

Besuchetionella New Genus, with Descriptions of Eighteen New Species from Asia (Coleoptera: Leiodidae: Agathidiini)

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Fernando Angelini and Stewart B. Peck (2000) *Besuchetionella* new genus, with descriptions of eighteen new species from Asia (Coleoptera: Leiodidae: Agathidiini). *Zoological Studies* 39(4): 328-343. A key to the genera of the Agathidiini, a differential table of characters of the genera, and a cladogram of the relationships of the genera are presented. *Besuchetionella* new genus and 18 new species are described from the Palaearctic Region (2 species from Japan) and the Oriental Region (16 species): *Besuchetionella ater* n. sp. (Burma); *B. bhutanensis* n. sp. (Bhutan); *B. caovansungi* n. sp. (Vietnam); *B. castanea* n. sp. (Japan); *B. grossa* n. sp. (Indonesia: Java); *B. javaensis* n. sp. (Indonesia: Java); *B. loebliana* n. sp. (India: Madras); *B. malayana* n. sp. (Malaysia: Malaya); *B. meghalayana* n. sp. (India: Meghalaya); *B. minuta* n. sp. (Malaysia: Sabah); *B. nepalensis* n. sp. (Nepal); *B. nipponica* n. sp. (Japan); *B. rufa* n. sp. (Philippines); *B. sabahensis* n. sp. (Malaysia: Sabah); *B. semipunctata* n. sp. (Taiwan); *B. taiwanensis* n. sp. (Taiwan); *B. unicolor* n. sp. (Cambodia); and *B. watrousi* n. sp. (Malaysia: Malaya).

Key words: Leiodinae, *Besuchetionella*, Taxonomy, Southeastern Asia.

The first specimens of this new genus were originally studied by the first author about 20 yr ago. At that time, he had a strong doubt about the placement of this genus into either the tribe Agathidiini or into a new tribe (or subtribe), and for a long time postponed its description. The more recent appearance and study of many more species, including some collected in Vietnam by the second author, have now prompted our joint description of these.

MATERIALS AND METHODS

We have studied a total of 75 specimens of 18 species from the Palaearctic Region (Japan, two species) and Oriental Region (16 species). The specimens were bought or exchanged by the first author or collected by the second author. Structures of holotypes and some paratypes were drawn from either dry specimens or cleared microstructures on permanent microslide mounts or temporary slide mounts. Techniques of measurement, terminology,

and techniques of study are as in Angelini and De Marzo (1981, especially fig. 7) and Angelini (1995). Cleared structures were examined as slide mounts with the high-power objective of a compound microscope. An ocular micrometer was used to measure the lengths and widths of heads, pronota, and elytra. The ranges indicate the smallest and largest specimens in a series. Dimensions of curved surfaces are for the arc of the structure. Elytral length is along the midline from the tip of the scutellum. The very small size of the specimens, their compact shape, the lack of series of most species, and the difficulty of dissecting alcohol-hardened specimens presented many technical difficulties in the description and illustration of the species treated here. For these reasons the spermatheca of only 1 species could be found and illustrated. Specimens presently in the Angelini collection will be preserved in the Angelini Collection in the Museo Civico di Storia Naturale di Genova, Genova, Italy (CA-MCSNG). Holotypes in the Peck collection will be deposited in the insect collection of the Canadian Museum of Nature, Aylmer,

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Quebec, and the paratypes in the Peck collection will be divided between the Canadian Museum of Nature and the Field Museum of Natural History, Chicago, ILL, USA. Sister group relationships of the genera of Agathidiini were determined by evaluating characters as plesiomorphic or apomorphic and analyzing them as ordered states and for maximum parsimony with the software MacClade 3.1.

TAXONOMY

Besuchetionella Angelini et Peck, n. gen.

Diagnostic description: Body very convex and contractile (Figs. 2-3). Clypeus slightly to very emarginate (Figs. 8-24) and of unusual shape from other Agathidiini (protruberant in *Anisotoma* Panzer); transverse ridge on frons absent (present in *Anisotoma*; also called the “clypeal line,” see Angelini and De Marzo 1983, fig. 12). Antennal club of 5 segments, as in *Anisotoma*, but of very different shape: segments of antennal club longer, the 8th varies from smaller than 1/2 the length of the 7th to equal to 7th; segments 7, 9, and 10 with periarticular gutters but without Hamann’s organ (internal sensory vesicles, which are always present in other Agathidiini) (Figs. 25-41). Antennal groove with external margin present between eye and mentum on head underside. Tarsal formula of males 4-4-4, females 4-4-3, a condition present in no other genus of the tribe Agathidiini. Aedeagus of a shape unusual in Agathidiini; median lobe short and compact, parameres short and broad, with or without a large apical seta (Figs. 59-79). The meso- and meta-sternum are of variable shapes (Figs. 5-7): with mesosternum either sharply carinate or without median carina and lateral lines, metasternum with or without lateral lines, meso- and meta-coxae either clearly separated or almost touching. The body length ranges from 1.2 mm (*Besuchetionella meghalayana* n. sp.) to 2.45 mm (*B. grossa* n. sp.); *B. meghalayana* is the smallest species of the tribe Agathidiini (and perhaps of the subfamily Leiodinae) now known. The female tarsal formula, the absence of Hamann’s organs, and the compact shape of the aedeagus are characters different from those of any other genus in the tribe Agathidiini.

Type species: *B. castanea* Angelini et Peck. Gender: feminine.

Etymology: Dedicated to Dr. Claude Besuchet (formerly of the Geneva Museum), one of the first collectors of species of the genus, and in recognition of his many contributions to the collection and study

of many families of beetles.

Systematic position: The new genus is positioned near *Agathidium* Panzer because of the following characters: a) the dorsum without striolae and rows of punctures on the elytra; b) the shape of the meso- and meta-sternum; c) presence over the entire dorsum of short and sparse setae; and d) the presence of a supraocular carina on the head. It differs from *Agathidium* in the antennal club, tarsal formula of females, shape of the aedeagus, clypeus often very emarginate, and shape of the head (Angelini 1995). Table 1 summarizes the character states of the genera of Agathidiini. Figure 1 shows the most parsimonious unweighted cladistic relationship of the genera. Table 2 summarizes the number of known species and regional distributions of the world genera of Agathidiini.

The genera of Agathidiini may be recognized by the following key.

Key to genera of the tribe Agathidiini

- 1a. Antennal club 5 segmented 2
- 1b. Antennal club either 4 or 3 segmented 3
- 2a. Clypeus protruberant; supraocular carina absent; fronto-clypeal suture present; elytra either with or without series of punctures; metasternum without lateral lines; tarsal formula: males 5-5-4 or rarely 4-4-4, females 5-4-4 or 4-4-4. Palaearctic, Oriental, and Nearctic Regions
..... *Anisotoma* Panzer, 1797
- 2b. Clypeus not protruberant; supraocular carina present; clypeal line absent; elytra without series of punctures; metasternum either with or without femoral lines; tarsal formula: males 4-4-4, females 4-4-3. East Palaearctic and Oriental Regions
..... *Besuchetionella* Angelini et Peck, new genus
- 3a. Antennal club 4 segmented 4
- 3b. Antennal club 3 segmented 5
- 4a. Clypeus protruberant; fronto-clypeal suture present; elytra either with or without series of punctures; tarsal formula: males 5-5-4, females 4-4-4. West Palaearctic Region
..... *Amphicyllis* Erichson, 1845
- 4b. Clypeus excavate; fronto-clypeal suture absent; elytra without series (longitudinal rows) of punctures; tarsal formula: males and females 4-4-4. Ethiopian and Oriental Regions ..
..... *Afroagathidium* Angelini et Peck, 1984
- 5a. Clypeus protruberant 6
- 5b. Clypeus not protruberant or pointed 8
- 6a. Supraocular carina absent; tempora absent; elytra without series of punctures; tarsal formula: males 5-5-4 or rarely 4-4-4, females 4-4-4. Palaearctic and Oriental Regions
..... *Liodopria* Reitter, 1909
- 6b. Supraocular carina present 7
- 7a. Tempora absent (except in *C. tianmuensis* Angelini et Cooter); clypeus sharply protruberant; elytra either with or without series of punctures; tarsal formula: males 5-5-4, females 5-4-4 or 4-4-4. Palaearctic and north-eastern Oriental Region
..... *Cyrtoplastus* Reitter, 1884
- 7b. Tempora present; clypeus slightly protruberant; elytra without series of punctures; tarsal formula: males 5-5-4, females 5-4-4. East Palaearctic Region
..... *Sphaeroliodes* Portevin, 1905

- 8a. Clypeus not excavate; elytra with clearly defined punctured striae (except in *S. agathidiodes* Angelini et Cooter); tarsal formula: males 5-5-4, females 5-4-4 or 4-4-4. East Palaearctic, northern Oriental, and Nearctic Regions *Stethliodes* Fall, 1910
- 8b. Clypeus either more or less deeply excavate or pointed; elytra without punctate striae (except in 2 Nearctic species of *Agathidium*); tarsal formula: males 5-5-4 or 4-4-4, females 5-4-4 or 4-4-4 9
- 9a. Aedeagus without parameres; metasternum with short femoral lines; tarsal formula: males and females 4-4-4. Oriental and Ethiopian Regions *Pseudoagathidium* Angelini, 1992
- 9b. Aedeagus with parameres; metasternum with or without long femoral lines; tarsal formula: males 5-5-4 or 4-4-4, females 5-4-4 or 4-4-4. Palaearctic, Oriental, northern Australian and Nearctic Regions *Agathidium* Panzer, 1797

- 1a. Dorsum microreticulate 2
- 1b. Dorsum not microreticulate 3
- 2a. Elytra with sutural striae; length 1.85 mm; head: fig. 8; pronotum: fig. 42; aedeagus: fig. 59. Japan *castanea* n. sp.
- 2b. Elytra without sutural striae; length 1.35-1.50 mm; habitus: figs. 2 and 3; aedeagus: fig. 60. Japan *nipponica* n. sp.
- 3a. Head with clypeus strongly emarginate 4
- 3b. Head with clypeus slightly emarginate 15
- 4a. Elytra with sutural striae 5
- 4b. Elytra without sutural striae 12
- 5a. Clypeus with antero-lateral margins weakly raised 6
- 5b. Clypeus with antero-lateral margins distinctly raised 9
- 6a. Eyes protruberant (Fig. 9); body length 1.45 mm; pronotum: fig. 43; aedeagus: fig. 61. Malaysia (Malaya) *malayana* n. sp.
- 6b. Eye flattened; body length 1.68-1.75 mm 7
- 7a. Sutural striae extending to apical 1/5 of elytra; head: fig. 10; pronotum: fig. 44; aedeagus: fig. 62. Burma *ater* n. sp.
- 7b. Sutural striae extending to apical 1/2 of elytra 8
- 8a. Ratio pronotum/head width 1.34; sides of head more round (Fig. 11); pronotum: fig. 45. Bhutan *bhutanensis* n. sp.
- 8b. Ratio pronotum/head width 1.61; sides of head subparallel (Fig. 12); pronotum: fig. 46; aedeagus: fig. 63. Indonesia (Java) *javaensis* n. sp.

