sharply excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,2 times as long as 2nd, longer than 4th and 5th combined. Punctures very small, hardly visible.

Pronotum: 1,31 times as broad as head, slightly broader than long ($W/L = 1,18$), very convex ($W/H = 1,42$). Dorsal and lateral outlines: fig. 175. Punctures as small as those on head. Holotype: length 1,25 mm, width 1,48 mm, height 1,04 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1,82$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation very superficial or vague on entire surface; puncturation absent, except for some very small punctures. Holotype: length 1,35 mm, width 1,42 mm, height 0,78 mm.

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

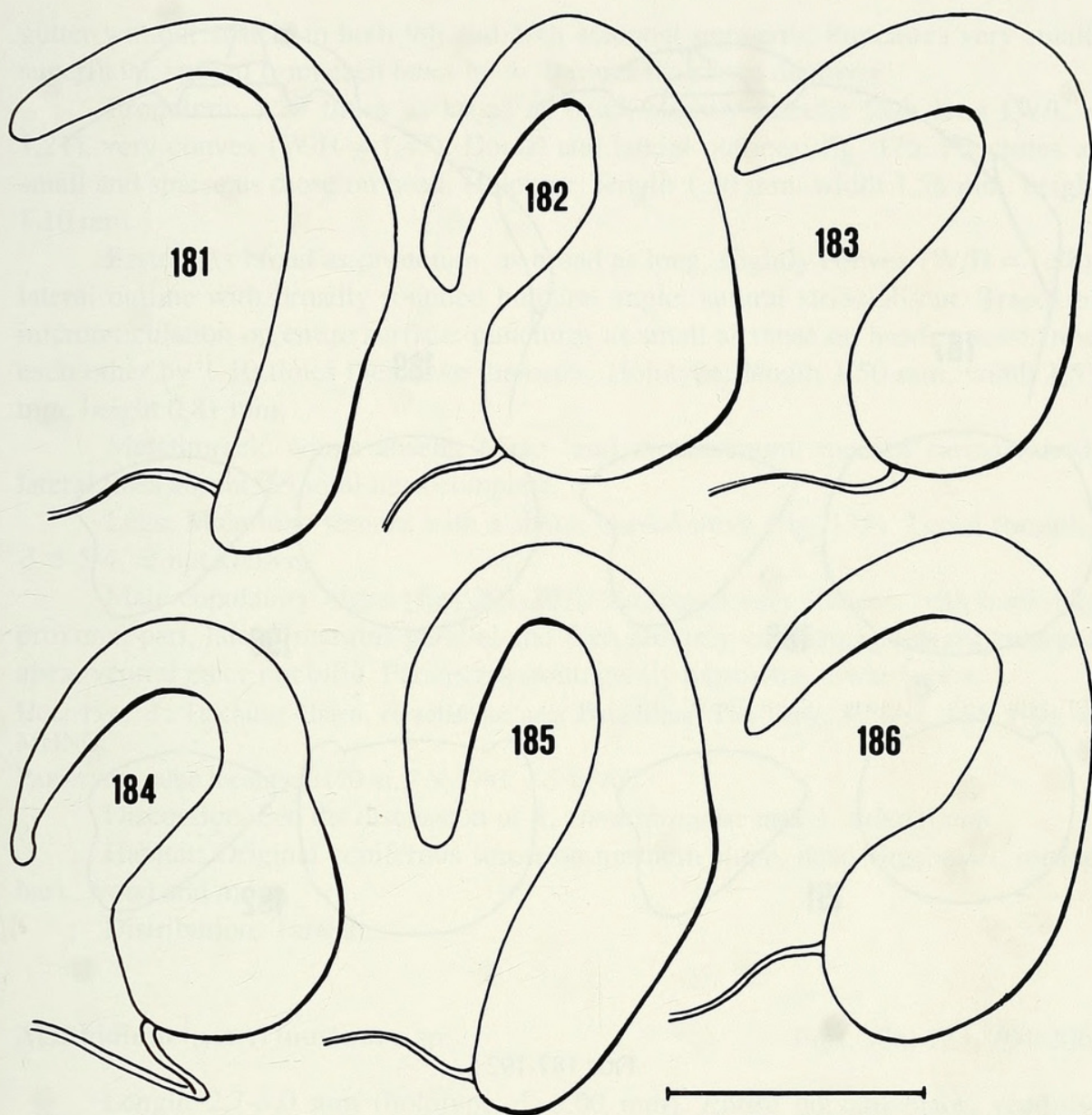
Legs: Male hind femora with a sharp distal tooth (fig. 134). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 172-174): Aedeagus very slender, with hook-like proximal part, lateral margins parallel and then abruptly converging toward rounded apex, ventral piece not bifid. Parameres stout, gently narrowing toward apex.

Spermatheca (fig. 183): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Nantou Hsien, Houhuanshan, 3100 m, 20.IV.1990, in MHNG.

PARATYPES: Taichung Hsien, Hsuehshan, above Shan-Liu Gieu Hut, 3220 m, 7.V.1991, 1 ♂ in AC; same locality, near Hsuehshan Tun-Feng, 3170 m, 11.V.1991, 1 ♂ in MHNG, 1 ♀ in AC; Chiai Hsien, Yushan N. P., Mun-Li Cliff, 1700 m, 27.IV.1990, 1 ♂ in NMNT.

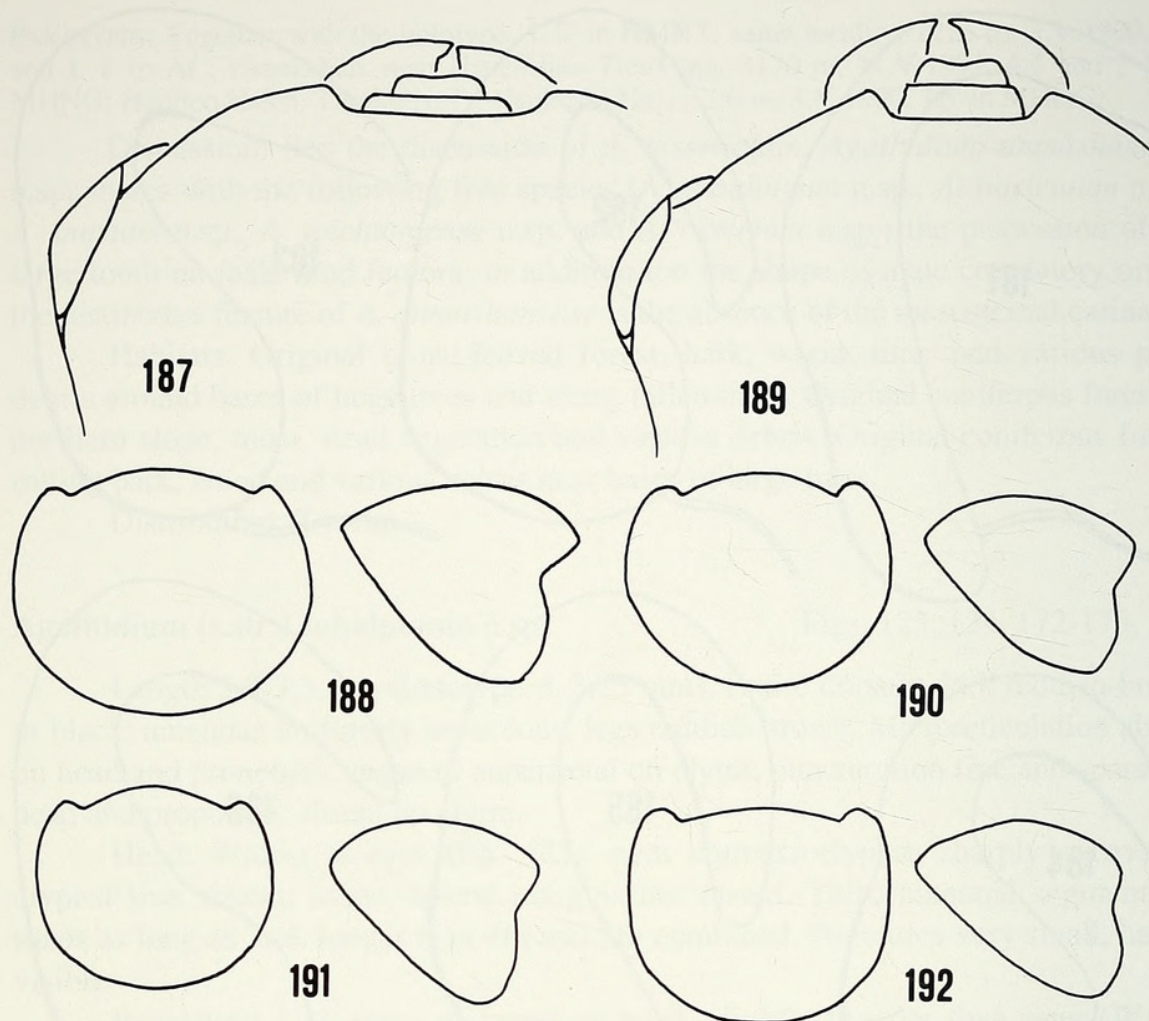


FIGS 181-186

Spermatheca of: 181, *Agathidium comptum* n.sp.; 182, *A. anmashanense* n.sp.; 183, *A. subalpinum* n.sp.; 184, *A. inustum* n.sp.; 185, *A. taichungense* n.sp.; 186, *A. exoletum* n.sp. Scale: 1 division = 0,1 mm.

Discussion: See the discussion of *A. anmashanense*. *Agathidium subalpinum* n.sp. differs from *A. intricatum* n.sp. by the size, the shape of the head, by the more enlarged male tarsi and by the absence of punctures on the elytra. The male copulatory organ is distinctive. *Agathidium subalpinum* shares with *A. intricatum* the shape of the pronotum and differs in this feature from *A. inustum* n.sp., *A. taichungense* n.sp. and *A. exoletum* n.sp.

Habitats: Original *Abies* forest, grasses and other vegetation, humus and various debris. Original coniferous forest on northern slope. Original mixed coniferous and broad-leaved forest, moss, litter and rotting bark and wood around huge trees.



