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Autor: Löbl, Ivan

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On *Baeocera* (Coleoptera: Staphylinidae: Scaphidiinae) of New Guinea

IVAN LÖBL

Muséum d'histoire naturelle, Case postale 6434, CH-1211 Genève 6, Switzerland
ivan.lobl@mhn.ville-ge.ch

Recently examined collections of scaphidiine beetles from the Morobe district, Papua New Guinea, contained following new species of *Baeocera*: *B. cuccodoroi* sp. n., *B. curta* sp. n., *B. flagrans* sp. n., *B. fortepunctata* sp. n., *B. ovicula* sp. n., *B. praedicta* sp. n., *B. praesignis* sp. n., *B. prodroma* sp. n., *B. prolixa* sp. n., *B. prospecta* sp. n., and *B. provida* sp. n. The new species are described and illustrated, and a key to the *Baeocera* of New Guinea is provided.

Key-words: Coleoptera, Staphylinidae, Scaphidiinae, Baeocera, taxonomy, New Guinea.

INTRODUCTION

Baeocera Erichson is with some 220 described species one of the larger genera of the scaphidiines and world-wide in distribution. It is particularly species-rich in South East Asia (LÖBL 1997) and, based on unpublished material housed in the Geneva Muséum d'histoire naturelle, contains a large number of undescribed Neotropical species. As far as New Guinea and the neighbouring islands concerned, only seven species of *Baeocera* are presently known from the main island (LÖBL 1975), and one, *B. bournei* LÖBL, from New Ireland (LÖBL 1980). Recently, I have studied material collected in New Guinea by G. Cuccodoro (Geneva), L. Deharveng (Toulouse), S. Peck (Ottawa) and J. Balogh (Budapest). Most of this material comes from the Morobe district, in northeastern Papua New Guinea. The Morobe district is among the few better prospected areas of New Guinea because field work there is facilitated by infrastructure available at the Wau Ecological Institute. Nevertheless, the studied material contains 12 species of *Baeocera*, all but *B. punctata* (LÖBL) new to sciences. It is also noteworthy that the sole species of *Baeocera* so far reported from the Morobe district, *B. bacchusi* (LÖBL), was not within the new collections. These facts suggest that a significantly higher number of species of *Baeocera* inhabit the forested sites of the Morobe district, as other areas of New Guinea.

MATERIAL AND METHODS

The studied material is housed in the collections of the Muséum d'histoire naturelle, Geneva (MHNG) and Hungarian Natural History Museum, Budapest (HNHM). Most specimens were extracted in Winkler/Moczarski and Berlese devices from forest floor and moist, rotted wood samples. For methods see LÖBL (1992).

SYSTEMATICS

Five monophyletic species groups are represented among the New Guinean *Baeocera*. Most species (*B. bacchusi* (LÖBL), *B. biroi* (LÖBL), *B. egena*, (LÖBL), *B.*

papua (LÖBL), *B. punctata* (LÖBL), *B. flagrans* sp. n., *B. fortepunctata* sp. n., *B. prodroma* sp. n., *B. prolixa* sp. n., *B. provida* sp.n., and *B. bournei* LÖBL from New Ireland) are members of the *B. lenta* group which is defined by the highly derived internal sac of the aedeagus (see LÖBL 1971). These species share a very long, membranous duct that is everted from the median lobe. The group is species-rich in South East Asia and known also from Eastern Africa, Japan, Fiji, Queensland, and the Caroline islands. The second group consists of *B. bironis* (PIC), *B. insperata* (LÖBL), *B. praesignis* sp. n. and *B. prospecta* sp. n. from New Guinea, and *B. alternans* LÖBL from Queensland. Their aedeagi have a basal cluster of long, spine-like structures and one flat central sclerite, and lack the extruded duct that defines the former group. Members of the *B. ceylonensis* group possess a similar basal cluster of spine-like structures but possess also the everted duct and have, unlike members of the *B. lenta* group, notched parameres (LÖBL 1992). Obviously, the cluster of spine-like structures evolved at least twice within the genus. The third group contains *B. matthewsi* (LÖBL) from Australia, and *B. praedicta* sp. n., *B. ovicula* sp. n. These three species share the external and many aedeagal characters with members of the *B. bironis* group, but lack the cluster of spine-like structures and the extruding duct of the internal sac. The *B. satana* group is defined also by highly derived aedeagi that are strongly asymmetrical and have very complex internal sacs (LÖBL 1992). In addition, the members of the group have sexualy modified male tibiae that are unique within *Baeocera*. This group was known so far only from the Himalayas and from Japan. One of the Papuan species, *B. curta* sp. n., possesses the aedeagal characters of the latter group but not the modified male tibiae. The fifth species group consists of *B. cuccodoroi* sp. n. that is isolated within the genus.