The characters and measurements of the 18 new species of *Besuchetionella* are presented in tables 3 and 4. The species may also be separated by the following key.

Key to the species of the genus *Besuchetionella* n. gen.

Table 1. Characters and hypotheses of their evolutionary transformations for the outgroup and genera in the tribe Agathidiini. Character transformation series made by outgroup comparison. Character states are coded as follows: 0, plesiomorphic; 1, 2, and 3, apomorphic. Ordered states were used in the transformation series

Genus	1. Antennal club segments	2. Clypeus	3. Supraocular carina	4. Punctured elytral striae	5. Tempora
Outgroup	5; 0	protruberant; 0	absent; 0	present; 0	absent; 0
<i>Anisotoma</i>	5; 0	protruberant; 0	absent; 0	pres./abs.; 0, 1	absent; 0
<i>Besuchetionella</i>	5; 0	not protruberant; 1	present; 1	absent; 1	absent; 0
<i>Amphicyllis</i>	4; 1	protruberant; 0	absent; 0	pres./abs.; 0, 1	absent; 0
<i>Afroagathidium</i>	4; 1	not protruberant; 1	absent; 0	absent; 1	absent; 0
<i>Liodopria</i>	3; 2	protruberant; 0	absent; 0	absent; 1	absent; 0
<i>Cyrtoplastus</i>	3; 2	protruberant; 0	present; 1	pres./abs.; 0, 1	absent; 0
<i>Sphaeroliodes</i>	3; 2	protruberant; 0	present; 1	absent; 1	present; 1
<i>Stethliodes</i>	3; 2	not protruberant; 1	present; 1	pres./abs.; 0, 1	pres./abs.; 0,1
<i>Pseudoagathidium</i>	3; 2	not protruberant; 1	present; 1	absent; 1	absent; 0
<i>Agathidium</i>	3; 2	not protruberant; 1	present; 1	absent; 1	pres./abs.; 0,1

Genus	6. Transverse ridge on frons	7. Femoral lines	8. Hamann's organ	9. Tarsal formula: male	10. Tarsal formula: female
Outgroup	present; 0	absent; 0	present; 0	5-5-5; 0	5-5-5; 0
<i>Anisotoma</i>	present; 0	absent; 0	present; 0	5-5-4 or 4-4-4; 0, 1	5-4-4 or 4-4-4; 1, 2
<i>Besuchetionella</i>	absent; 1	abs./pres.; 0, 1	absent; 1	4-4-4; 1	4-4-3; 3
<i>Amphicyllis</i>	present; 0	absent; 0	present; 0	5-5-4; 0	4-4-4; 2
<i>Afroagathidium</i>	absent; 1	absent; 0	present; 0	4-4-4; 1	4-4-4; 2
<i>Liodopria</i>	pres./abs.; 0, 1	absent; 0	present; 0	5-5-4 or 4-4-4; 0,1	4-4-4; 2
<i>Cyrtoplastus</i>	present; 0	absent; 0	present; 0	5-5-4; 0	5-4-4 or 4-4-4; 1,2
<i>Sphaeroliodes</i>	present; 0	absent; 0	present; 0	5-5-4; 0	5-4-4 or 4-4-4; 1,2
<i>Stethliodes</i>	pres./abs.; 0, 1	absent; 0	present; 0	5-5-4; 0	5-4-4 or 4-4-4; 1,2
<i>Pseudoagathidium</i>	absent; 1	absent; 0	present; 0	4-4-4; 1	4-4-4; 2
<i>Agathidium</i>	pres./abs.; 0,1	abs./pres.; 0, 1	present; 0	5-5-4 or 4-4-4; 0, 1	5-4-4 or 4-4-4; 1, 2

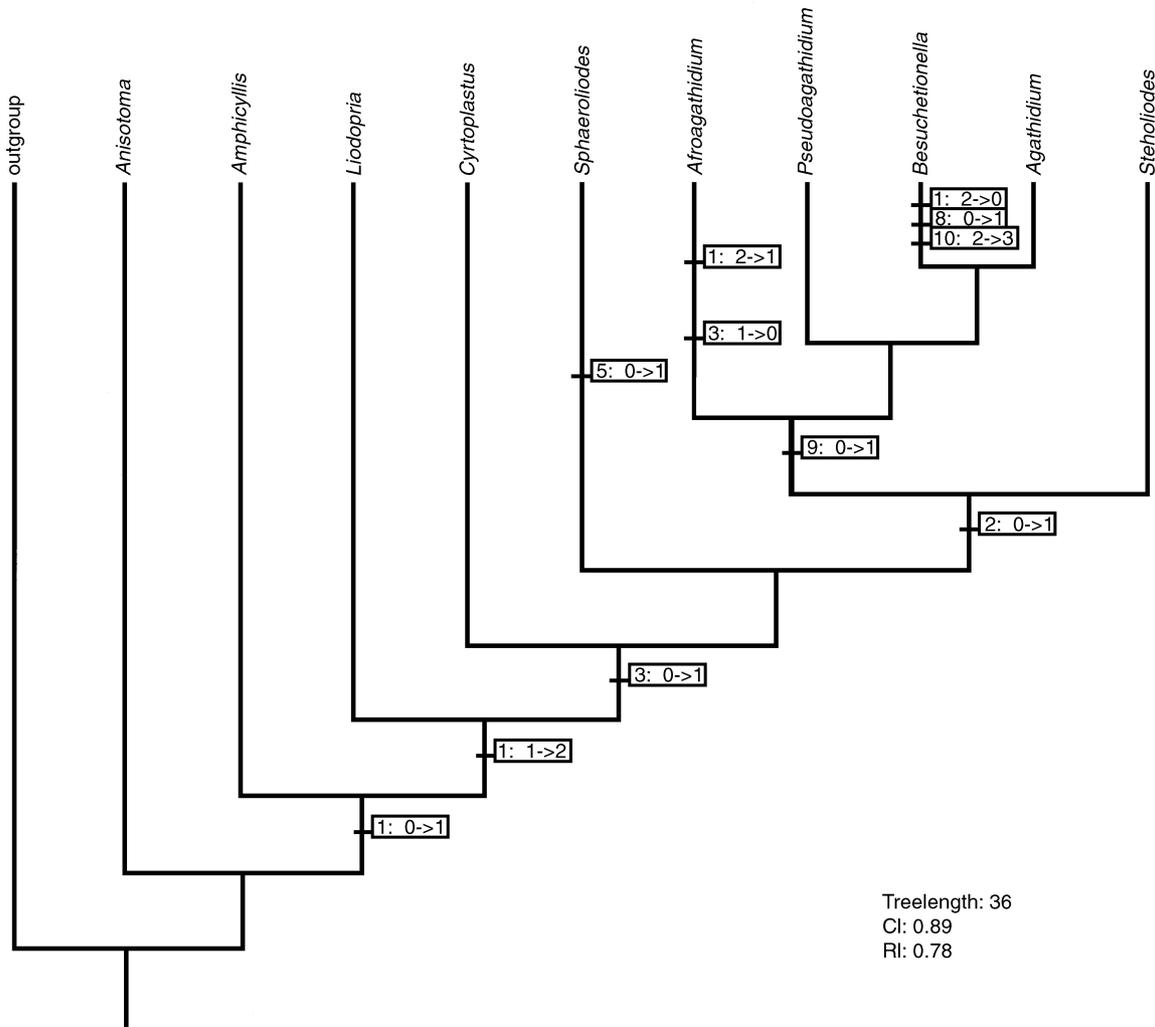


Fig. 1. Hypothesis of sister group relationships of genera of Anisotomini. A maximum parsimony cladogram was generated with ordered character transformation states as in table 1, generated by the software MacClade 3.1. Boxes indicate characters which change unambiguously on the branch and support a monophyletic group, with later character reversals in the case of characters 1 and 3. Characters 8 and 10 have unique (autapomorphic) states for *Besuchetionella*, which slightly inflate the statistics for the tree.