FIGS 187-192

Head and/or pronotum (dorsal and lateral view) of: 187-188, *Agathidium umbratum* n.sp.; 189-190, *A. fenestratum* n.sp.; 191, *A. splendidulum* n.sp.; 192, *A. melanocephalum* n.sp.

Distribution: Taiwan.

***Agathidium* (s.str.) *intricatum* n.sp.**

Figs. 91, 126, 135, 176, 201-203

Length 3,55 mm (holotype ♂). Entire dorsum black; venter reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, vague on elytra; puncturation fine and sparse on entire dorsum.

Head: Widest at eyes (fig. 126); eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,2 times as long as 2nd, as long as 4th and 5th combined (fig. 91); Hamann's organ:

gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, superficial, spaced from each other by 4-10 times their own diameter.

Pronotum: 1,29 times as broad as head, slightly broader than long ($W/L = 1,21$), very convex ($W/H = 1,43$). Dorsal and lateral outlines: fig. 176. Punctures as small and sparse as those on head. Holotype: length 1,30 mm, width 1,58 mm, height 1,10 mm.

Elytra: As broad as pronotum, as broad as long, slightly convex ($W/H = 1,88$); lateral outline with broadly rounded humeral angle; sutural striae absent. Traces of microreticulation on entire surface; punctures as small as those on head, spaced from each other by 1-10 times their own diameter. Holotype: length 1,50 mm, width 1,53 mm, height 0,81 mm.

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

Legs: Male hind femora with a sharp, curved tooth (fig. 135). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 201-203): Aedeagus very slender, with hook-like proximal part, lateral margins parallel and then abruptly converging toward enlarged apex, ventral piece not bifid. Parameres stout, gently narrowing toward apex.

HOLOTYPE ♂: Taichung Hsien, Hsuehshan, near Hsuehshan Tun-Feng, 3170 m, 11.V.1991, in MHNG.

PARATYPE: same locality, 3170 m, 7.V.1991, 1♂ in AC.

Discussion: See the discussion of *A. anmashanense* and *A. subalpinum*.

Habitat: Original coniferous forest on northern slope, dead vegetation, rotting bark, wood and moss.

Distribution: Taiwan.

Agathidium (s.str.) inustum n.sp.

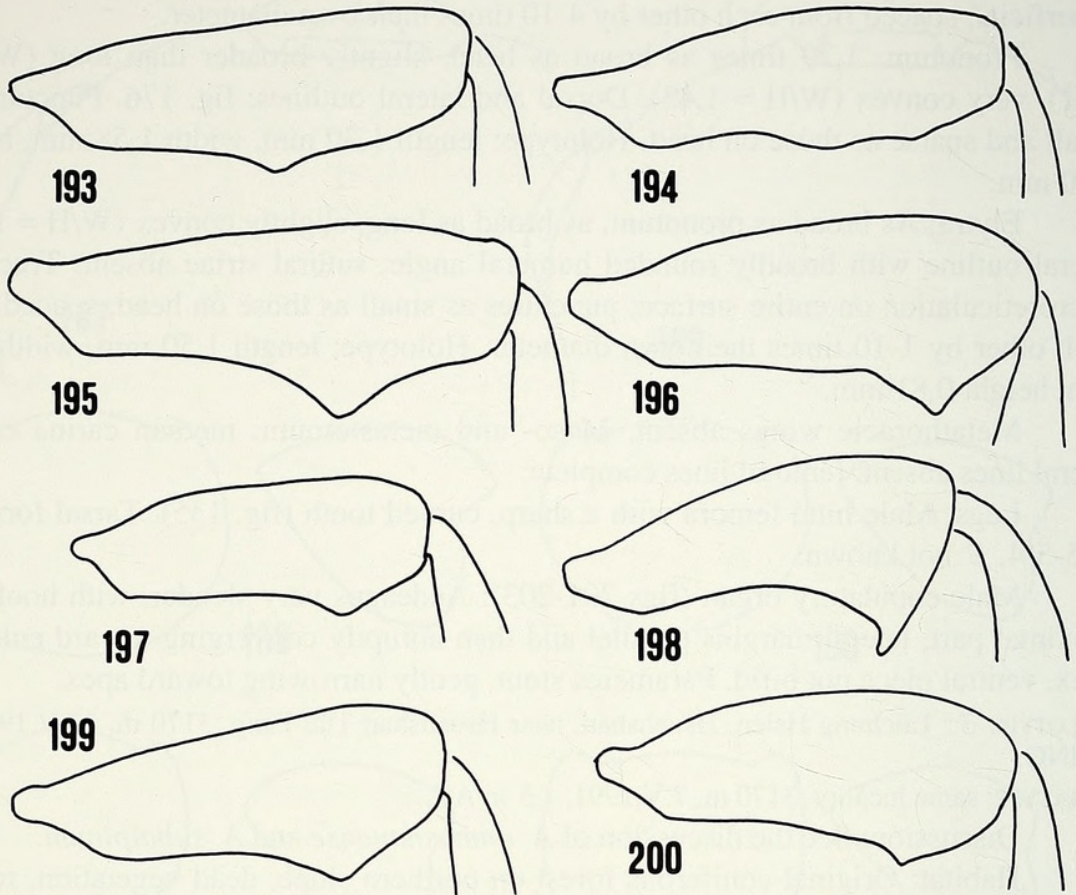
Figs. 136, 184, 204-206

Length 2,7-3,0 mm (holotype ♂ 3,00 mm). Entire dorsum black, reddish-brown along the suture; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, superficial or vague on elytra; punctures very small on head and pronotum, absent on elytra.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,6 times as long as 2nd, longer than 4th and 5th combined. Punctures very small, hardly visible.

Pronotum: 1,33 times as broad as head, somewhat broader than long ($W/L = 1,27$), very convex ($W/H = 1,37$). Punctures as small as those on head. Holotype: length 1,10 mm, width 1,40 mm, height 1,02 mm.

Elytra: Slightly narrower than pronotum, slightly broader than long ($W/L = 1,07$), moderately convex ($W/H = 1,77$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation very superficial or vague on entire surface; puncturation absent, except for some very small punctures. Holotype: length 1,26 mm, width 1,35 mm, height 0,76 mm.



FIGS 193-200

Male hind femur of: 193, *Agathidium fuscum* n.sp.; 194, *A. lunatum* n.sp.; 195, *A. umbratum* n.sp.; 196, *A. fenestratum* n.sp.; 197, *A. asphaltinum* n.sp.; 198, *A. splendidulum* n.sp.; 199, *A. melanocephalum* n.sp.; 200, *A. chiaicum* n.sp.

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

Legs: Male hind femora with sharp tooth (fig. 136). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

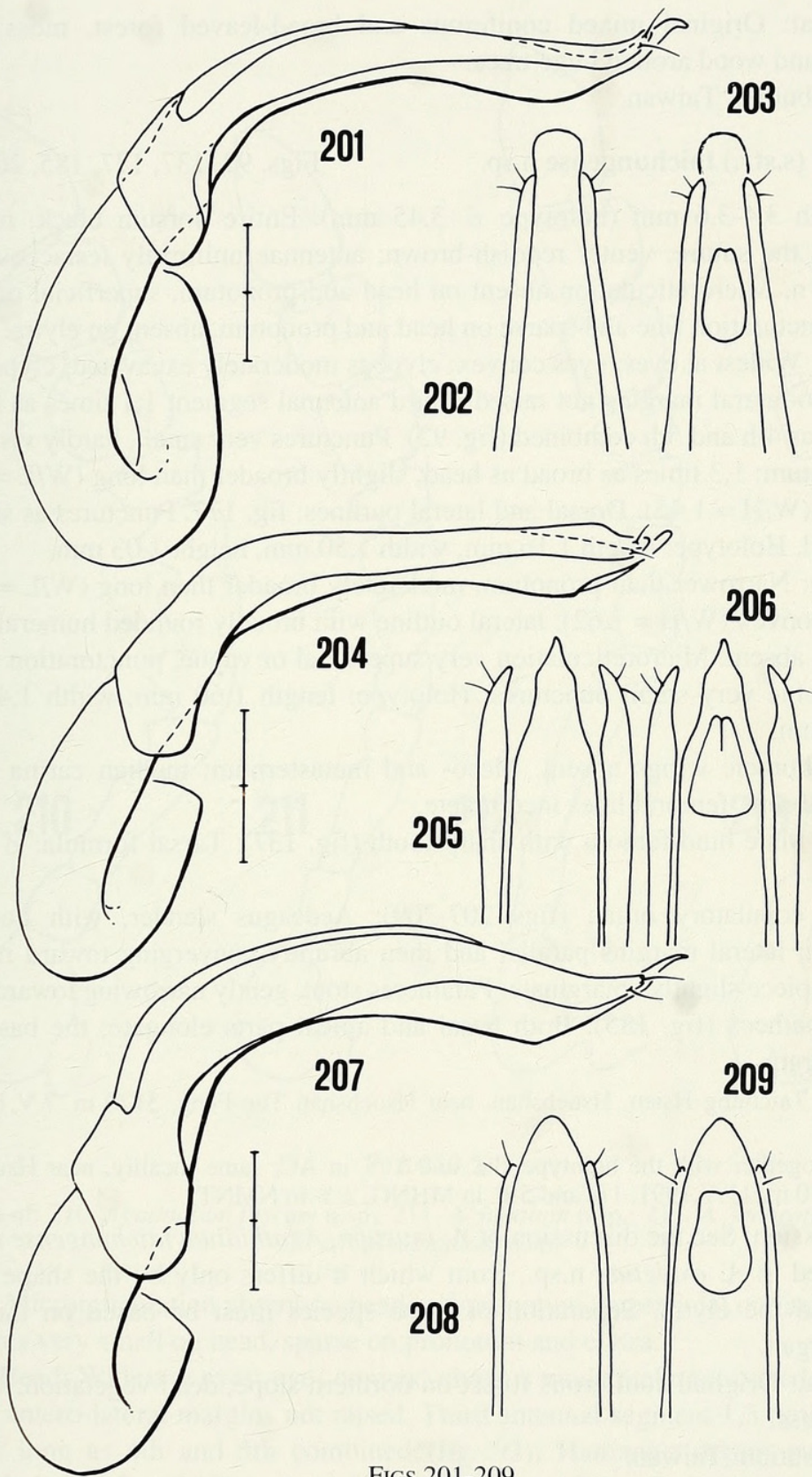
Male copulatory organ (figs 204-206): Aedeagus very slender, with hook-like proximal part, lateral margins parallel and then sinuously converging toward subacute apex, ventral piece split. Parameres stout, sinuously narrowing toward apex.