Key to the Baeocera of New Guinea

1 Elytra with sutural striae shortened, evanescent posterior line pronotal lobe and/or scutellum 2
- Elytra with sutural striae entire, extended from apex to base and ending either laterally pronotal lobe or lengthened along basal margins to form basal striae 8
2 Pronotal punctuation dense, usually conspicuously coarse, distinct at low (20x) magnification, elytral punctation coarse.....3
- Pronotal punctuation sparse, very fine, hardly visible at higher (50x) magnification, elytral punctation very fine or coarse 6
3 Exposed portion of metepisterna large, separated from metasternum by deep suture 4
- Exposed portion of metepisterna reduced, suture between metepisterna and metasternum indicated by outer puncture row 5
4 Body length 1.30-1.45 mm. Metasternum and abdominal sternite 1 apparently smooth, coarse punctures margining submesocoxal lines and base of sternite 1 excepted .....*B. praedicta* sp. n.
- Body length 1.90-2.05 mm. Metasternum and abdominal sternite 1 distinctly punctate .....*B. prospecta* sp. n.
5 Mesepisterna impunctate. Elytra with punctures partly larger than puncture diameters ..... *B. fortepunctata* sp. n.
- Mesepisterna distinctly punctate. Elytral punctures smaller than puncture diameters .....*B. prodroma* sp. n.
6 Apical process of median lobe short and thick. Parameres straight, widened apically ..... *B. biroi* (LÖBL)

- Apical process of median lobe elongate and narrow in lateral view 7

7 Parameres straight in apical two thirds and not widened apically (Fig. 6) ..... *B. prolixa* sp. n.

- Parameres curved in apical two thirds and widened apically (Fig. 3) ..... *B. provida* sp. n.

8 Metepisternum separated from metasternum by deep suture. Lateral portion of metasternum and abdominal sternite 1 apparently impunctate, punctures margining submesocoxal lines and base of abdominal sternite 1 excepted 9

- Metasternum and metepisternum fused, metepisternal suture indicated by outer puncture row. Lateral parts of metasternum and abdominal sternite 1 distinctly punctate 14

9 Elytral with entire basal striae joining sutural and lateral striae, or basal striae very shortly interrupted at humeral area. Metepisternal suture strongly arcuate ..... *B. curta* sp. n.

- Elytra lacking basal striae or with basal striae shortened laterally and wide interval between basal striae and lateral striae. Metepisternal suture straight or hardly arcuate 10

10 Mesepimera distinct. Elytra entirely or in part coarsely punctate 11

- Mesepimera fused, mesepimeral ridge absent. Elytra very finely punctate ..... *B. cuccodoroi* sp. n.

11 Body length 1.3 - 1.4 mm. Metasternum very short, submesocoxal areas about as long as shortest interval between submesocoxal lines and metacoxae ..... *B. ovicula* sp. n.

- Body length 1.4 – 1.75 mm. Metasternum not particularly short, submesocoxal areas distinctly shorter than shortest interval between submesocoxal lines and metacoxae 12

12 Elytral punctation becoming gradually finer toward apices 13

- Elytral punctation extremely fine at base and on apical half of disc, very coarse on area between basal tenth and apical half ..... *B. praesignis* sp. n.

13 Basal and lateral striae of elytra widely separated. Internal sac of aedeagus with apical cluster of short spine-like structures ..... *B. insperata* (LÖBL)

- Basal and lateral striae of elytra widely separated. Internal sac of aedeagus lacking apical cluster of spine-like structures ..... *B. bironis* (PIC)

14 Elytra with sutural striae comparatively short, not or hardly curved along pronotal base and not lengthened laterally ..... *B. egena* (LÖBL)

- Elytra with sutural striae long, distinctly curved along pronotal base and lengthened laterally to form basal striae 15

15 Basal striae of elytra joined to lateral striae ..... *B. bacchusi* (LÖBL)

- Basal striae of elytra separated from lateral striae 16

16 Elytra with coarse punctation forming irregular puncture rows, intervals between rows glabrous ..... *B. flagrans* sp. n.

- Elytral punctation almost even, without trace of puncture rows 17

17 Body very dark reddish-brown to black. Elytral punctation coarse, puncture intervals at centre of disc about as 1.5 to 2 puncture diameters ..... *B. punctata* (LÖBL)

- Body fairly light reddish-brown. Elytral punctation fine, puncture intervals at centre of disc about as 3 or 4 puncture diameters ..... *B. papua* (LÖBL)

Baeocera provida sp. n.