Table 2. Number of presently known species in the genera of the tribe Agathidiini (including species in press on 31 Oct. 1999)

Genus	Nearctic	Palearctic	Oriental	Ethiopian	Australian	Neotropical	Total
<i>Afroagathidium</i>			3	3			6
<i>Agathidium</i>	52	218	422		1	1	685
<i>Amphicyllis</i>		2					2
<i>Anisotoma</i>	27	22	9			3	57
<i>Besuchetionella</i>		2	16				18
<i>Cyrtoplastus</i>		8	5				12
<i>Liodopria</i>		2	6				8
<i>Pseudoagathidium</i>			1	9			10
<i>Sphaeroliodes</i>		2					2
<i>Stetholiodes</i>	1	5	8				14
Total	80	261	470	12	1	4	814

- 9a. Eye flattened 10
 9b. Eye protruberant 11
 10a. Body length 1.30-1.35 mm; sutural striae extending to apical 1/2 of elytra; head: fig. 13; antenna: fig. 31; pronotum: fig. 47; aedeagus: figs. 64 and 65; spermatheca: fig. 4; meso- and metasternum: fig. 5. India (Madras)
 *loebliana* n. sp.
 10b. Body length 1.65-1.70 mm; sutural striae extending to apical 1/4 of elytra; head: fig. 14; pronotum: fig. 48; aedeagus: fig. 66. Malaysia (Malaya) *watrousi* n. sp.
 11a. Body length 1.75-1.90 mm; eye protruberant (Fig. 15); antenna: fig. 33; pronotum: fig. 49; aedeagus: figs. 67 and 68; meso- and meta-sternum: fig. 6. Nepal
 *nepalensis* n. sp.
 11b. Body length 1.20-1.30 mm; eye less protruberant (Fig. 16); antenna: fig. 34; pronotum: fig. 50; aedeagus: figs. 69 and 70; meso- and meta-sternum: fig. 7. India (Meghalaya)
 *meghalayana* n. sp.
 12a. Clypeus with antero-lateral margins weakly up-turned 13
 12b. Clypeus with antero-lateral margins distinctly up-turned
 14
 13a. Pronotum moderately transverse (width/length 1.45) (Fig. 51); body length 1.30 mm; head: fig. 17. Malaysia (Sabah)
 *minuta* n. sp.
 13b. Pronotum as broad as long (width/length 1.03) (Fig. 52); body length 1.55 mm; head: fig. 18; aedeagus: fig. 71. Philippines
 *rufa* n. sp.
 14a. Pronotum moderately transverse (width/length 1.63) (Fig. 53); clypeus less emarginate (Fig. 19); ratio pronotum/head 1.6; aedeagus: fig. 72. Taiwan *semipunctata* n. sp.
 14b. Pronotum slightly transverse (width/length 1.36) (Fig. 54); clypeus more emarginate (Fig. 20); ratio pronotum/head 1.42; aedeagus: fig. 73. Vietnam *caovansungi* n. sp.
 15a. Elytra with sutural striae 16
 15b. Elytra without sutural striae 17
 16a. Eye not visible dorsally (Fig. 21); pronotum slightly transverse (width/length 1.2) (Fig. 55); clypeus with antero-lateral margins distinctly up-turned; antenna: fig. 38; aedeagus: fig. 74. Malaysia (Sabah) *sabahensis* n. sp.
 16b. Eye visible dorsally (Fig. 22); pronotum moderately transverse (width/length 1.4) (Fig. 56); clypeus with antero-lateral margins weakly up-turned; antenna: fig. 39; aedeagus: figs. 75, 76 and 77. Taiwan *taiwanensis* n. sp.
 17a. Body length 2.45 mm; head: fig. 23; pronotum: fig. 57; aedeagus: fig. 78. Indonesia (Java) *grossa* n. sp.
 17b. Body length 1.65 mm; head: fig. 24; pronotum: fig. 58; aedeagus: fig. 79. Cambodia *unicolor* n. sp.

***Besuchetionella castanea* n. sp.**

(Figs. 8, 25, 42, 59)

Type: Holotype: ♂, Japan: Honshu: Gifu Pref.: Osaka, date and collector not on label, unknown; in Angelini collection.

Diagnostic description: Body length 1.85 mm (holotype ♂). Dorsum uniformly reddish brown; antennae and legs uniformly testaceous. Microreticulation superficial on head and pronotum, more impressed on elytra; punctation microscopic and sparse on entire dorsum. Sutural striae very superficial and lightly visible, confined to apical 1/3 of elytron.

Measurements of holotype: Head: length 0.36, width 0.58 mm; pronotum: length 0.56, width 0.90, height 0.55 mm, width/length 1.6, width/height 1.63; elytra: length 0.93, width 0.96, height 0.49 mm, width/length 1.03, width/height 1.95.

Head: Antero-lateral margins distinctly raised; clypeus very emarginate; eye slightly longer than broad, protruberant, widest at eye (Fig. 8). Antenna with segments 3-5 elongate narrow (Fig. 25).

Pronotum: 1.55 times as broad as head, moderately broader than long and moderately convex; anterior margin weakly curved, lateral outline tightly rounded and with convergent sides (Fig. 42).

Elytra: A little broader than pronotum, a little broader than long, slightly convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus as in fig. 59; with irregular pointed tip, parameres with dorsal interior lateral fold, with single terminal seta. Spermatheca unknown.

Discussion: *Besuchetionella castanea* n. sp. is similar to *B. nipponica* n. sp. in the presence of microreticulation on the dorsum; it differs in the presence of sutural striae on the elytra and in its greater body length (1.85 mm; 1.35-1.50 mm in *B. nipponica*).

Distribution: Japan (Honshu).

Etymology: Referring to the chestnut-brown color of the species.

***Besuchetionella nipponica* n. sp.**

(Figs. 2, 3, 26, 60)

Types: Holotype: ♂, Japan: Honshu: Gumma Pref.: ss/Usui Pass, 850 m, 24.VII.1980. leg. I. Löbl; in Geneva Museum. Paratypes: Same data as holotype, 2 ♂♂ and 2 ♀♀ in Geneva Museum, in Angelini and Peck collections; Gumma Pref.: J.E. Kogen National Park, Shirane, 1500 m, 22.VII.1980. leg. I. Löbl, 4 exx. in Geneva Museum, Angelini and Peck collections; Gifu Pref.: 8 km SE Osaka, 750 m, 1.VIII.1980. leg. I. Löbl, 1 ♂ and 1 ♀ in Geneva Museum and Angelini collections; Ehime Pref.: Ishizuchi National Park: Mt. Ishizuchi, 13-14.VIII.1980. leg. C. Besuchet, 1 ♀ in Geneva Museum collection.

Diagnostic description: Body length 1.35-1.50 mm (holotype ♂ 1.35 mm). Dorsum uniformly reddish brown, venter testaceous; antennae and legs uniformly testaceous. Microreticulation superficial and uniform on entire dorsum; punctation microscopic and very sparse on entire dorsum. Sutural striae absent, only traces confined to apical 1/10 of elytron.

Table 3. Comparative summary table of characters and data for species in the genus *Besuchetionella* Angelini et Peck

Species	Elytral micro-reticulation	Form of clypeal incision	Presence or length of sutural stria	Presence of clypeal border	Eyes in dorsal view	Body length	Pronotum/head ratio	Pronotal width/length ratio	Known sexes	Number of specimens	Distribution
<i>castanea</i>	yes	large	1/3	yes	protuberant	1.85	1.55	1.6	male	1	Japan
<i>nipponica</i>	yes	large	no	yes	very protuberant	1.35-1.5	1.45	1.42	male & female	12	Japan
<i>malayana</i>	no	large	1/3	no	protuberant	1.45	1.52	1.48	male	1	Malaysia-Malaya
<i>ater</i>	no	large	1/5	no	barely protuberant	1.68	1.44	1.09	male	2	Burma
<i>bhutanensis</i>	no	large	1/2	no	barely protuberant	1.75	1.34	1.32	female	1	Bhutan
<i>javaensis</i>	no	large	1/2	no	barely protuberant	1.75	1.61	1.29	male	1	Indonesia-Java
<i>loebliana</i>	no	large	1/2	yes	not protuberant	1.35	1.36	1.42	male & female	17	India-Madras
<i>watrousi</i>	no	large	1/4	yes	not protuberant	1.65-1.7	1.38	1.33	male	2	Malaysia-Malaya
<i>nepalensis</i>	no	large	1/3	yes	barely protuberant	1.75-1.9	1.38	1.49	male & female	3	Nepal
<i>meghalayana</i>	no	large	1/4	yes	protuberant	1.2-1.3	1.36	1.5	male & female	15	India-Meghalaya
<i>minuta</i>	no	large	no	no	not protuberant	1.3	1.45	1.45	female	1	Malaysia-Sabah
<i>rufa</i>	no	large	no	no	not protuberant	1.55	1.39	1.0	male	1	Philippines
<i>semipunctata</i>	no	large	no	yes	not protuberant	1.70	1.6	1.63	male	1	Taiwan
<i>variabile</i>	no	large	no	yes	not protuberant	1.45-1.6	1.42	1.36	male & female	8	Vietnam
<i>sabahensis</i>	no	small	1/4	no	not visible	1.50	1.41	1.17	male	1	Malaysia-Sabah
<i>taiwanensis</i>	no	small	1/3	yes	not protuberant	1.4-1.5	1.4	1.4	male & female	3	Taiwan
<i>grossa</i>	no	small	no	no	barely protuberant	2.45	1.63	0.98	male	2	Indonesia-Java
<i>unicolor</i>	no	small	no	no	barely protuberant	1.65	1.8	1.05	male & female	2	Cambodia

All measurements are in millimeters (mm).