Spermatheca (fig. 184): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Chiai Hsien, Yushan N. P., Mun-Li Cliff, 1700 m, 27.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 3♂ and 3♀ in MHNG, 2♀ in NMNT, 2♂ and 1♀ in AC; Nantou Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 13.V.1991, 2♂ and 1♀ in MHNG.

Discussion: See the discussion of *A. subalpinum*. *Agathidium inustum* n.sp. differs from *A. taichungense* n.sp. and *A. exoletum* n.sp. by the size and by the length ratio of 3rd/2nd antennal segments.



FIGS 201-209

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 201-203, *Agathidium intricatum* n.sp.; 204-206, *A. inustum* n.sp.; 207-209, *A. taichungense* n.sp. Scales: 1 division = 0,1 mm.

Habitat: Original mixed coniferous and broad-leaved forest, moss, litter, rotting bark and wood around huge trees.

Distribution: Taiwan.

Agathidium (s.str.) taichungense n.sp.

Figs. 92, 137, 177, 185, 207-209

Length 3,4-3,6 mm (holotype ♂ 3,45 mm). Entire dorsum black, reddish-brown along the suture; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, superficial or vague on elytra; puncturation fine and sparse on head and pronotum, absent on elytra.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,1 times as long as 2nd, as long as 4th and 5th combined (fig. 92). Punctures very small, hardly visible.

Pronotum: 1,3 times as broad as head, slightly broader than long ($W/L = 1,29$), very convex ($W/H = 1,45$). Dorsal and lateral outlines: fig. 177. Punctures as small as those on head. Holotype: length 1,16 mm, width 1,50 mm, height 1,03 mm.

Elytra: Narrower than pronotum, moderately broader than long ($W/L = 1,87$), moderately convex ($W/H = 1,62$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation very superficial or vague; puncturation absent, except for some very small punctures. Holotype: length 1,60 mm, width 1,40 mm, height 0,86 mm.

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

Legs: Male hind femora with sharp tooth (fig. 137). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 207-209): Aedeagus slender, with hook-like proximal part, lateral margins parallel and then abruptly converging toward rounded apex, ventral piece slightly emarginate. Parameres stout, gently narrowing toward apex.

Spermatheca (fig. 185): Both basal and apical parts elongate; the basal part longer and larger.

HOLOTYPE ♂: Taichung Hsien, Hsuehshan, near Hsuehshan Tun-Feng, 3170 m, 7.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1♂ and 1♀ in AC; same locality, near Hsuehshan Tun-Feng, 3170 m, 11.V.1991, 1♂ and 5♀ in MHNG, 2♀ in NMNT.

Discussion: See the discussion of *A. inustum*. *Agathidium taichungense* n.sp. is closely related to *A. exoletum* n.sp., from which it differs only by the shape of the pronotum and the elytra. Separation of these species must be based on the male copulatory organ.

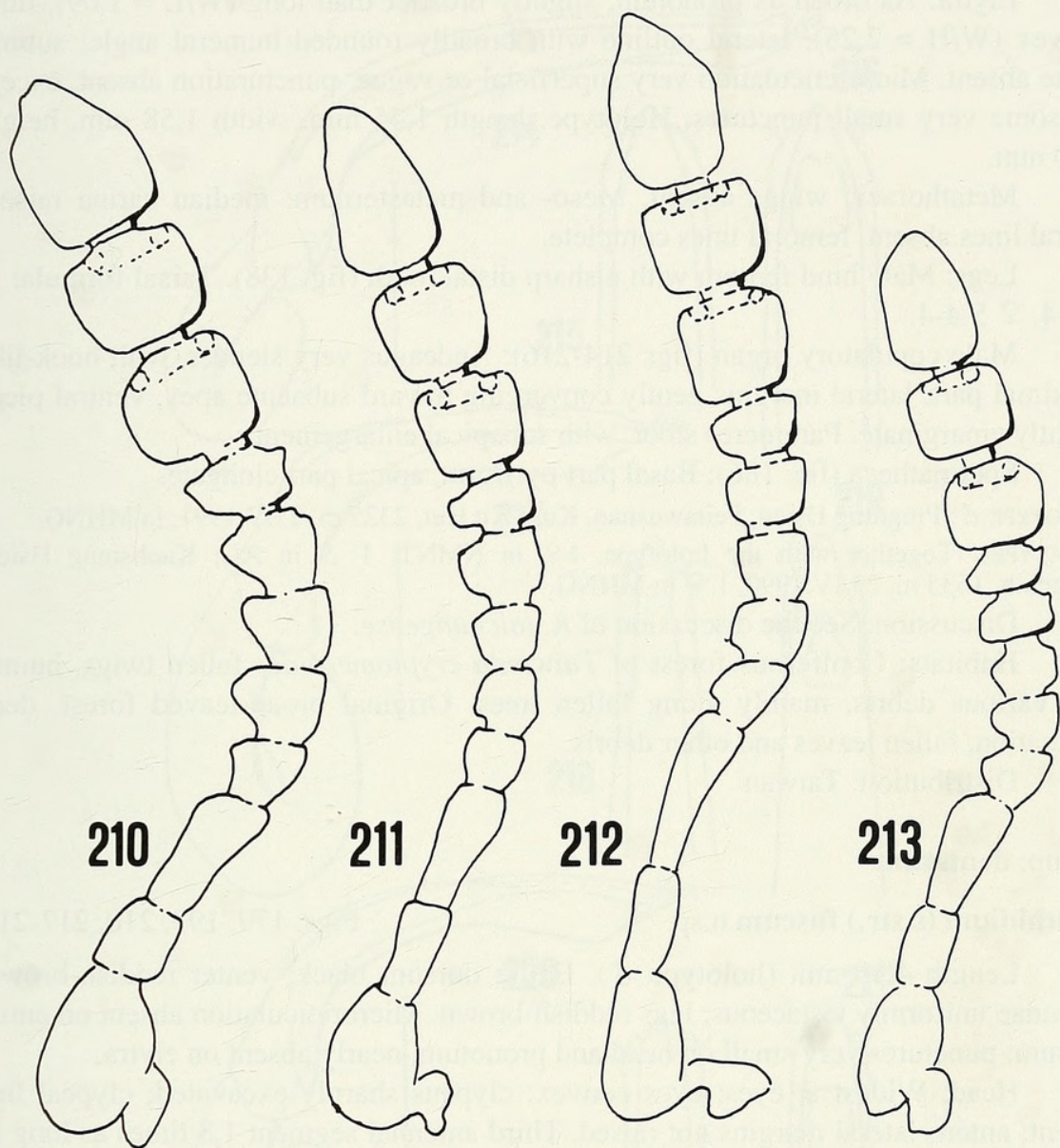
Habitat: Original coniferous forest on northern slope, dead vegetation, various debris and moss.

Distribution: Taiwan.

Agathidium (s.str.) exoletum n.sp.

Figs. 93, 138, 178, 186, 214-216

Length 3,3-3,4 mm (holotype ♂ 3,40 mm). Entire dorsum black; venter reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs reddish-



FIGS 210-213

Antenna of: 210, *Agathidium fuscum* n.sp.; 211, *A. lunatum* n.sp.; 212, *A. umbratum* n.sp.; 213, *A. splendidulum* n.sp.

brown. Microreticulation absent on head and pronotum, superficial or vague on elytra; punctures very small on head, sparse on pronotum and elytra.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,3 times as long as 2nd, as long as 4th and 5th combined (fig. 93); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, hardly visible.

Pronotum: 1,36 times as broad as head, moderately broader than long ($W/L = 1,46$), very convex ($W/H = 1,46$). Dorsal and lateral outlines: fig. 178. Punctures very small and sparse. Holotype: length 1,08 mm, width 1,58 mm, height 1,08 mm.

Elytra: As broad as pronotum, slightly broader than long ($W/L = 1,09$), little convex ($W/H = 2,25$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation very superficial or vague; puncturation absent, except for some very small punctures. Holotype: length 1,45 mm, width 1,58 mm, height 0,70 mm.

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

Legs: Male hind femora with a sharp distal tooth (fig. 138). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 214-216): Aedeagus very slender, with hook-like proximal part, lateral margins gently converging toward subacute apex, ventral piece slightly emarginate. Parameres stout, with subapical enlargement.

Spermatheca (fig. 186): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2325 m, 21.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1 ♀ in NMNT, 1 ♂ in AC; Kaohsiung Hsien, Tengchih, 1535 m, 23.IV.1990, 1 ♀ in MHNG.

Discussion: See the discussion of *A. taichungense*.

Habitats: Coniferous forest of *Taiwania cryptomeroides* fallen twigs, humus and various debris, mainly along fallen trees. Original broad-leaved forest, dead vegetation, fallen leaves and other debris.

Distribution: Taiwan.

Group: **dentatum**

Agathidium (s.str.) fuscum n.sp.

Figs. 179, 193, 210, 217-219

Length 4,10 mm (holotype ♂). Entire dorsum black; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum; punctures very small on head and pronotum, nearly absent on elytra.