Holotype ♂: Papua New Guinea, labelled "Nlle Guinée, 30.XI.78, rte de Bulolo à Wau, 2000m, L. Deharveng, no. 247" (MHNG).
Paratypes: same data as holotype, 2♂ and same data but no. 248, 3♀ (MHNG); Wau, 22.IX.-30.IX.1969, J. Balogh, No. NGW-B.125, 1♂ and No. NGW-R.9, 1♂ (HMNH, MHNG); Wau, Kilolo Creek, 1000m, 31.VIII.1968, J. Balogh, No. NG-W-B.59, 1♀ (HNHM); Wau, Mt. Kaindi, 10.IX.1968, J. Balogh, No.NG-W-B.105, 1♀ (HNHM).

Description. Length 1.05-1.20 mm. Body convex, dark reddish-brown to black, abdomen and appendages lighter than body, ochreous. . Relative length of antennal segments 3 to 11 as: 8: 9: 11: 10: 11: 9: 12: 11: 13 (holotype); segments 3 to 6 slender, almost equally wide; segments 7 and 8 each about 1.5 times as wide as segment 6, segment 8 about 3 times as long as wide; segments 9 to 11 suboval, segment 11 about 3 times as long as wide. Lateral contours of pronotum and elytra separately arcuate in dorsal view. Lateral pronotal ridge arcuate (lateral view), narrow, concealed in dorsal view. Pronotum and elytra lacking microsculpture, pronotal punctation sparse and very fine, indistinct at low (25 times) magnification. Elytral punctation fairly sparse and fine, consisting of punctures not well delimited, much larger than those on pronotum, much smaller than puncture intervals. Scutellum with exposed tip. Elytra with adsutural areas parallel, finely punctate, sutural striae shortened, evanescent before reaching anterior third of sutural length. Lateral striae punctate. Epipleural striae entire, gradually converging to margin. Supra-epipleural area comparatively wide, very finely punctate. Hypomera impressed, impunctate. Mesepisterna extremely finely punctate. Mesosternum lacking median ridge, fused with metasternum. Lateral margins of mesosternum with coarse, setiferous punctures. Mesepimeral ridge parallel, about twice as long as interval to mesocoxae. Metasternum not shortened, smooth at middle and near metacoxae, remaining surface with punctation dense and coarse. Submesocoxal lines hardly arcuate, with marginal punctures coarse, not elongate, not extending laterally. Submesocoxal areas about as long as third of shortest interval to metacoxae. Metepisterna fused to metasternum, metepisternal suture indicated by outer puncture row. Abdominal sternite 1 with punctation dense and coarse, basal punctures larger than discal punctures, not or weakly elongate, uninterrupted in middle. Tibiae hardly curved, metatibiae narrowed toward base.

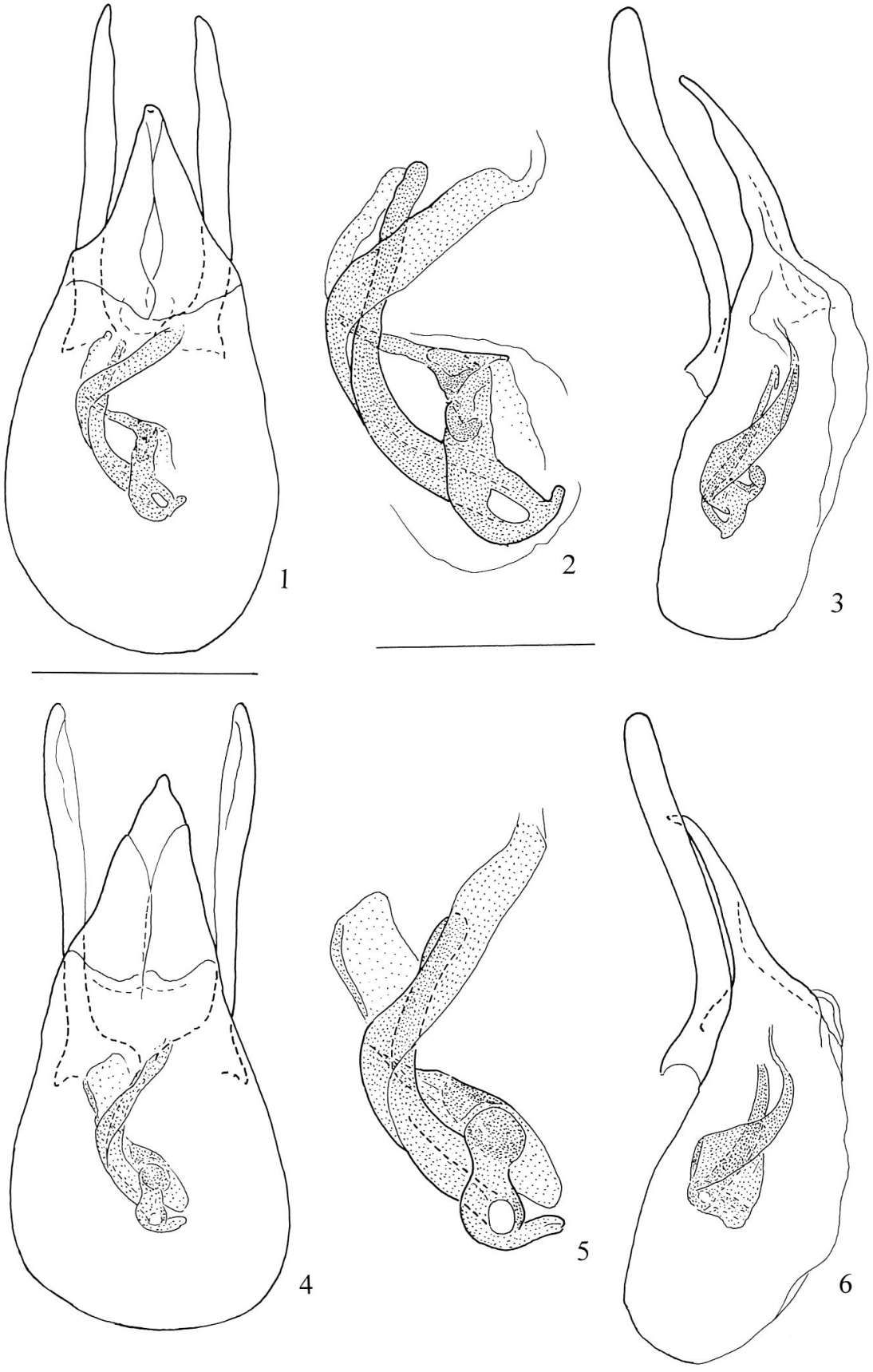
Male sexual characters. Segments 1 to 3 of protarsi moderately widened. Aedeagus (Figs 1 to 3) 0.26-0.30 mm long. Median lobe symmetrical, with basal bulb weakly sclerotized and small ventral tubercle. Apical process long, weakly inclined, narrow and sinuate ventrally in lateral view, tapering toward apex in dorsal view. Internal sac complex, with membranes lacking spine-like or scale-like structures. Parameres narrow and weakly sinuate in dorsal view, widened apically and curved in lateral view.