Table 4. Comparative summary table of measurements from holotypes and comparative ratios of structures of species in the genus *Besuchetionella*

Species and distribution	Body		Head		Pronotum					Elytra				
	Total length	Pronotum/head	Length	Width	Length	Width	Height	Width/length	Width/height	Length	Width	Height	Width/length	Width/height
<i>castanea</i> ; Japan	1.85	1.55	0.36	0.58	0.56	0.90	0.55	1.6	1.63	0.93	0.96	0.49	1.03	1.95
<i>nipponica</i> ; Japan	1.35	1.45	0.27	0.44	0.45	0.64	0.44	1.42	1.45	0.63	0.65	0.38	1.03	1.71
<i>malayana</i> ; Malaysia-Malaya	1.45	1.52	0.32	0.46	0.47	0.70	0.42	1.48	1.66	0.66	0.70	0.38	1.06	1.84
<i>ater</i> ; Burma	1.68	1.44	0.30	0.50	0.66	0.72	0.61	1.09	1.18	0.72	0.86	0.43	1.19	2.0
<i>bhutanensis</i> ; Bhutan	1.75	1.34	0.35	0.58	0.59	0.78	0.61	1.32	1.27	0.81	0.80	0.52	0.98	1.53
<i>javaensis</i> ; Indonesia-Java	1.75	1.61	0.33	0.52	0.65	0.84	0.63	1.29	1.33	0.77	0.80	0.47	1.03	1.7
<i>loebliana</i> ; India-Madras	1.35	1.36	0.28	0.44	0.42	0.60	0.45	1.42	1.33	0.66	0.65	0.37	0.98	1.75
<i>watrousi</i> ; Malaysia-Malaya	1.70	1.38	0.34	0.55	0.5	0.76	0.57	1.33	1.33	0.79	0.90	0.43	1.13	2.09
<i>nepalensis</i> ; Nepal	1.90	1.38	0.32	0.68	0.63	0.94	0.58	1.49	1.62	0.97	0.96	0.59	0.98	1.62
<i>meghalayana</i> ; India-Meghal	1.2	1.36	0.25	0.44	0.40	0.60	0.46	1.5	1.3	0.57	0.68	0.34	1.19	2.0
<i>minuta</i> ; Malaysia-Sabah	1.30	1.45	0.30	0.44	0.44	0.64	0.44	1.45	1.45	0.56	0.72	0.32	1.28	2.25
<i>rufa</i> ; Philippines	1.55	1.39	0.31	0.46	0.62	0.64	0.55	1.03	1.16	0.62	0.64	0.37	1.03	1.72
<i>semipunctata</i> ; Taiwan	1.70	1.61	0.40	0.56	0.55	0.90	0.55	1.63	1.63	0.75	0.88	0.44	1.17	2.0
<i>caovansungi</i> ; Vietnam	1.60	1.42	0.30	0.50	0.52	0.71	0.56	1.36	1.26	0.78	0.84	0.44	1.07	1.9
<i>sabahensis</i> ; Malaysia-Sabah	1.50	1.41	0.30	0.48	0.58	0.68	0.55	1.17	1.23	0.62	0.62	0.44	1.0	1.4
<i>taiwanensis</i> ; Taiwan	1.40	1.4	0.31	0.44	0.44	0.62	0.45	1.4	1.37	0.65	0.66	0.47	1.01	1.4
<i>grossa</i> ; Indonesia-Java	2.45	1.63	0.35	0.60	1.00	0.98	0.81	0.98	1.20	1.10	1.10	0.65	1.0	1.69
<i>unicolor</i> ; Cambodia	1.65	1.8	0.32	0.40	0.68	0.72	0.63	1.05	1.14	0.65	0.65	0.50	1.0	1.3

All measurements are in millimeters (mm).

Measurements of holotype: Head: length 0.27, width 0.44 mm; pronotum: length 0.45, width 0.64, height 0.44 mm, width/length 1.42, width/height 1.45; elytra: length 0.63, width 0.65, height 0.38 mm, width/length 1.03, width/height 1.71.

Head: Antero-lateral margins distinctly raised; clypeus very emarginate; eye slightly longer than broad, protruberant, widest at eyes (Figs. 2, 3). Antenna with segments 3 and 4 elongate; fig. 26.

Pronotum: 1.45 times as broad as head, moderately broader than long and very convex; anterior margin moderately curved; lateral outline broadly rounded (Figs. 2, 3).

Elytra: As broad as pronotum, a little broader than long and moderately convex; lateral outline with humeral angle very broadly rounded (Figs. 2, 3). Metathoracic wing present, very long. Meso- and meta-sternum with weak median carina, lateral lines complete and femoral lines incomplete, very short, a small tubercle present between metacoxae; metasternum short; meso- and meta-coxa narrowly separated. Legs: tarsal formula of male 4-4-4, female 4-4-3. Aedeagus as in fig. 60; with symmetrical pointed tip; parameres without dorsal interior lateral fold, without terminal setae. Spermatheca unknown.

Discussion: See *Besuchetionella castanea* n. sp.

Distribution: Japan (Honshu).

Etymology: Referring to an alternate name for Japan.

Besuchetionella malayana n. sp.

(Figs. 9, 27, 43, 61)

Type: Holotype: ♂, Malaysia: Malaya: Pahang: Mt. Benon, 1600-1900 m, 20 km S Kampong Uln Dong, 17-23.IV.1997, leg. Cechovsky, in Angelini collection.

Diagnostic description: Body length 1.45 mm (holotype). Dorsum uniformly reddish brown; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on elytra; punctation microscopic and sparse on entire dorsum, spaced from each other by 2-10 times their own diameter. Sutural striae superficial and barely visible, confined to apical 1/3 of elytron.

Measurements of holotype: Head: length 0.32, width 0.46 mm; pronotum: length 0.47, width 0.70, height 0.42 mm, width/length 1.48, width/height 1.66; elytra: length 0.66, width 0.70, height 0.38 mm, width/length 1.06, width/height 1.84.

Head: Antero-lateral margins uniformly raised; clypeus very emarginate; eye twice as long as broad, protruberant, widest at eyes (Fig. 9). Antenna as in

fig. 27.

Pronotum: 1.52 times as broad as head, moderately broader than long and moderately convex; anterior margin moderately curved; lateral outline broadly rounded and with subparallel sides (Fig. 43).

Elytra: As broad as pronotum, a little broader than long and slightly convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus as in fig. 61; tip elongate pointed; parameres elongate, with single apical seta. Spermatheca unknown.

Discussion: *Besuchetionella malayana* n. sp. is similar to *B. ater* n. sp., *B. buthanensis* n. sp. and *B. javaensis* n. sp. in the presence of sutural striae on the elytra and uniformly raised antero-lateral margins of the clypeus; it differs from all others in the shape and protuberance of the eyes, and in the smaller body length (1.45 mm, 1.68-1.75 in others).

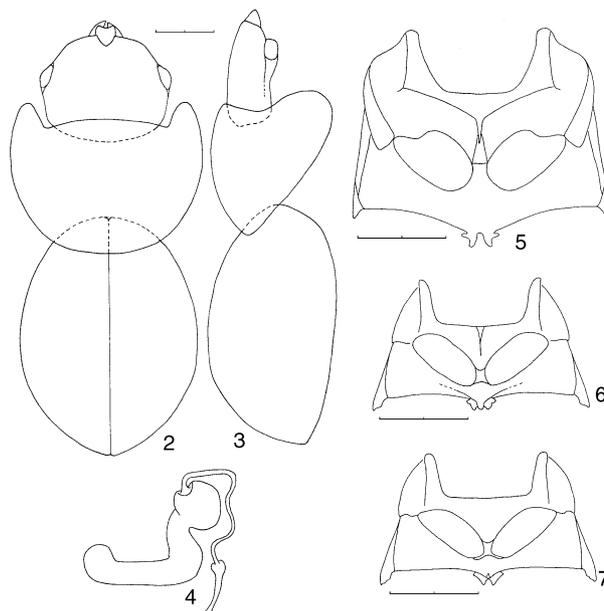
Distribution: Malaysia (Malaya).

Etymology: Referring to the country of Malaya.

Besuchetionella ater n. sp.

(Figs. 10, 28, 44, 62)

Types: Holotype: ♂, Burma: Shan Prov.: Lasho, 7-10.V.1982, leg. Lewis, in Angelini collection.



Figs. 2-7. Structures of *Besuchetionella*. Scale line units 0.20 mm except for fig. 4. 2. Dorsal view of body of *B. nipponica*; 3. Lateral view of body of *B. nipponica*; 4. Spermatheca of *B. loebliana*; 5. Meso- and meta-sternum of *B. loebliana*; 6. Meso- and meta-sternum of *B. nepalensis*; 7. Meso- and meta-sternum of *B. meghalayana*.

Paratype: Same data as holotype, 1 ♂ in Peck collection.

Diagnostic description: Body length 1.68 mm (holotype). Dorsum uniformly black in holotype, testaceous in immature paratype, venter testaceous; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on elytra; punctation microscopic and sparse on entire dorsum. Sutural striae superficial and barely visible, confined to apical 1/5 of elytron.

Measurements of holotype: Head: length 0.30, width 0.50 mm; pronotum: length 0.66, width 0.72, height 0.61 mm, width/length 1.09, width/height 1.18; elytra: length 0.72, width 0.86, height 0.43 mm, width/length 1.19, width/height 2.

Head: Antero-lateral margins uniformly raised; clypeus very emarginate; eye longer than broad, flattened, head widest posterior to eyes (Fig. 10). Antennal segments 3 and 4 shorter than 5 (Fig. 28).

Pronotum: 1.44 times as broad as head, little broader than long and very convex; anterior margin weakly curved; lateral outline broadly and evenly rounded (Fig. 44).

Elytra: A little broader than pronotum, moderately broader than long and barely convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Meso- and meta-sternum with sharp median carina, lateral lines complete and femoral lines incomplete, short and rounded at middle. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus as in fig. 62; aedeagus and parameres short and broad; parameres without apical setae. Spermatheca unknown.

Discussion: See *Besuchetionella malayana* n. sp.; it differs from *B. buthanensis* n. sp. and *B. javaensis* n. sp. in the shorter length of the sutural striae of the elytra.