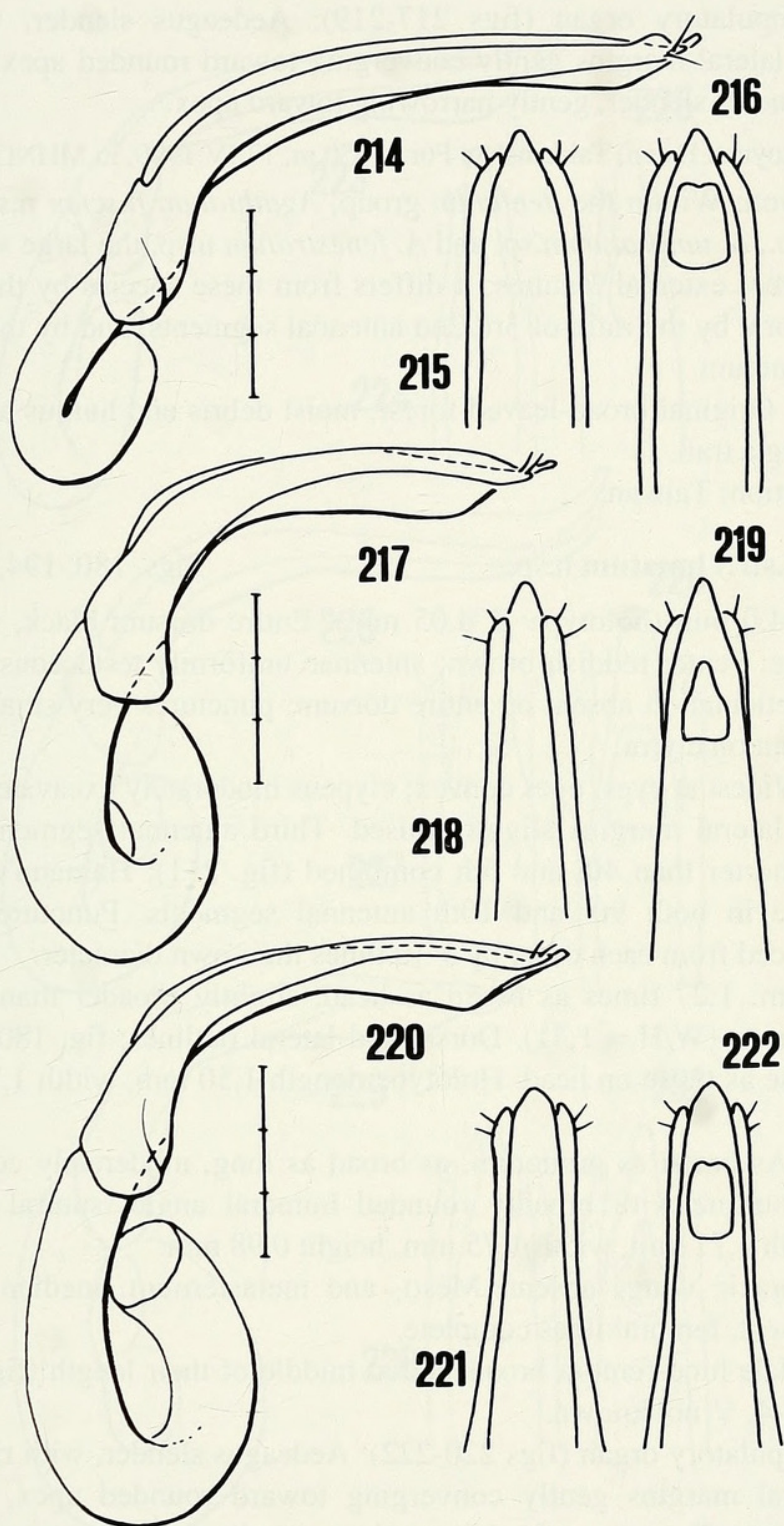
Head: Widest at eyes; eyes convex; clypeus sharply excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,8 times as long as 2nd, as long as 4th and 5th combined (fig. 210); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, superficial, spaced from each other by 6-10 times their own diameter.

Pronotum: 1,3 times as broad as head, as broad as long, very convex ($W/H = 1,38$). Dorsal and lateral outlines: fig. 179. Punctures as small as those on head. Holotype: length 1,72 mm, width 1,83 mm, height 1,32 mm.

Elytra: Narrower than pronotum, moderately broader than long ($W/L = 1,06$), slightly convex ($W/H = 1,88$); lateral outline with broadly rounded humeral angle; sutural striae absent. Puncturation absent, except for some very small punctures. Holotype: length 1,65 mm, width 1,75 mm, height 0,93 mm.

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

Legs: Male hind femora with small subdistal tooth (fig. 193). Tarsal formula: ♂ 5-5-4, ♀ not known.



FIGS 214-222

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 214-216, *Agathidium exoletum* n.sp.; 217-219, *A. fuscum* n.sp.; 220-222, *A. lunatum* n.sp. Scales: 1 division = 0,1 mm.

Male copulatory organ (figs 217-219): Aedeagus slender, with ring-like proximal part, lateral margins gently converging toward rounded apex, ventral piece not bifid. Parameres slender, gently narrowing toward apex.

HOLOTYPE ♂: Taoyuan Hsien, Takuanshan For., 1650 m, 17.IV.1990, in MHNG.

Discussion: Within the *dentatum* group, *Agathidium fuscum* n.sp. shares with *A. lunatum* n.sp., *A. umbratum* n.sp. and *A. fenestratum* n.sp. the large size in addition to numerous other external features; it differs from these species by the shape of the male hind femora, by the ratio of 3rd/2nd antennal segments, and by the width/length ratio of the pronotum.

Habitat: Original broad-leaved forest, moist debris and humus among the lush vegetation along a trail.

Distribution: Taiwan.

***Agathidium* (s.str.) *lunatum* n.sp.**

Figs. 180, 194, 211, 220-222

Length 4,0 mm (holotype ♂ 4,05 mm). Entire dorsum black, reddish-brown along the suture; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum; punctures very small on head and pronotum, absent on elytra.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,6 times as long as 2nd, shorter than 4th and 5th combined (fig. 211); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, superficial, spaced from each other by 5-10 times their own diameter.

Pronotum: 1,27 times as broad as head, slightly broader than long ($W/L = 1,16$), very convex ($W/H = 1,31$). Dorsal and lateral outlines: fig. 180. Punctures as small and sparse as those on head. Holotype: length 1,50 mm, width 1,75 mm, height 1,33 mm.

Elytra: As broad as pronotum, as broad as long, moderately convex ($W/H = 1,78$); lateral outline with broadly rounded humeral angle; sutural striae absent. Holotype: length 1,71 mm, width 1,75 mm, height 0,98 mm.

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

Legs: Male hind femora broadened at middle of their length (fig. 194). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 220-222): Aedeagus slender, with ring-like proximal part, lateral margins gently converging toward rounded apex, ventral piece slightly emarginate. Parameres slender, gently narrowing toward apex.

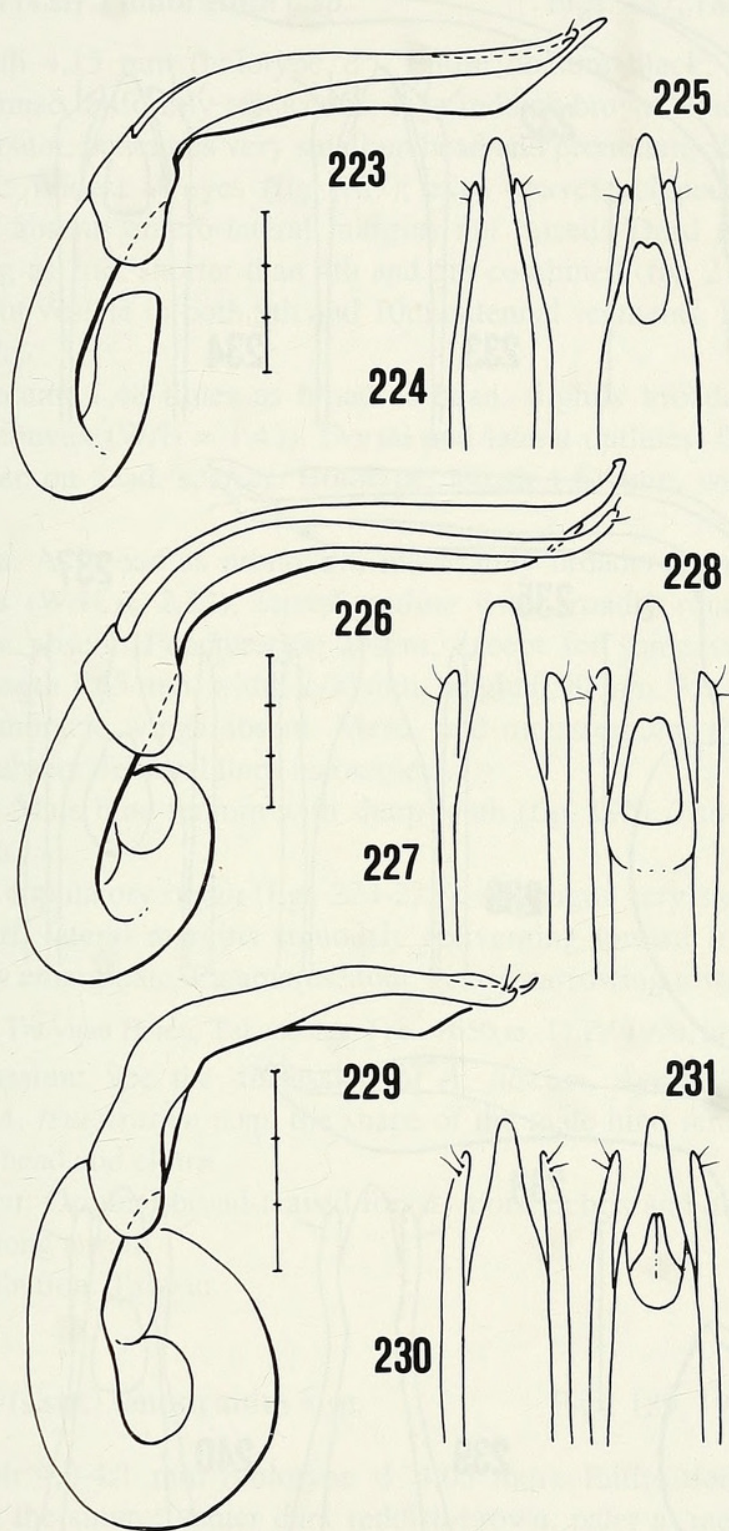
HOLOTYPE ♂: Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2325 m, 21.V.1991, in MHNG.