Habitat. Montain rain forest, litter.

Comments. This new species resembles *B. punctata* with which shares the punctation pattern and many other diagnostic characters. It differs drastically from *B. punctata* by the strongly shortened sutural striae. In addition, these two species may be easily distinguished by the shape of their aedeagi.

Baeocera prolixa sp. n.

Holotype ♂: Papua New Guinea (SE) Kiunga, 23.VII.-2.VIII.1969, J. Balogh, No.NGK-B.21 (HNHM).
Paratype ♂: same data as holotype (MHNG).



Figs 1-6. Aedeagi in *Baeocera*, dorsal and lateral views; 1-3: *B. provida* sp. n., internal sac (2) in detail; 4-6: *B. prolixa* sp. n., internal sac (5) in detail. Scale bars = 0.1 mm (1, 3, 4, 6), 0.05 mm (2, 5).

Description. Length 0.90-1.00 mm. Body uniformly light, ochreous. Femora and tibiae as body, antennae and tarsi lighter. In most external characters very similar to *B. provida*. In addition to the smaller body size and lighter colour, it differs from latter by the punctures margining submesocoxal lines extending laterally along mesepimeral margins and by the aedeagal characters. Aedeagus (Figs 4 to 6) 0.31-0.33 mm long, with apical process of median lobe gradually narrowed apically and curved at tip in lateral view, and posterior 3/4 of parameres almost evenly wide and hardly curved in lateral view.

Baeocera fortepunctata sp. n.