Distribution: Burma.

Etymology: From Latin, referring to the dull black color.

***Besuchetionella buthanensis* n. sp.**

(Figs. 11, 29, 45)

Type: Holotype: ♀, Bhutan: Dorjula, 1000 m, leg. Bhatka, in Angelini collection.

Diagnostic description: Body length 1.75 mm (holotype). Dorsum uniformly reddish brown; antennae and legs uniformly testaceous. Microreticulation absent from entire dorsum; punctation microscopic and sparse on entire dorsum. Sutural striae superficial and barely visible, confined to apical 1/2 of elytron.

Measurements of holotype: Head: length 0.35,

width 0.58 mm; pronotum: length 0.59, width 0.78, height 0.61 mm, width/length 1.32, width/height 1.27; elytra: length 0.81, width 0.80, height 0.52 mm, width/length 0.98, width/height 1.53.

Head: Antero-lateral margins uniformly raised; clypeus very emarginate; eye longer than broad, slightly protruberant, widest at eyes (Fig. 11). Antennal segment 3 longer than 4 or 5 (Fig. 29).

Pronotum: 1.34 times as broad as head, slightly broader than long and very convex; anterior margin moderately curved; lateral outline broadly rounded (Fig. 45).

Elytra: A little broader than pronotum, moderately broader than long and moderately convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Legs: tarsal formula of male unknown; female 4-4-3. Aedeagus and spermatheca unknown.

Discussion: See *Besuchetionella malayana* n. sp. and *B. ater* n. sp.; it differs from *B. javaensis* n. sp. (Fig. 12) in smaller pronotum/head ratio and in the shape of the larger head.

Distribution: Bhutan.

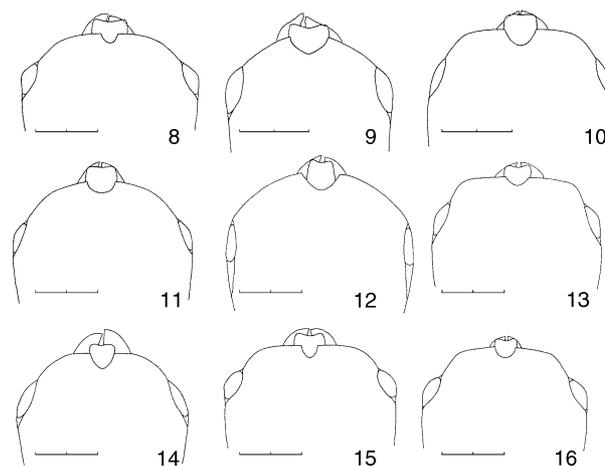
Etymology: Referring to the country of Bhutan.

***Besuchetionella javaensis* n. sp.**

(Figs. 12, 30, 46, 63)

Type: Holotype: ♂, Indonesia: Java: Maling, 21-25.V.1979, leg. Kader, in Angelini collection.

Diagnostic description: Length 1.75 mm (holotype). Dorsum uniformly dark reddish brown; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces



Figs. 8-16. Dorsal outlines of heads of *Besuchetionella*. Scale line units 0.20 mm. 8. *B. castanea*; 9. *B. meghalayana*; 10. *B. ater*; 11. *B. buthanensis*; 12. *B. javaensis*; 13. *B. loebliana*; 14. *B. watrousi*; 15. *B. nepalensis*; 16. *B. meghalayana*.

on elytra; punctation microscopic and sparse on pronotum and elytra, thicker on head. Sutural striae superficial and barely visible, confined to apical 1/2 of elytron.

Measurements of holotype: Head: length 0.33, width 0.52 mm; pronotum: length 0.65 width 0.84, height 0.63 mm, width/length 1.29, width/height 1.33; elytra: length 0.77 width 0.80, height 0.47 mm, width/length 1.03, width/height 1.7.

Head: Antero-lateral margins uniformly raised; clypeus very emarginate; eye longer than broad, flattened, widest at eyes (Fig. 12). Antennal segments 3 to 6 subequal in size (Fig. 30).

Pronotum: 1.61 times as broad as head, slightly broader than long and very convex; anterior margin moderately curved; lateral outline tightly rounded and with convergent sides (Fig. 46).

Elytra: Slightly narrower than pronotum, a little broader than long and moderately convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus as in fig. 63; aedeagus and parameres short and broad, aedeagus tip slightly pointed; parameres without large terminal seta but with small downward pointing setae on ventral side. Spermatheca unknown.

Discussion: See *Besuchetionella bhutanensis* n. sp.

Distribution: Indonesia (Java).

Etymology: Referring to the island of Java.

Besuchetionella loebliana n. sp.

(Figs. 4, 5, 13, 31, 47, 64, 65)

Types: Holotype: ♂, India: Madras: Anaimalai H.: 18 km N Valparai, 1250 m, 18.XI.1972, leg. C. Besuchet & I. Löbl, in Geneva Museum collection. Paratypes: Same data as holotype, 16 specimens (♂♂, ♀♀) in Geneva Museum, Angelini and Peck collections.

Diagnostic description: Length 1.30-1.35 mm (holotype ♂ 1.35 mm). Dorsum uniformly reddish-brown, venter testaceous; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on head, more evident on pronotum and elytra; punctation microscopic and sparse on entire whole dorsum. Sutural striae superficial and barely visible, confined to apical 1/2 of elytron.

Measurements of holotype: Head: length 0.28, width 0.44 mm; pronotum: length 0.42, width 0.60, height 0.45 mm, width/length 1.42, width/height 1.33; elytra: length 0.66, width 0.65, height 0.37 mm,

width/length 0.98, width/height 1.75.

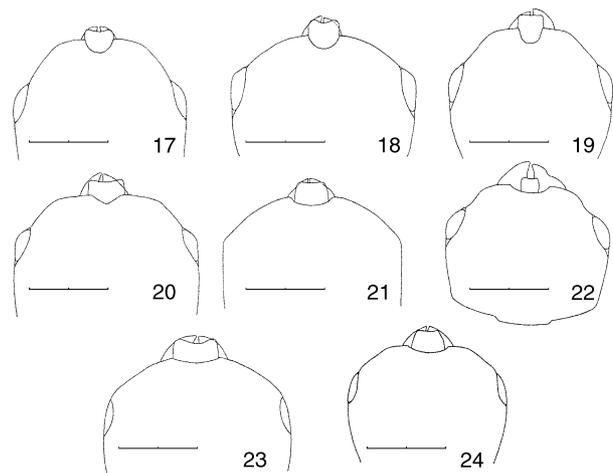
Head: Antero-lateral margins distinctly raised; clypeus very emarginate; eye twice as long as broad, barely protruberant, widest at eyes (Fig. 13). Antennal 3rd segment as long as 2nd, and as long as 4th + 5th + 6th combined, 8th 1/2 length of 7th (Fig. 31).

Pronotum: 1.36 times as broad as head, moderately broader than long and very convex; anterior margin moderately curved; lateral outline broadly rounded (Fig. 47).

Elytra: A little broader than pronotum, a little longer than broad and moderately convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Meso- and meta-sternum: median carina absent anteriorly, sharply defined posteriorly, lateral lines complete and femoral lines absent; meso- and metacoxae moderately separated (Fig. 5). Legs: tarsal formula of male 4-4-4, female 4-4-3. Aedeagus as in figs. 64, 65; aedeagus tapering to truncate tip in dorsal view; parameres broad, with separate sclerite at tip, with single long seta. Spermatheca as in fig. 4.

Discussion: *Besuchetionella loebliana* n. sp. is similar to *B. watrousi* n. sp., *B. nepalensis* n. sp., and *B. meghalayana* n.sp. in the presence of sutural striae on the elytra and the distinctly raised antero-lateral margins; it differs from *B. nepalensis* and *B. meghalayana* in the shape of the slightly protruberant eyes and in the shape of the antenna; it differs from *B. watrousi* in the greater body length, in the greater length of the sutural striae, and in the shape of the antennae.

Distribution: India (Madras).



Figs. 17-24. Dorsal outlines of heads of *Besuchetionella*. Scale line units 0.20 mm. 17. *B. minuta*; 18. *B. rufa*; 19. *B. semipunctata*; 20. *B. caovansungi*; 21. *B. sabahensis*; 22. *B. taiwanensis*; 23. *B. grossa*; 24. *B. unicolor*.

Etymology: Dedicated to Ivan Lobl, one of the collectors of this species.

***Besuchetionella watrousi* n. sp.**

(Figs. 14, 32, 48, 66)

Types: Holotype: ♂, Malaysia: Malaya: Pahang: G. Batu: Berinchang, 2000 m, 24.IV.1977, leg. L. Watrous, in Angelini collection. Paratype: Malaysia: Malaya: 7 km NE Pahang: NE Cameron Highlands, 25.IV.1977, leg. L. Watrous, 1 ♂, in Peck collection.

Diagnostic description: Length 1.65-1.70 mm (holotype ♂ 1.70 mm). Dorsum uniformly dark reddish brown, venter testaceous; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on elytra; punctation microscopic and sparse on head, even smaller and sparser on pronotum and elytra. Sutural striae superficial and barely visible, confined to apical 1/4 of elytron.

Measurements of holotype: Head: length 0.34, width 0.55 mm; pronotum: length 0.57, width 0.76, height 0.57 mm, width/length 1.33, width/height 1.33; elytra: length 0.79, width 0.90, height 0.43 mm, width/length 1.13, width/height 2.09.

Head: Antero-lateral margins moderately raised; clypeus very emarginate; eyes longer than broad, barely protruberant, widest at eyes (Fig. 14). Antennal segment 3 longer than 4 or 5 (Fig. 32).