PARATYPE: Together with the holotype, 1 ♂ in AC.

Discussion: See the discussion of *A. fuscum*.

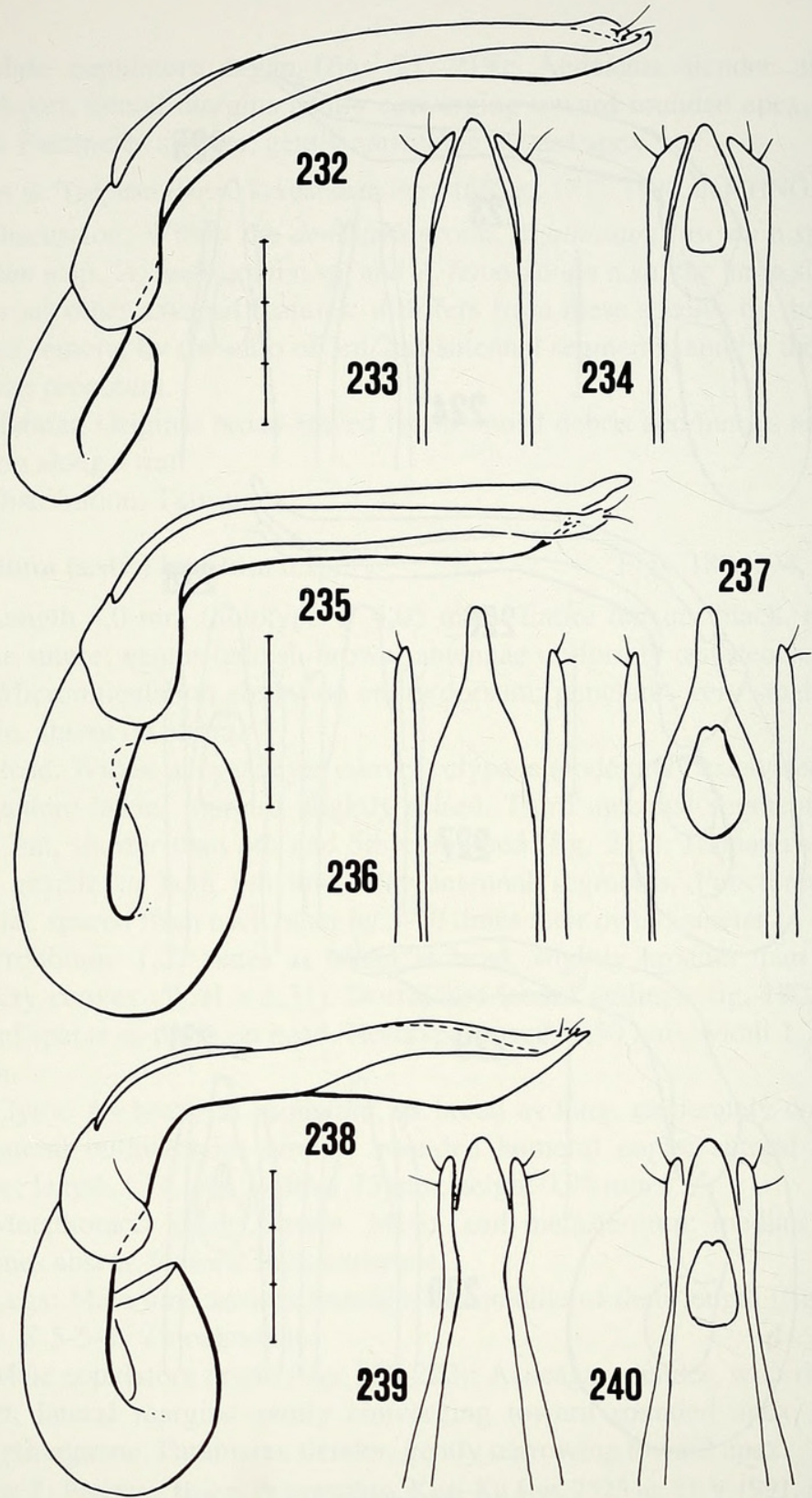
Habitat: Original broad-leaved forest; dead vegetation, fallen leaves and other debris.

Distribution: Taiwan.



FIGS 223-231

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 223-225, *Agathidium umbratum* n.sp.; 226-228, *A. fenestratum* n.sp.; 229-231, *A. asphaltinum* n.sp.
Scales: 1 division = 0,1 mm.



FIGS 232-240

Male copulatory organ (lateral view and dorsal/ventral view of its apex) of: 232-234, *Agathidium splendidulum* n.sp.; 235-237, *A. melanocephalum* n.sp.; 238-240, *A. chiaicum* n.sp.
Scales: 1 division = 0,1 mm.

Agathidium (s.str.) umbratum n.sp.

Figs. 187, 188, 195, 212, 223-225

Length 4,15 mm (holotype ♂). Entire dorsum black; venter dark reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum; punctures very small on head and pronotum, absent on elytra.

Head: Widest at eyes (fig. 187); eyes convex; clypeus sharply excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,5 times as long as 2nd, shorter than 4th and 5th combined (fig. 212); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, hardly visible.

Pronotum: 1,48 times as broad as head, slightly broader than long ($W/L = 1,24$), very convex ($W/H = 1,43$). Dorsal and lateral outlines: fig. 188. Punctures as small as those on head, sparser. Holotype: length 1,61 mm, width 2,00 mm, height 1,40 mm.

Elytra: As broad as pronotum, moderately broader than long ($W/L = 1,21$), little convex ($W/H = 2,22$); lateral outline with broadly rounded humeral angle; sutural striae absent. Puncturation absent, except for some very small punctures. Holotype: length 1,65 mm, width 2,00 mm, height 0,90 mm.

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

Legs: Male hind femora with sharp tooth (fig. 195). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 223-225): Aedeagus very slender, with hook-like proximal part, lateral margins sinuously converging toward rounded apex, ventral piece slightly emarginate. Parameres stout, gently narrowing toward apex.

HOLOTYPE ♂: Taoyuan Hsien, Takuanshan For., 1650 m, 17.IV.1990, in MHNG.

Discussion: See the discussion of *A. fuscum*. *Agathidium umbratum* n.sp. shares with *A. fenestratum* n.sp. the shape of the male hind femora; it differs by the shape of the head and elytra.

Habitat: Original broad-leaved forest, moist debris and humus among the lush vegetation along a trail.

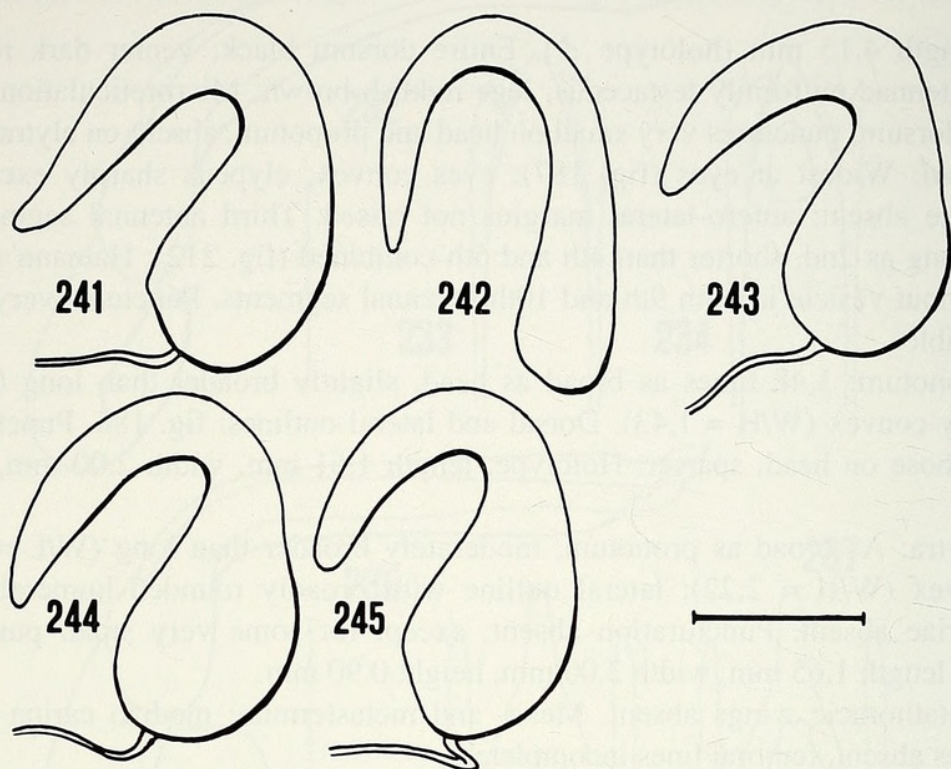
Distribution: Taiwan.

Agathidium (s.str.) fenestratum n.sp.

Figs. 189, 190, 196, 226-228, 241

Length 4,0-4,1 mm (holotype ♂ 4,05 mm). Entire dorsum black, reddish-brown along the suture; venter dark reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on entire dorsum; puncturation fine and sparse on entire dorsum.

Head: Widest at eyes (fig. 189); eyes flattened; clypeus moderately excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,5 times as long as 2nd, shorter than 4th and 5th combined. Punctures small, moderately impressed, spaced from each other by 5-10 times their own diameter.



FIGS 241-245

Spermatheca of: 241, *Agathidium fenestratum* n.sp.; 242, *A. asphaltinum* n.sp.; 243, *A. splendidulum* n.sp.; 244, *A. melanocephalum* n.sp.; 245, *A. chiaicum* n.sp. Scale: 1 division = 0,1 mm.

Pronotum: 1,3 times as broad as head, slightly broader than long ($W/L = 1,25$), very convex ($W/H = 1,46$). Dorsal and lateral outlines: fig. 190. Punctures somewhat larger and deeper than at head, spaced from each other by 1-10 times their own diameter. Holotype: length 1,46 mm, width 1,83 mm, height 1,25 mm.

Elytra: As broad as pronotum, as broad as long, moderately convex ($W/H = 1,8$); lateral outline with broadly rounded humeral angle; sutural striae absent. Punctuation absent, except for some punctures similar to those of head. Holotype: length 1,72 mm, width 1,80 mm, height 1,00 mm.