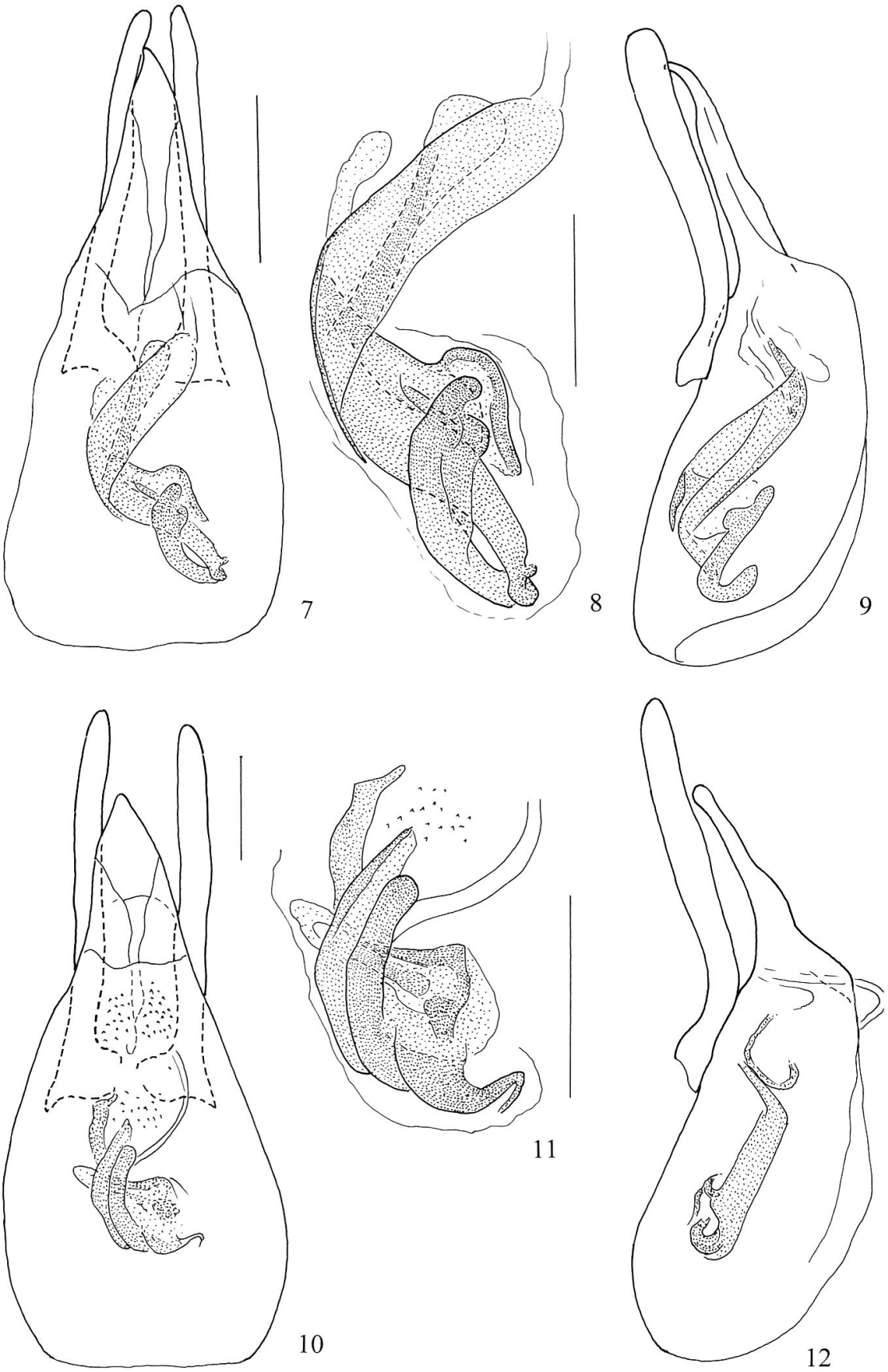
Holotype ♂: Papua New Guinea, labelled "Nlle Guinée, 29.XI.78, rte de Kaindi (Wau), 2000m, L. Deharveng, no. 228" (MHNG).

Description. Length 1.20 mm. Body convex, uniformly dark reddish-brown, femora and tibiae slightly lighter than body. Antennae and tarsi distinctly lighter than body, ochreous. Relative length of antennal segments 3 to 11 as: 9: 9: 11: 9: 12: 10: 13: 12: 14; segments 3 to 6 slender, segments 5 and 6 slightly wider than segment 4; segments 7 and 8 each about 1.5 times as wide as segment 6, segment 8 about 3 times as long as wide; segments 9 and 10 widened toward apical third, segment 11 suboval, slightly more that twice as long as wide. Lateral contours of pronotum and elytra continuously arcuate in dorsal view. Lateral pronotal ridge arcuate (lateral view), narrow, concealed in dorsal view. Pronotum and elytra lacking microsculpture, pronotal punctation dense and coarse, distinct at low (16 times) magnification. Elytral punctation coarse and dense, consisting of punctures not well delimited, larger than those on pronotum, mostly smaller than puncture intervals. Scutellum with exposed tip minute. Elytra with adsutural areas diverging anteriorly, coarsely punctate, sutural striae shortened, evanescent before reaching anterior fourth of sutural length. Lateral striae coarsely punctate. Epipleural striae entire, gradually converging to margin. Supra-epipleural area coarsely punctate. Hypomera impressed, with few distinct punctures. Mesepisterna extremely finely punctate. Mesosternum lacking median ridge, fused with metasternum. Lateral margins of mesosternum with coarse, setiferous punctures. Mesepimeral ridge parallel, about twice as long as interval to mesocoxae. Metasternum not shortened, smooth at middle, remaining surface with punctation dense and coarse; setal patch absent. Submesocoxal lines hardly arcuate, with marginal punctures coarse, not elongate, extending laterally along metepisternal suture. Submesocoxal areas about as long as third of shortest interval to metacoxae. Metepisterna fused with metasternum, metepisternal suture indicated by outer puncture row. Abdominal sternite 1 with punctation dense and coarse, basal punctures larger than discal punctures, uninterrupted in middle. Tibiae straight, metatibiae moderately narrowed toward base.