Pronotum: 1.38 times as broad as head, a little broader than long and very convex; anterior margin moderately curved; lateral outline broadly rounded (Fig. 48).

Elytra: Much broader than pronotum, moderately broader than long and slightly convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Meso- and meta-sternum with weak median carina, lateral lines complete and femoral lines absent; metasternum short, meso- and meta-coxa almost touching. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus as in fig. 66; aedeagus elongate, with drawn-out tip; parameres with single elongate seta. Spermatheca unknown.

Discussion: See *Besuchetionella loebliana* n. sp.

Distribution: Malaysia (Malaya).

Etymology: Dedicated to L. Watrous, the collector of this species.

***Besuchetionella nepalensis* n. sp.**

(Figs. 6, 15, 33, 49, 67, 68)

Types: Holotype: ♂, Nepal: Goropani, 2700 m, 6.X.1983, leg. Löbl & Smetana, in Geneva Museum

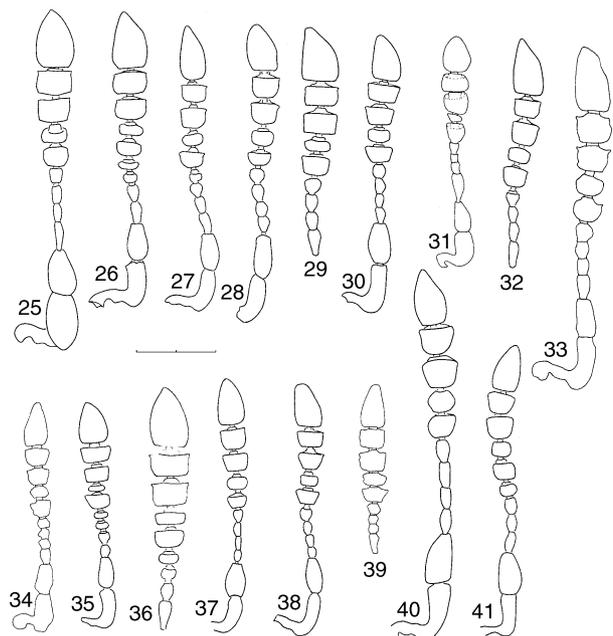
collection. Paratypes: Same data as holotype, 1 ♂ in Angelini and 1 ♀ in Peck collections.

Diagnostic description: Length 1.75-1.90 mm (holotype ♂ 1.90 mm). Dorsum uniformly reddish brown, venter testaceous; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on elytra; punctation microscopic and sparse on head and elytra, more reduced and sparse on pronotum. Sutural striae superficial and barely visible, confined to apical 1/3 of elytron.

Measurements of holotype: Head: length 0.32, width 0.68 mm; pronotum: length 0.63, width 0.94, height 0.58 mm, width/length 1.49, width/height 1.62; elytra: length 0.97, width 0.96, height 0.59 mm, width/length 0.98, width/height 1.62.

Head: Antero-lateral margins distinctly raised; clypeus very emarginate; eye slightly longer than broad, protruberant, head widest at eyes (Fig. 15). Antenna: 3rd antennal segment shorter than 2nd (3rd/2nd, 0.6) and shorter than 4th + 5th, 8th as long as 7th; (Fig. 33).

Pronotum: 1.38 times as broad as head, moderately broader than long and moderately convex; anterior margin weakly curved; lateral outline tightly rounded and with subparallel sides (Fig. 49).



Figs. 25-41. Antennae of *Besuchetionella*. Scale line units 0.20 mm. 25. *B. castanea*; 26. *B. nipponica*; 27. *B. malayana*; 28. *B. ater*; 29. *B. bhutanensis*; 30. *B. javaensis*; 31. *B. loebliana*; 32. *B. watrousi*; 33. *B. nepalensis*; 34. *B. meghalayana*; 35. *B. minuta*; 36. *B. semipunctata*; 37. *B. caovansungi*; 38. *B. sabahensis*; 39. *B. taiwanensis*; 40. *B. grossa*; 41. *B. unicolor*.

Elytra: Slightly narrower than pronotum, a little longer than broad and moderately convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Meso- and meta-sternum without median carina anteriorly, sharply posteriorly, both lateral and femoral lines incomplete, very short, a small tubercle present between the meta-coxae; metasternum short, meso- and meta-coxa narrowly separated (Fig. 6). Legs: tarsal formula of male 4-4-4, female 4-4-3. Aedeagus as in figs. 67, 68; aedeagus tapering to blunt point in dorsal view; parameres with single apical seta. Spermatheca unknown.

Discussion: See *Besuchetionella loebliana* n. sp.; it differs from *B. meghalayana* n. sp. (Fig. 16) in a greater body length and in the shape of the eyes.

Distribution: Nepal.

Etymology: Referring to the country of Nepal.

***Besuchetionella meghalayana* n. sp.**

(Figs. 7, 16, 34, 50, 69, 70)

Types: Holotype: ♂, India: Meghalaya: Garo Hills: Tura Peak, 700-900 m, 1.XI.1978, leg. Besuchet & Löbl, in Geneva Museum collection. Paratypes: Same data as holotype, 11 specimens in Geneva Museum, Angelini, and Peck collections; Meghalaya: Khasi Hills, 1700 m, 27.X.1978, Welloi, leg. Besuchet & Löbl, 3 specimens in Geneva Museum, Angelini, and Peck collections.

Diagnostic description: Length 1.2-1.3 mm (holotype ♂ 1.20 mm). Dorsum reddish brown, venter paler; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on elytra; punctation microscopic and sparse on head and pronotum, absent from elytra. Sutural striae superficial and little visible, confined to apical 1/4 of elytron.

Measurements of holotype: Head: length 0.25, width 0.44 mm; pronotum: length 0.40, width 0.60, height 0.46 mm, width/length 1.5, width/height 1.3; elytra: length 0.57, width 0.68, height 0.34 mm, width/length 1.19, width/height 2.

Head: Antero-lateral margins distinctly raised; clypeus very emarginate; eye twice as long as broad, slightly protruberant, widest at eyes (Fig. 16). Antenna: 3rd antennal segment shorter than 2nd (3rd/2nd, 0.5) and shorter than 4th + 5th, 8th shorter than 7th (Fig. 34).

Pronotum: 1.36 times as broad as head, moderately broader than long and very convex; anterior margin broadly curved; lateral outline broadly rounded and with subparallel sides (Fig. 50).

Elytra: A little broader than pronotum, a little

broader than long and slightly convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Meso- and meta-sternum without median carina, lateral lines absent and femoral lines incomplete, very short, a small tubercle present between metacoxae; metasternum short, meso- and meta-coxa almost touching (Fig. 7). Legs: tarsal formula of male 4-4-4, female 4-4-3. Aedeagus as in figs. 69, 70; aedeagus blunt, with terminal point; parameres with single strong dorsal-apical seta. Spermatheca unknown.

Discussion: See *Besuchetionella nepalensis* n. sp. *B. meghalayana* n. sp. is the smallest species known for this genus (and the tribe Agathidiini).

Distribution: India (Meghalaya).

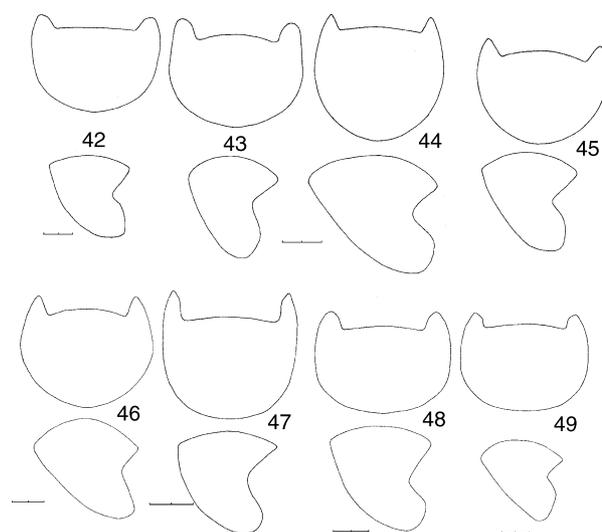
Etymology: Referring to the state of Meghalaya in India.

***Besuchetionella minuta* n. sp.**

(Figs. 17, 35, 51)

Type: Holotype: ♀, Malaysia: Sabah: Mt. Kinabalu, 15.V.1979, leg. Kader, in Angelini collection.

Diagnostic description: Length 1.30 mm (holotype ♀). Dorsum uniformly dark reddish brown; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces; punctation: head with punctures microscopic and barely visible, separated from each other by 5-10 times their own diameter, pronotum and elytra with punctures more superficial than on



Figs. 42-49. Dorsal and right lateral views of pronota of *Besuchetionella*. Scale line units 0.20 mm. 42. *B. castanea*; 43. *B. malayana*; 44. *B. ater*; 45. *B. bhutanensis*; 46. *B. javaensis*; 47. *B. loebliana*; 48. *B. watrousi*; 49. *B. nepalensis*.

head, equally spaced. Sutural striae absent, only traces remaining at apex of elytron.

Measurements of holotype: Head: length 0.30, width 0.44 mm; pronotum: length 0.44, width 0.64, height 0.44 mm, width/length 1.45, width/height 1.45; elytra: length 0.56, width 0.72, height 0.32 mm, width/length 1.28, width/height 2.25.

Head: Antero-lateral margins uniformly raised; clypeus very emarginate; eye longer than broad, slightly protruberant, widest at eyes (Fig. 17). Antenna as in fig. 35.

Pronotum: 1.45 times as broad as head, moderately broader than long and very convex; anterior margin moderately curved; lateral outline broadly rounded, converging posteriorly (Fig. 51).

Elytra: A little broader than pronotum, moderately broader than long and moderately convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Legs: tarsal formula of male unknown, female 4-4-3. Aedeagus and spermatheca unknown.