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

Legs: Male hind femora with sharp tooth (fig. 196). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 226-228): Aedeagus very slender, with ring-like proximal part, lateral margins sinuously converging toward rounded apex, ventral piece slightly emarginate. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 241): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Chiai Hsien, Yushan N. P., Mun-Li Cliff, 1700 m, 27.IV.1990, in MHNG.

Paratypes: Together with the holotype, 1 ♀ in NMNT, 1 ♂ and 1 ♀ in AC.

Discussion: See the discussion of *A. umbratum*.

Habitat: Original mixed coniferous and broad-leaved forest, moss, litter, rotting bark and wood around huge trees.

Distribution: Taiwan.

***Agathidium* (s.str.) *asphaltinum* n.sp.**

Figs. 197, 229-231, 242

Length 3,0-3,3 mm (holotype ♂ 3,05 mm). Entire dorsum black or reddish-brown; venter reddish-brown, paler at mesosternum; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, vague on elytra; punctures very small on head and pronotum, absent on elytra.

Head: Widest at eyes; eyes convex; clypeus sharply excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment as long as 2nd, as long as 4th and 5th combined. Punctures very small, hardly visible.

Pronotum: 1,24 times as broad as head, slightly broader than long (W/L = 1,39), very convex (W/H = 1,4). Punctures as small as those on head. Holotype: length 1,05 mm, width 1,46 mm, height 1,04 mm.

Elytra: Narrower than pronotum, as broad as long, moderately convex (W/H = 1,78); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation. Holotype: length 1,30 mm, width 1,36 mm, height 0,76 mm.

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

Legs: Male hind femora with small subdistal tooth (fig. 197). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 229-231): Aedeagus stout, with ring-like proximal part, lateral margins sinuously converging toward rounded apex, ventral piece deeply split. Parameres stout, gently narrowing toward apex.

Spermatheca (fig. 242): Both basal and apical parts elongate; basal part longer and larger.

HOLOTYPE ♂: Kaohsiung Hsien, Tengchih, 1610 m, 24.IV.1990, in MHNG.

PARATYPE: Together with the holotype, 1 ♀ in AC.

Discussion: Within the *dentatum* group, *Agathidium asphaltinum* n.sp. is closely related to *A. splendidulum* n.sp., *A. melanocephalum* n.sp. and *A. chiaicum* n.sp. due to numerous external features; diagnostic characters are the shape of the male hind femora, the ratio of 3rd/2nd antennal segments and the width/length ratio of the pronotum.

Habitat: Large clearing in a broad-leaved forest, dead vegetation and humus, rotting bark and wood along fallen trees and stumps.

Distribution: Taiwan.

***Agathidium* (s.str.) *splendidulum* n.sp.**

Figs. 191, 198, 213, 232-234, 243

Length 3,6-3,7 mm (holotype ♂ 3,65 mm). Entire dorsum black, reddish-brown along the suture; venter reddish-brown; antennae uniformly testaceous; legs

reddish-brown. Microreticulation absent on entire dorsum; puncturation fine and sparse on entire dorsum.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins not raised. Third antennal segment 1,5 times as long as 2nd, shorter than 4th and 5th combined (fig. 213); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Punctures very small, hardly visible.

Pronotum: 1,26 times as broad as head, slightly broader than long ($W/L = 1,15$), very convex ($W/H = 1,29$). Dorsal and lateral outlines: fig. 191. Punctures as small as those on head. Holotype: length 1,40 mm, width 1,62 mm, height 1,25 mm.

Elytra: Narrower than pronotum, as broad as long, moderately convex ($W/H = 1,66$); lateral outline with broadly rounded humeral angle; sutural striae absent. Punctures larger than at head, very superficial, spaced from each other by 1-10 times their own diameter. Holotype: length 1,53 mm, width 1,50 mm, height 0,90 mm.

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

Legs: Male hind femora with very sharp tooth (fig. 198). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 232-234): Aedeagus very slender, with hook-like proximal part, lateral margins gently converging toward rounded apex, ventral piece slightly emarginate. Parameres slender, with subapical enlargement.

Spermatheca (fig. 243): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Nantou Hsien, Meifeng, 2130 m, 13.V.1991, in MHNG.

PARATYPES: Together with the holotype, 1 ♀ in MHNG, 1 ♀ in NMNT; same locality, 2130 m, 3.V.1991, 1 ♂ in AC.

Discussion: See the discussion of *A. asphaltinum*.

Habitats: Original broad-leaved forest; lush vegetation, debris and humus along a road; moss on large fallen trees and debris along them.

Distribution: Taiwan.

Agathidium (s.str.) melanocephalum n.sp.

Figs. 192, 199, 235-237, 244

Length 3,3-3,8 mm (holotype ♂ 3,85 mm). Entire dorsum black; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation on entire dorsum; punctures very small on entire dorsum.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins raised. Third antennal segment 1,3 times as long as 2nd, shorter than 4th and 5th combined. Punctures very small, hardly visible.

Pronotum: 1,24 times as broad as head, slightly broader than long ($W/L = 1,28$), moderately convex ($W/H = 1,5$). Dorsal and lateral outlines: fig. 192. Punctures as small and sparse as those on head. Holotype: length 1,40 mm, width 1,80 mm, height 1,20 mm.

Elytra: Narrower than pronotum, as broad as long, moderately convex ($W/H = 1,77$); lateral outline with broadly rounded humeral angle; sutural striae absent. Punctures as small as those on head. Holotype: length 1,65 mm, width 1,70 mm, height 0,96 mm.

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

Legs: Male hind femora with sharp tooth (fig. 199). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 235-237): Aedeagus slender, with hook-like proximal part, lateral margins parallel and then abruptly converging toward rounded apex, ventral piece split. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 244): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Chiai Hsien, Yushan N. P., Mun-Li Cliff, 1700 m, 27.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 2♂ and 2♀ in MHNG, 1♂ and 1♀ in AC; Nantou Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 13.V.1991, 2♂ and 1♀ in MHNG; same locality, Mun-Li Cliff, 2700 m, 18.V.1991, 1♂ and 1♀ in MHNG, 2♀ in NMNT, 1♂ and 1♀ in AC; Hualien Hsien, Taroko N. P., ridge SE Nanhushi Hut, 2700 m, 11.V.1990, 1♂ in MHNG.

Discussion: See the discussion of *A. asphaltinum*. *Agathidium melanocephalum* n.sp. is closely related to *A. chiaicum* n.sp.; it may be distinguished from it merely by the male copulatory organ.

Habitats: Original mixed coniferous and broad-leaved forest. Original coniferous forest, rotting bark and wood, humus, moss and old mushrooms on and around fallen trees.

Distribution: Taiwan.

***Agathidium* (s.str.) *chiaicum* n.sp.**

Figs. 200, 238-240, 245

Length 3,1-3,5 mm (holotype ♂ 3,40 mm). Entire dorsum black; venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent on head and pronotum, vague on elytra; punctures very small, nearly absent on elytra.

Head: Widest at eyes; eyes convex; clypeus moderately excavated; clypeal line absent; antero-lateral margins slightly raised. Third antennal segment 1,2 times as long as 2nd, shorter than 4th and 5th combined. Punctures very small, hardly visible.

Pronotum: 1,29 times as broad as head, slightly broader than long (W/L = 1,34), moderately convex (W/H = 1,55). Punctures as small as those on head. Holotype: length 1,15 mm, width 1,55 mm, height 1,00 mm.

Elytra: As broad as pronotum, as broad as long, moderately convex (W/H = 1,8); lateral outline with broadly rounded humeral angle; sutural striae absent. Only traces of microreticulation; puncturation absent, except for some very small punctures. Holotype: length 1,55 mm, width 1,55 mm, height 0,85 mm.

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

Legs: Male hind femora with sharp tooth (fig. 200). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 238-240): Aedeagus slender, with hook-like proximal part, lateral margins gently converging toward rounded apex, ventral piece split. Parameres stout, gently narrowing toward apex.

Spermatheca (fig. 245): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Chiai Hsien, Yushan N. P., Mun-Li Cliff, 1700 m, 27.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 5♂ and 3♀ in MHNG, 1♂ and 1♀ in NMNT, 1♂ and 1♀ in AC; Nantou Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 13.V.1991, 2♂ and 1♀ in MHNG, 1♂ and 1♀ in AC.

Discussion: See the discussion of *A. asphaltinum* and *A. melanocephalum*.

Habitat: Original mixed coniferous and broad-leaved forest, moss, litter, rotting bark and wood around huge trees.

Distribution: Taiwan.

Subg. **Microceble** Angelini & De Marzo, 1986

Group: **grouvellei**

Agathidium (Microceble) klapperichi Ang. & Dmz.

Agathidium (Microceble) klapperichi Angelini & De Marzo, 1985, Entomologica, 19: 41 (s.str.); 1986a, Rev. suisse Zool., 93 (2): 454.

Material: Kaohsiung Hsien, Tengchih, 1580 m, 24.IV.1990, 2♀ in MHNG; same locality, 1610 m, 24.IV.1990, 2♂ and 2♀ in MHNG, 1♂ and 1♀ in NMNT, 1♂ and 1♀ in AC.

Habitat: Large clearing in a broad-leaved forest, dead vegetation and humus, rotting bark and wood along fallen trees and stumps.

Distribution: Taiwan.

Agathidium (Microceble) amictum n.sp.