Male sexual characters. Segments 1 to 3 of protarsi moderately widened, bearing tenant setae. Aedeagus (Figs 7 to 9) 0.38 mm long. Median lobe symmetrical, with basal bulb weakly sclerotized and small ventral tubercle. Apical process long, oblique, narrowed and curved ventrally, with acute tip in lateral view, gradually narrowed apically in dorsal view. Internal sac complex, with membranes lacking spine-like or scale-like structures. Parameres narrow and almost straight in dorsal view, fairly wide and moderately curved in lateral view.

Habitat. Soil sample in bamboo montain rain forest.

Comments. This species has conspicuously coarse pronotal punctation. Within the previously described species it resembles most to *B. punctata*, from which it may be easily separated by the pronotal punctation and the shortened sutural striae.



Figs 7-12. Aedeagi in *Baeocera*, dorsal and lateral views; 7-9: *B. fortepunctata* sp. n., internal sac (9) in detail; 10-12: *B. prodroma* sp. n., internal sac (11) in detail. Scale bars = 0.1 mm (7, 9-12), 0.05 mm (8).

Baeocera prodroma sp. n.

Holotype ♂: Papua New Guinea, labelled "Nlle Guinée, 30.XI.78, rte de Bulolo à Wau, no 247, L. Deharveng" (MHNG).
Paratypes: with same data as holotype, 3♀; same data but no. 248, 1♀; same data but no. 234, 1♀ (all MHNG).

Description. Length 1.10-1.20 mm. With most diagnostic characters as in *B. fortepunctata*, differing from latter by: lateral contours of pronotum and elytra separately arcuate; pronotal and elytral punctation less coarse; exposed tip of scutellum fairly large; epipleura fairly wide, finely punctate; hypomera and mesepisterna distinctly punctate; basal punctures of abdominal sternite 1 as large as discal punctures; metatibiae gradually thickened toward apex; aedeagus (Figs. 10 to 12) 0.32 mm long, with apical process of median lobe flattened (lateral view), blunt at tip and not curved ventrally, internal sac bearing fine, scale-like structures and much shorter sclerites.

Habitat. Humus and *Araucaria hunsteinii* and *Ficus* litter.

Baeocera flagrans sp. n.

Holotype ♂: Papua New Guinea, Morobe distr., Biaru Rd. Mt. Kolorong, 2200, 8.VI.1992, G. Cuccodoro #19D (MHNG).
Paratypes: same data as holotype but #19D, 1♂, 3♀; same data but #19C, 1♀; same data but 2000m, 3.VI.1992, #15C, 2♀ (all MHNG).

Description. Length 1.25-1.30 mm. Body strongly convex, dark reddish-brown to almost black, appendages and exposed abdominal segments, dark sternite 1 expected, ochreous. Relative length of antennal segments 3 to 11 as: 10: 10: 12: 10: 13: 11: 14: 14: 17 (holotype); segments 3 and 4 equally slender, segments 5 and 6 slightly wider than segment 4; segments 7 and 8 slender, wider than segment 6, 8 about 4 times as long as wide; segments 9 to 11 much wider than segment 8, sub-oval, segment 11 about 2.5 times as long as wide. Lateral contours of pronotum and elytra continuous in dorsal view, contours of elytra sub-parallel in anterior half, arcuate posterior middle. Lateral pronotal ridge arcuate (lateral view), narrow, concealed in dorsal view. Pronotum and elytra lacking microsculpture, pronotal punctation sparse and very fine, hardly visible at 50 times magnification. Tip of scutellum exposed. Elytral punctation coarse latero-anteriorly and partly arranged to form coarse puncture rows, intervals between puncture rows very finely punctate. Areas near elytral apices with irregular, fairly fine to coarse punctation. Elytra with adsutural areas parallel, punctate, sutural striae entire, curved at base to form basal striae extending about to middle of basal width. Lateral striae punctate. Epipleural striae entire, distant from margins. Supra-epipleural area impunctate. Hypomera glabrous, impressed. Mesepisterna impunctate. Mesosternum fused to metasternum, lacking median ridge, with coarse, setiferous punctures along lateral margins. Mesepimeral ridge about twice as long as interval to mesocoxae. Metasternum coarsely and densely punctate, except on smooth median area. Submesocoxal lines parallel, with marginal punctures not elongate, about as coarse as those on metasternal shield. Submesocoxal areas about as long as third of shortest interval to metacoxae. Metepisterna flat, completely fused with metasternum. Abdominal sternite 1 with punctation coarse and fairly sparse, consisting of punctures slightly smaller and distinctly sparser than those on metasternal sides. Tibiae straight, metatibiae narrowed toward base.