Discussion: *Besuchetionella minuta* n. sp. is similar to *B. rufa* n. sp., *B. semipunctata* n. sp. and *B. caovansungi* n. sp. in the absence of the sutural striae on the elytra, and in the shape of the head, with the clypeus very emarginate; it differs from *B. semipunctata* and *B. caovansungi* in having the antero-lateral margin of the head uniformly raised; it differs from *B. rufa* in the shape of the moderately transverse pronotum and in a shorter body length.

Distribution: Malaysia (Sabah).

Etymology: Referring to the small size of the species.

***Besuchetionella rufa* n. sp.**

(Figs. 18, 52, 71)

Type: Holotype: ♂, Philippines: Laguna: 4 km SE Los Banos: Mt. Makiling, 9.IV.1977, under bark, leg. L. Watrous, in Angelini collection.

Diagnostic description: Length 1.55 mm (holotype). Dorsum uniformly reddish-brown; antennae and legs uniformly testaceous. Microreticulation nearly absent, only vague traces on entire dorsum; punctation: head and pronotum with microscopic and sparse punctures, spaced from each other by 5-8 times their own diameter, elytra with punctures similar to those on head but sparser. Sutural striae absent, only traces at apex of elytron.

Measurements of holotype: Head: length 0.31, width 0.46 mm; pronotum: length 0.62, width 0.64, height 0.55 mm, width/length 1.03, width/height 1.16; elytra: length 0.62, width 0.64, height 0.37 mm, width/length 1.03, width/height 1.72.

Head: Antero-lateral margins uniformly raised; clypeus very emarginate; eye longer than broad, slightly protruberant, widest at eyes (Fig. 18). Antennae missing from specimen.

Pronotum: 1.39 times as broad as head, a little broader than long and very convex; anterior margin weakly curved; lateral outline broadly rounded (Fig. 52).

Elytra: As broad as pronotum, a little broader than long and moderately convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus damaged, reconstructed as in fig. 71; small, blunt; with broad parameres lacking apical setae. Spermatheca unknown.

Discussion: See *Besuchetionella minuta* n. sp.

Distribution: Philippines.

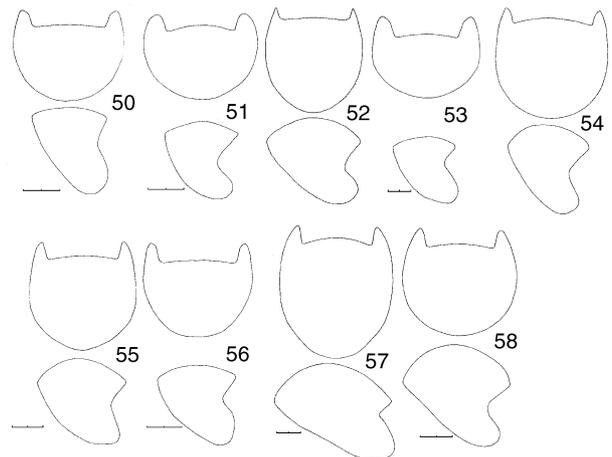
Etymology: Referring to the reddish color of the species.

***Besuchetionella semipunctata* n. sp.**

(Figs. 19, 36, 53, 72)

Type: Holotype: ♂, Taiwan: Fenchihu, 1400 m, 12.V.1977, leg. Klapperich, in Angelini collection.

Diagnostic description: Length 1.70 mm (holotype). Dorsum reddish brown, at sides paler; antennae and legs uniformly testaceous. Microreticulation absent; punctation: head with microscopic punctures, spaced from each other by 3-10 times their own diameter, pronotum with punctures as on head but sparser, elytra with larger punctures than on head but sparser. Sutural striae absent, only traces



Figs. 50-58. Dorsal and right lateral views of pronota of *Besuchetionella*. Scale line units 0.20 mm. 50. *B. meghalayana*; 51. *B. minuta*; 52. *B. rufa*; 53. *B. semipunctata*; 54. *B. caovansungi*; 55. *B. sabahensis*; 56. *B. taiwanensis*; 57. *B. grossa*; 58. *B. unicolor*.

at apex of elytron.

Measurements of holotype: Head: length 0.40, width 0.56 mm; pronotum: length 0.55, width 0.90, height 0.55 mm, width/length 1.63, width/height 1.63; elytra: length 0.75, width 0.88, height 0.44 mm, width/length 1.17, width/height 2.

Head: Antero-lateral margins distinctly raised; clypeus very emarginate; eye longer than broad, barely protruberant, widest at eyes (Fig. 19). Antennal segment 8 rectangular nearly as broad as 7, 9, and 10 (Fig. 36).

Pronotum: 1.61 times as broad as head, moderately broader than long and moderately convex; anterior margin moderately curved; lateral outline broadly rounded and with convergent sides (Fig. 53).

Elytra: Slightly narrower than pronotum, a little broader than long and slightly convex; lateral outline with humeral angle very broadly rounded. Metathoracic wings present, very long. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus as in fig. 72; broadest before middle; parameres very broad at base and partially enclosing aedeagus, narrow at tips, with single small seta. Spermatheca unknown.

Discussion: See *Besuchetionella minuta* n. sp.. It differs from *B. caovansungi* n. sp. (Figs. 20, 54) in the shape of the moderately transverse pronotum, in the very emarginate clypeus, and in the greater width ratio of the pronotum/head.

Distribution: Taiwan.

Etymology: Referring to the weakly developed punctures of the species.

Besuchetionella caovansungi n. sp.

(Figs. 20, 37, 54, 73)

Types: Holotype: ♂, Vietnam: Quang Prov.: 300 m, Na Hang Reserve, 16-20.V.1997, rainforest FIT (flight-intercept trap), leg. S. Peck, in Peck collection. Paratypes: Same data as holotype, 360 m, 1 specimen in Peck collection; same data as holotype, 300 m, 20-24.V.1997, 4 specimens in Peck collection, 2 specimens (♂, ♀) in Angelini collection; Cao Bang Prov.: 180 m, Ba Be National Park, 7-11.V.1997, forest FIT, leg. S. Peck, 1 specimen in Peck collection.

Diagnostic description: Length 1.45-1.60 mm (holotype ♂ 1.60 mm). Dorsum uniformly reddish-brown, venter testaceous; antennae uniformly testaceous or with dark antennal club; legs testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on head and more evident on elytra; punctuation microscopic and sparse on entire dorsum. Sutural striae absent.

Measurements of holotype: Head: length 0.30, width 0.50 mm; pronotum: length 0.52, width 0.71,

height 0.56 mm, width/length 1.36, width/height 1.26; elytra: length 0.78, width 0.84, height 0.44 mm, width/length 1.07, width/height 1.9.

Head: Antero-lateral margins distinctly raised; clypeus moderately emarginate; eye twice as long as broad, slightly protruberant, widest at eyes (Fig. 20). Antennal segment 3 smaller than 4, 5, or 6 (Fig. 37).

Pronotum: 1.42 times as broad as head, slightly broader than long and very convex; anterior margin moderately curved; lateral outline broadly rounded and with subparallel sides (Fig. 54).

Elytra: Broader than pronotum, a little broader than long and slightly convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Meso- and meta-sternum without median carina, lateral lines complete and femoral lines incomplete, very short, rounded at middle; metasternum short, meso- and meta-coxa narrowly separated. Legs: tarsal formula of male 4-4-4, female 4-4-3. Aedeagus as in fig. 73; tapering to point from broad base; parameres broadly tapering, with single small terminal seta. Spermatheca unknown.

Discussion: See *Besuchetionella minuta* n. sp. and *B. semipunctata* n. sp.

Distribution: Northern Vietnam.

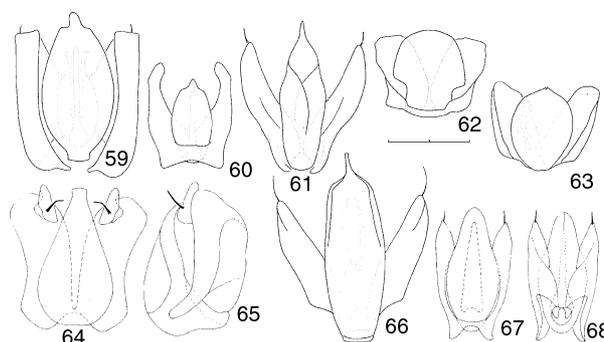
Etymology: Dedicated to Dr. Cao Van Sung, director of the Vietnamese Institute of Natural Resources and Biodiversity, Hanoi, in recognition for his aid to biodiversity research.

Besuchetionella sabahensis n. sp.

(Figs. 21, 38, 55, 74)

Type: Holotype: ♂, Malaysia: Sabah: Mt. Kinabalu, 15.V.1979, leg. Kader, in Angelini collection.

Diagnostic description: Length 1.50 mm (holo-



Figs. 59-68. Aedeagi of *Besuchetionella*; dorsal views unless otherwise indicated. Scale line units 0.20 mm. 59. *B. castanea*; 60. *B. nipponica*; 61. *B. malayana*; 62. *B. ater*; 63. *B. javaensis*; 64. *B. loebliana*; 65. *B. loebliana*, left lateral view; 66. *B. watrousi*; 67. *B. nepalensis*; 68. *B. nepalensis*, ventral view.

type). Dorsum uniformly reddish brown; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on elytra; punctation microscopic and sparse on entire dorsum. Sutural striae superficial and barely visible, confined to apical 1/4 of elytron.

Measurements of holotype: Head: length 0.30, width 0.48 mm; pronotum: length 0.58, width 0.68, height 0.55 mm, width/length 1.17, width/height 1.23; elytra: length 0.62, width 0.62, height 0.44 mm, width/length 1, width/height 1.4.