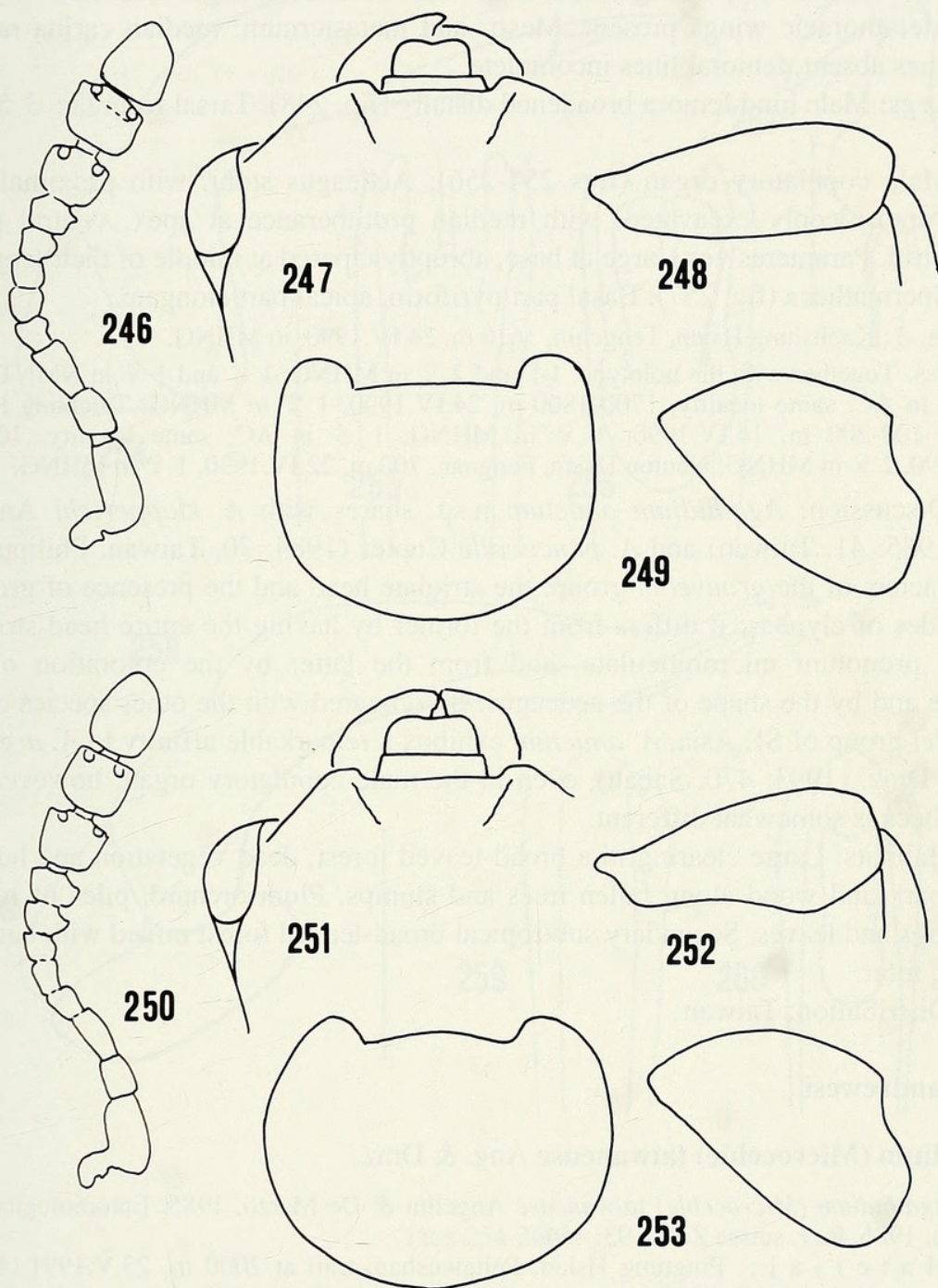
Figs. 246-249, 254-257

Length 2,9-3,2 mm (holotype ♂ 2,90 mm). Entire dorsum reddish-brown, sometimes paler around the border pronotum-elytra; venter reddish-brown, paler at mesosternum; antennae testaceous, darker at segments 7-10; legs reddish-brown. Head striolate, microreticulation superficial or vague on pronotum and elytra; puncturation sparse on head, nearly absent on pronotum and elytra.

Head: Widest at eyes (fig. 247); eyes very convex; clypeus moderately excavated; a short groove and a pit at each side of clypeus; antero-lateral margins raised. Third antennal segment 1,2 times as long as 2nd, shorter than 4th and 5th combined (fig. 246); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments. Whole surface striolate. Punctures small, superficial, spaced from each other by 1-10 times their own diameter.

Pronotum: 1,84 times as broad as head, moderately broader than long ($W/L = 1,42$), moderately convex ($W/H = 1,51$). Dorsal and lateral outlines: fig. 249. Microreticulation superficial on entire surface; punctures small, superficial, spaced from each other by 3-20 times their own diameter. Holotype: length 1,00 mm, width 1,42 mm, height 0,94 mm.

Elytra: As broad as pronotum, as broad as long, moderately convex ($W/H = 1,67$); lateral outline with broadly rounded humeral angle; sutural striae absent.



FIGS 246-253

Antenna, head, male hind femur and pronotum (dorsal and lateral view) of: 246-249, *Agathidium amictum* n.sp.; 250-253, *A. venustum* n.sp.

Microreticulation superficial or vague; puncturation absent, except for some very small punctures. Holotype: length 1,35 mm, width 1,42 mm, height 0,85 mm.

Metathoracic wings present. Meso- and metasternum: median carina raised, lateral lines absent, femoral lines incomplete.

Legs: Male hind femora broadened distally (fig. 248). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 254-256): Aedeagus stout, with proximal part simple, apex deeply excavated, with median protuberance at apex, ventral piece deeply bifid. Parameres very large at base, abruptly tapered at middle of their length.

Spermatheca (fig. 257): Basal part pyriform, apical part elongate.

HOLOTYPE ♂: Kaohsiung Hsien, Tengchih, 1610 m, 24.IV.1990, in MHNG.

PARATYPES: Together with the holotype, 1 ♂ and 2 ♀ in MHNG, 1 ♂ and 1 ♀ in NMNT, 1 ♂ and 1 ♀ in AC; same locality, 1700-1800 m, 24.IV.1990, 1 ♀ in MHNG; Taichung Hsien, Wufeng, 100-200 m, 14.IV.1990, 1 ♀ in MHNG, 1 ♂ in AC; same locality, 100 m, 15.IV.1990, 2 ♀ in MHNG; Nantou Hsien, Fengnan, 700 m, 22.IV.1990, 1 ♀ in MHNG.

Discussion: *Agathidium amictum* n.sp. shares with *A. klapperichi* Ang. & Dmz. (1985: 41, Taiwan) and *A. puncticolle* Cooter (1984: 70, Taiwan, Philippines) the characters of the *grouvellei* group: the striolate head and the presence of grooves at the sides of clypeus; it differs from the former by having the entire head striolate and the pronotum microreticulate, and from the latter by the coloration of the antennae and by the shape of the aedeagus; if compared with the other species of the *grouvellei* group of SE Asia, *A. amictum* exhibits a remarkable affinity to *A. argutum* Ang. & Dmz. (1993: 470, Sabah), even in the male copulatory organ; however, the spermatheca is somewhat different.

Habitats: Large clearing in a broad-leaved forest, dead vegetation and humus, rotting bark and wood along fallen trees and stumps. Plum orchard, piles of rotting plum twigs and leaves. Secondary subtropical broad-leaved forest mixed with bamboo growths, litter.

Distribution: Taiwan.

Group: **andrewesi**

***Agathidium (Microceble) taiwanense* Ang. & Dmz.**

Agathidium (Microceble) taiwanense Angelini & De Marzo, 1985, Entomologica, 19: 42 (s.str.); 1986, Rev. suisse Zool., 93: 454.

M a t e r i a l: Pingtung Hsien, Peitawushan, trail at 2000 m, 23.V.1991, 1 ♂ in MHNG.

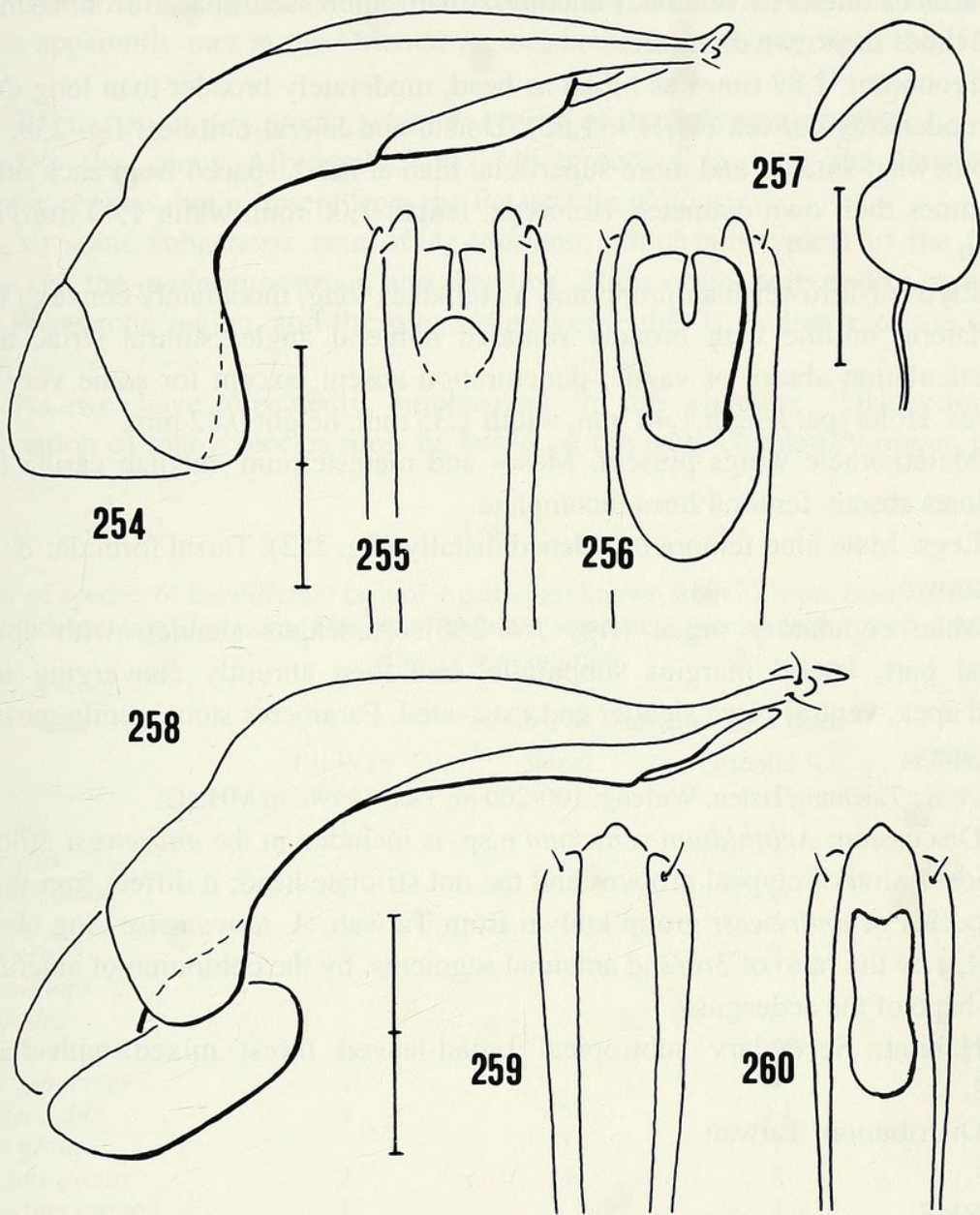
Habitat: Original broad-leaved forest, lush undergrowth along a trail, plant debris, litter and dead vegetation.