Male sexual characters. Segments 1 to 3 of protarsi moderately widened and with tenant setae. Aedeagus (Figs 13 to 15) 0.31-0.34 mm long. Median lobe with

apical process weakly curved and gradually, weakly narrowed in lateral view, blunt tip. Guide sclerite of internal sac gradually widened apically, membranes with sparse, latero-apical, scale-like structures. Parameres slender, almost straight in dorsal view, slightly curved in lateral view.

Habitat. Montane rain forest. Moss and leaf litter on moss (mainly bamboo and *Nothofagus* sp. leaves) along logs, and very moist rotted trunk.

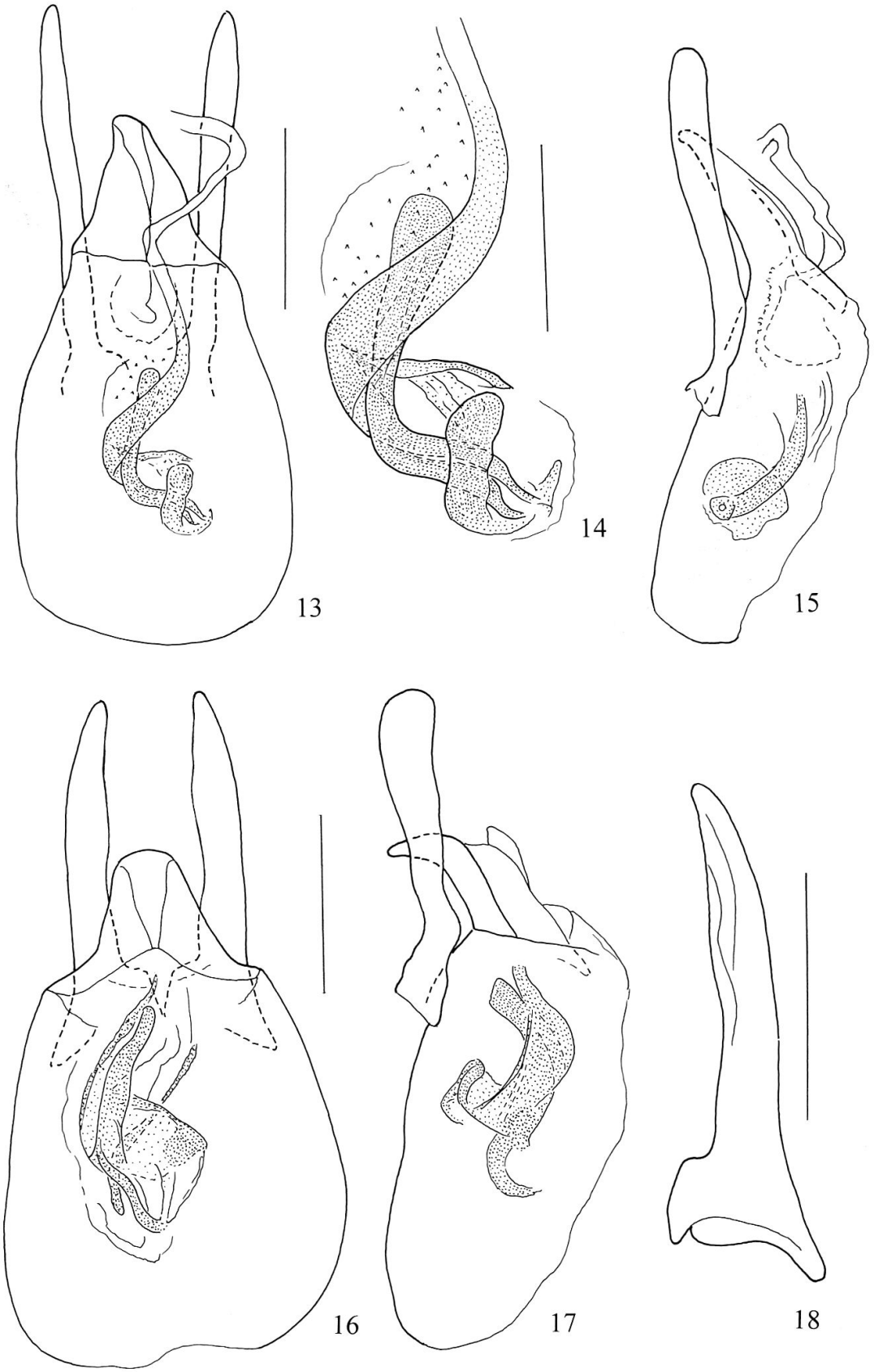
Comments. This species is a member of the *B. lenta* group. It is similar to *B. punctata* (LÖBL) and *B. bournei* LÖBL in most characters, but it may be easily separated from them by the peculiar elytral punctation.

Baeocera ovicula sp. n.