Head: Antero-lateral margins uniformly raised; clypeus moderately emarginate; eye longer than broad, flattened, not visible in dorsal view, widest at eyes (Fig. 21). Antenna as in fig. 38.

Pronotum: 1.41 times as broad as head, a little broader than long and very convex; anterior margin weakly curved; lateral outline tightly rounded and with convergent sides (Fig. 55).

Elytra: Slightly narrower than pronotum, as broad as long and very convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus as in fig. 74; tip with double points; parameres broad at base, tapering to blunt tips without terminal setae. Spermatheca unknown.

Discussion: *Besuchetionella sabahensis* n. sp. is similar to *B. taiwanensis* n. sp., *B. grossa* n. sp., and *B. unicolor* n. sp. in the shape of the slightly emarginate clypeus; it differs from *B. grossa* and *B. unicolor* in the presence of sutural striae on the elytra; it differs from *B. taiwanensis* in the shape of the head with eyes not visible in dorsal view, in the shape of the slightly transverse pronotum, and in the uniformly raised antero-lateral margin of the clypeus.

Distribution: Malaysia (Sabah).

Etymology: Referring to the part of Malaysia called Sabah, on the island of Borneo.

***Besuchetionella taiwanensis* n. sp.**

(Figs. 22, 39, 56, 75, 76, 77)

Types: Holotype: ♂, Taiwan: Fenchihu, 1400 m, 12.V.1977, leg. Klapperich, in Angelini collection. Paratypes: Same data as holotype, 2 specimens (♂, ♀) in Angelini and Peck collections.

Diagnostic description: Length 1.4-1.5 mm (holotype ♂ 1.40 mm). Dorsum reddish brown, sides of pronotum clearer, venter testaceous; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on pronotum and more evident on elytra; punctation microscopic and sparse on entire dorsum. Sutural

striae superficial and barely visible, confined to apical 1/3 of elytron.

Measurements of holotype: Head: length 0.31, width 0.44 mm; pronotum: length 0.44, width 0.62, height 0.45 mm, width/length 1.4, width/height 1.37; elytra: length 0.65, width 0.66, height 0.47 mm, width/length 1.01, width/height 1.4.

Head: Antero-lateral margins distinctly raised; clypeus moderately emarginate; eye twice as long as broad, a little protruberant, widest at eyes (Fig. 22). Antennae: 3rd antennal segment as long as 4th + 5th, 8th about as long as 7th (Fig. 39).

Pronotum: 1.4 times as broad as head, a little broader than long and very convex; anterior margin weakly curved; lateral outline broadly rounded and with convergent sides (Fig. 56).

Elytra: A little broader than pronotum, a little broader than long and very convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Meso- and meta-sternum without median carina, lateral lines absent and femoral lines incomplete, very short, rounded at middle; metasternum short, meso- and meta-coxa touching. Legs: tarsal formula of male 4-4-4, female 4-4-3. Aedeagus as in figs. 75-77; tip bluntly rounded; parameres not enveloping aedeagus, with single large terminal seta. Spermatheca unknown.

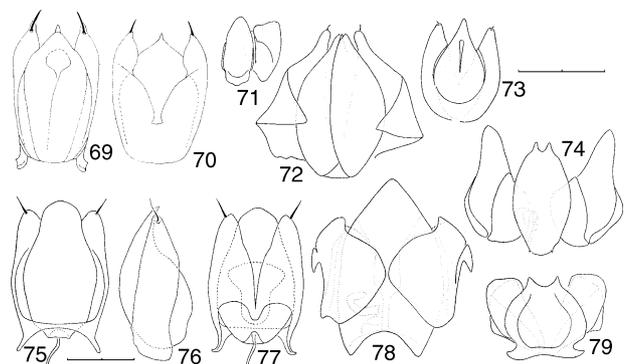
Discussion: See *Besuchetionella sabahensis* n. sp.

Distribution: Taiwan.

Etymology: Referring to the island of Taiwan.

***Besuchetionella grossa* n. sp.**

(Figs. 23, 40, 57, 78)



Figs. 69-79. Aedeagi of *Besuchetionella*; dorsal views unless otherwise indicated. Scale line units 0.20 mm; upper right for all figures except figs. 75-77; lower left for figs. 75-77. 69. *B. meghalayana*; 70. *B. meghalayana*, ventral view; 71. *B. rufa*; 72. *B. semipunctata*; 73. *B. caovansungi*; 74. *B. sabahensis*; 75. *B. taiwanensis*; 76. *B. taiwanensis*, left lateral view; 77. *B. taiwanensis*, ventral view; 78. *B. grossa*; 79. *B. unicolor*.

Types: Holotype: ♂, Indonesia: Java: Maling, 21-25.V.1979, leg. Kader, in Angelini collection. Paratype: Same data as holotype, 1 ♂, in Peck collection.

Diagnostic description: Length 2.45 mm (holotype ♂). Dorsum uniformly reddish brown, venter paler; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on elytra; punctation: head with small punctures, superficial, spaced from each other by 1-6 times their own diameter, pronotum with punctures as on head, spaced from each other by 1-10 times their own diameter, elytra with microscopic and sparse punctures. Sutural striae absent, only traces at apex of elytron.

Measurements of holotype: Head: length 0.35, width 0.60 mm; pronotum: length 1.00, width 0.98, height 0.81 mm, width/length 0.98, width/height 1.20; elytra: length 1.10, width 1.10, height 0.65 mm, width/length 1.00, width/height 1.69.

Head: Antero-lateral margins uniformly raised; clypeus slightly emarginate; eye longer than broad, flattened, widest at eyes (Fig. 23). Antennal segment 5 longer than 3, 4, or 6 (Fig. 40).

Pronotum: 1.63 times as broad as head, a little broader than long and very convex; anterior margin moderately curved; lateral outline broadly rounded and with convergent sides (Fig. 57).

Elytra: A little broader than pronotum, as broad as long and moderately convex; lateral outline with humeral angle very broadly rounded. Metathoracic wings present, very long. Meso- and meta-sternum median carina absent anteriorly, sharp posteriorly, lateral lines complete and femoral lines absent; metasternum short, meso- and meta-coxa almost touching. Legs: tarsal formula of male 4-4-4, female unknown. Aedeagus as in fig. 78; very wide at base, tapering to blunt point; parameres enveloping aedeagus, with lateral projection, lacking terminal setae. Spermatheca unknown.

Discussion: See *Besuchetionella sabahensis* n. sp.; it differs from *B. unicolor* in greater body length. *B. grossa* n. sp. is the largest species described for this genus.

Distribution: Indonesia (Java).

Etymology: Referring to the large size of the species.

***Besuchetionella unicolor* n. sp.**

(Figs. 24, 41, 58, 79)

Types: Holotype: ♂, Cambodia: Cheam, VIII. 1935, leg. Sanz, in Angelini collection. Paratypes: Same data as holotype, 1 ♀ specimen in Peck

collection.

Diagnostic description: Length 1.65 mm (holotype ♂). Dorsum uniformly dark reddish brown, paler in an immature paratype, venter reddish brown; antennae and legs uniformly testaceous. Microreticulation nearly absent from entire dorsum, only vague traces on elytra; punctation microscopic and sparse on entire dorsum. Sutural striae absent.

Measurements of holotype: Head: length 0.32, width 0.40 mm; pronotum: length 0.68, width 0.72, height 0.63 mm, width/length 1.05, width/height 1.14; elytra: length 0.65, width 0.65, height 0.50 mm, width/length 1.00, width/height 1.30.

Head: Antero-lateral margins uniformly raised; clypeus slightly emarginate; eye longer than broad, flattened, widest at eyes (Fig. 24). Antenna as in fig. 41.

Pronotum: 1.8 times as broad as head, a little broader than long and very convex; anterior margin weakly curved; lateral outline broadly rounded and with evenly rounded sides (Fig. 58).

Elytra: Slightly narrower than pronotum, as broad as long and very convex; lateral outline with humeral angle very broadly rounded. Metathoracic wing present, very long. Meso- and meta-sternum with weak median carina, lateral lines complete and femoral lines absent; meta-sternum short, meso- and meta-coxa almost touching. Legs: tarsal formula of male 4-4-4, female 4-4-3. Aedeagus as in fig. 79; tip with double points; parameres broad and truncate at tip, lacking terminal setae. Spermatheca unknown.

Discussion: See *Besuchetionella grossa* n. sp.

Distribution: Cambodia.

Etymology: Referring to the uniform color of the species.

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亞洲產 *Agathidiini* 族（鞘翅目：球蠹蟲科）一新屬 *Besuchetionella* 與十八新種之描述

Fernando Angelini¹ Stewart B. Peck²

本文除探討屬間親緣關係外，亦包括屬間檢索表，及屬內特徵區分表。新屬 *Besuchetionella* 與 18 個新種皆分布於舊北區：一新種產於日本，其他 16 種分布於遠東區，名錄與詳細分布地區如下：*Besuchetionella ater* (緬甸)；*B. bhutanensis* (不丹)；*B. caovansungi* (越南)；*B. castanea* (日本)；*B. grossa* (印尼：爪哇)；*B. javaensis* (印尼：爪哇)；*B. loebliana* (印尼：Madras)；*B. malayana* (馬來西亞：馬來亞)；*B. meghalayana* (印度：Meghalaya)；*B. minuta* (馬來西亞：沙巴)；*B. nepalensis* (尼泊爾)；*B. nipponica* (日本)；*B. rufa* (菲律賓)；*B. sabahensis* (馬來西亞：沙巴)；*B. semipunctata* (臺灣)；*B. taiwanensis* (臺灣)；*B. unicolor* (柬埔寨)；*B. watrousi* (馬來西亞：馬來亞)。

關鍵詞：球蠹蟲科，*Besuchetionella* 屬，分類，東南亞。

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