Distribution: Taiwan.

***Agathidium (Microceble) venustum* n.sp.**

Figs. 250-253, 258-260

Length 3,0 mm (holotype ♂). Entire dorsum reddish-brown; antennae testaceous, darker at segments 9-10; legs reddish-brown. Microreticulation absent, except



FIGS 254-260

Male copulatory organ (lateral view and dorsal/ventral view of its apex) and spermatheca of: 254-257, *Agathidium amictum* n.sp.; 258-260, *A. venustum* n.sp. Scales: 1 division = 0,1 mm.

for traces on head and elytra; puncturation fine on head and pronotum, nearly absent on elytra.

Head: Widest at eyes (fig. 251); eyes very convex; clypeus slightly excavated; a short groove and a pit at each side of clypeus; antero-lateral margins raised. Third antennal segment 1,3 times as long as 2nd, shorter than 4th and 5th combined (fig. 250); Hamann's organ: gutter without vesicle in both 9th and 10th antennal segments.

Only traces of microreticulation. Punctures small, impressed, spaced from each other by 5-10 times their own diameter.

Pronotum: 1,87 times as broad as head, moderately broader than long ($W/L = 1,42$), moderately convex ($W/H = 1,52$). Dorsal and lateral outlines: fig. 253. Punctures somewhat smaller and more superficial than at head, spaced from each other by 0,5-20 times their own diameter. Holotype: length 1,00 mm, width 1,42 mm, height 0,93 mm.

Elytra: Narrower than pronotum, as broad as long, moderately convex ($W/H = 1,64$); lateral outline with broadly rounded humeral angle; sutural striae absent. Microreticulation absent or vague; puncturation absent, except for some very small punctures. Holotype: length 1,40 mm, width 1,35 mm, height 0,82 mm.

Metathoracic wings present. Meso- and metasternum: median carina raised, lateral lines absent, femoral lines incomplete.

Legs: Male hind femora broadened distally (fig. 252). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 258-260): Aedeagus slender, with spiralled proximal part, lateral margins subparallel and then abruptly converging toward rounded apex, ventral piece slender and excavated. Parameres stout, gently narrowing toward apex.

HOLOTYPE ♂: Taichung Hsien, Wufeng, 100-200 m, 14.IV.1990, in MHNG.

Discussion: *Agathidium venustum* n.sp. is included in the *andrewesi* group due to the possession of clypeal grooves and the not striolate head; it differs from the only other species of *andrewesi* group known from Taiwan, *A. taiwanense* Ang. & Dmz. (1985: 42) by the ratio of 3rd/2nd antennal segments, by the coloration of antenna and by the shape of the aedeagus.

Habitat: Secondary subtropical broad-leaved forest mixed with bamboo growths.

Distribution: Taiwan.

REMARKS

Due to the insular and mountainous nature of Taiwan, the Agathidiini Fauna is characterized by the overwhelming of the endemic species (50 out 52). Non-endemic species are *Agathidium formosum* Ang. & Dmz., already known from Thailand, and *A. puncticolle* Cooter, known also from the Philippines and Sabah. Since some new species were found in single localities and/or in single specimens, we think that many additional new species likely occur in Taiwan.

As shown in table 1, the Fauna of Taiwan exhibits certain chorological features that are intermediate between those of the Palaearctic and Oriental regions, as it is documented by the occurrence of:

1) the genus *Cyrtoplastus*, which was known so far only from the Palaearctic region;

II) the subg. *Cyphoceble*, which is widely distributed in the Palearctic region but it is apparently rare in the Oriental region, being known only from the Himalaya so far;

III) the genus *Anisotoma*, which is typical of the Palaearctic region;

IV) the genus *Afroagathidium*, which occurs in both the Oriental and Aethiopic regions, but is absent from the Palaearctic region;

V) some subgeneric taxa of *Agathidium*, which are typical of the Oriental region, i.e., the *madurensis*-group and the subg. *Microceble*, both poorly represented in the Palaearctic region, and the subg. *Macroceble* that is exclusive of the Oriental region.

As we have repeatedly emphasized in the chapters "Discussion", the identification of many species must be based on the male copulatory organ, because

TAB. 1

Number of species of the different taxa of Agathidiini known from Taiwan, compared with that of the other mentioned regions. The count includes some new species from China described in other papers in press.

taxa	number of known species from			
	Tai Wan	Nepal	Oriental R.	Palearctic R.
<i>Anisotoma</i>	1	2	6	21
<i>Amphicyllis</i>				2
<i>Afroagathidium</i>	1		2	
<i>Liodopria</i>	1	1	5	2
<i>Cyrtoplastus</i>	1		1	7
<i>Sphaeroliodes</i>				2
<i>Stetholiodes</i>		3	6	3
<i>Agathidium</i> (total)	48	129	329	163
subg. <i>Cyphoceble</i>	3	1	4	13
subg. <i>Neoceble</i>	5	5	14	73
<i>varians</i> group		1	1	23
<i>nigripennis</i> group	2	4	8	33
<i>marginatum</i> group	1		1	12
<i>canariense</i> group	2		4	5
subg. <i>Agathidium</i> s.str.	34	95	187	74
<i>madurensis</i> group	4	9	42	2
<i>seminulum</i> group	1	29	34	20
<i>atrum</i> group		7	15	6
<i>laevigatum</i> group	21	32	56	21
<i>dentatum</i> group	8	18	40	25
subg. <i>Microceble</i>	5	12	90	2
<i>maculatum</i> group			20	1
<i>grouvellei</i> group	3	8	42	
<i>andrewesi</i> group	2	4	28	1
subg. <i>Euryceble</i>			4	
subg. <i>Chaetoceble</i>				1
subg. <i>Macroceble</i>	1	16	30	
Agathidiini (total)	52	135	349	200

of the general uniformity of the other characters, including, in some instances, also the shape of the spermatheca. This difficulty arises also from some sentences in the key and is particularly sharp among the 18 species of the *laevigatum*-group. In these species we realize to be: I) microreticulation always very weak or vague (this is a rare feature within *Agathidium*); II) dorsal puncturation consisting of very small punctures on head and pronotum and absent on elytra of most species; III) tarsal formula constant (σ 5-5-4, ϕ 5-4-4); IV) colour of antennae constant; V) ratio of 3rd/2nd antennal segments constant (1,2) in as many as 8 species; VI) body length ranging from 2,4 and 3,7, except in a single 4,1 mm long species; VII) mesosternal carina lacking in one species only; VIII) lateral lines of mesosternum constantly absent; IX) metathoracic wings always absent.

An interesting reduction in the number of the antennal segments was found in *Anisotoma smetanai* n.sp. This feature was previously known in *Liadopria wallacei* (Angelini & Cooter, 1993: 67).

REFERENCES

- ANGELINI, F. 1993. Studi sugli *Agathidium*. Designazione di un nuovo genere, un nuovo sottogenere e gruppi di specie (Coleoptera Leiodidae). *Boll. Soc. ent. ital.*, 125 (1): 29-44.
- ANGELINI, F. & J. COOTER. 1993. New species of *Agathidium* Panzer and *Liadopria* Reitter (Coleoptera, Leiodidae) from Sulawesi. *Ent. Mon. Mag.*, 129: 67-79.
- ANGELINI, F. & L. DE MARZO. 1985. Descrizione di 13 specie nuove di Anisotomini dell'Asia sudorientale (Coleoptera, Leiodidae). *Entomologica, Bari*, 19: 23-49 (1984).
- ANGELINI, F. & L. DE MARZO. 1986a. *Agathidium* from India and Malaya: expedition of Geneva Natural History Museum (Coleoptera, Leiodidae). *Rev. suisse Zool.*, 93 (2): 423-455.
- ANGELINI, F. & L. DE MARZO. 1986b. Expeditions 1982, 1983 and 1984 of Geneva Natural History Museum in Nepal. Anisotomini (Coleoptera, Leiodidae). *Rev. suisse Zool.*, 93 (4): 827-873.
- ANGELINI, F. & L. DE MARZO. 1993. *Agathidium* from Sumatra, Java and Borneo (Coleoptera, Leiodidae, Anisotomini). *Rev. suisse Zool.*, 100 (2): 425-493.
- ANGELINI, F. & L. DE MARZO. 1994. Catalogue of the Agathidiini of Nepal with descriptions of new species (Coleoptera: Leiodidae). *Stuttgarter Beitr. Naturk.; ser. A*, 505: 1-53.
- COOTER, J. 1984. Two new species of *Agathidium* Panzer (Col., Leiodidae) from the Philippines. *Ent. mon. Mag.*, 120: 69-72.
- HISAMATSU S. 1985 - Notes on some Japanese Coleoptera. *Trans. Shikoku entom. Soc.*, 17: 5-13.

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1995. "Agathidiini from Taiwan collected by Dr. Ales Smetana (Coleoptera, Leiodidae, Agathidiini)." *Revue suisse de zoologie* 102, 175–255.

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