Holotype ♂: Papua New Guinea, Morobe distr., Mt. Kaindi, 1350m, 24.V.1992, G. Cuccodoro #7 (MHNG).
Paratypes: same data as holotype, 1♀ (MHNG).

Description. Length 1.30-1.40 mm. Body moderately convex, uniformly reddish-brown, femora and tibiae slightly lighter than body. Abdominal apex, antennae and tarsi distinctly lighter than body, ochreous. Relative length of antennal segments 3 to 11 as: 7: 7: 10: 8: 12: 8: 13: 12: 14 (holotype); segments 3 to 6 slender, almost equally wide; segments 7 and 8 only slightly wider than segment 6, each widest in basal half; segments 9 to 11 suboval, much wider than segment 7, segment 11 about 2.5 times as long as wide. Lateral contours of pronotum and elytra almost continuous in dorsal view, rounded only at anterior part of pronotum and posterior part of elytra. Lateral pronotal ridge arcuate (lateral view), narrow, concealed in dorsal view. Pronotum and elytra lacking microsculpture, pronotal punctation sparse and very fine, hardly visible at low (30 times) magnification. Elytral punctation fine and fairly dense, consisting of punctures not clearly delimited, much larger than those on pronotum, smaller than puncture intervals. Scutellum completely concealed. Elytra with adsutural areas parallel, finely punctate, sutural striae not shortened, curved externally at base to form very short basal striae. Lateral striae punctate. Epipleural striae entire, gradually converging to margin. Supraepipleural area punctate. Hypomera glabrous, impressed. Mesepisterna extremely finely punctate. Mesosternum not fused to metasternum, with median ridge. Lateral margins of mesosternum with coarse, setiferous punctures. Mesepimeral ridge conspicuous and arcuate, about 3 times as long as interval to mesocoxae. Metasternum strongly shortened, with shield extremely finely punctate, lacking setal patch. Submesocoxal lines arcuate, with marginal punctures coarse, not elongate, extending laterally toward metepisternal suture and becoming elongate. Submesocoxal area about as long as shortest interval to metacoxae. Metepisterna slightly convex, parallel and fairly wide, about in same plan as metasternum, with suture straight, conspicuously deep and punctate. Abdominal sternite 1 with punctation sparse and extremely fine, coarse, elongate basal punctures excepted. Row of basal punctures interrupted at middle, longest punctures about as long as third of lateral sternal length. Tibiae straight, metatibiae almost evenly thick.

Male sexual characters. Segments 1 to 3 of protarsi moderately widened, bearing tenant setae. Aedeagus (Figs 16 to 18) 0.37 mm long. Median lobe symmetrical, with basal bulb strongly sclerotized apically and small ventral tubercle. Apical process short, strongly curved ventrally, with blunt tip. Internal sac complex, with wide, curved plate-like sclerite joined to guide-sclerite and a long, oblique rod. Membranes of internal sac lacking spine-like or scale-like structures and without extruded duct. Parameres symmetrical, angulate near base, slightly



Figs 13-18. Aedeagi in *Baeocera*, dorsal and lateral views; 13-15: *B. flagrans* sp. n., internal sac (14) in detail; 16-18: *B. ovicula* sp. n., paramere (18) in ventral view. Scale bars = 0.1 mm (13, 15-18), 0.05 mm (14).

narrowed at middle and toward apex in dorsal view, conspicuously sinuate and widened toward apex in lateral view.

Habitat. Vegetational debris and rotten trunk in a garden bordering lower montane rain forest.

Comments. This species is in external characters similar to *B. matthewsi* (LÖBL 1977), although smaller. It may be readily distinguished from the latter by the much shorter basal striae, the shorter metasternum, the larger submesocoxal area, and the shorter basal punctures at basis of the abdominal sternite 1. *Baeocera ovicula* differs drastically from *B. matthewi* by the apical process of the median lobe much shorter and stronger curved, the parameres widened apically, and the inner sac broader, lacking scale-like structures.

***Baeocera praedicta* sp. n.**

Holotype ♂: Papua New Guinea, Morobe distr., Biaru Rd. Mt. Kolorong, 2200, 8.VI.1992, G. Cuccodoro #19D (MHNG).

Paratypes: same data as holotype, 4♂, 3♀ (MHNG); same data but #19C, 2♂ (MHNG); same data but #19A, 2♂, 1♀ and #19B, 1 ? (MHNG); same data but 7.VI.1992, #18B 1♂, 3♀ and #18A, 2♀ (MHNG); same data but 2.VI.1992, #14C, 4♀ (MHNG); same data but 6.VI.1992, #17A, 8 (MHNG); same data but 4.VI.1992, #16B, 7 and #16A, 6 (MHNG); same data but 2000m, 3.VI.1992, #15C, 6 (MHNG); same but 2450m, 9.VI.1992, #20A, 4 and #20B, 3 (MHNG); Morobe distr., Mt. Kaindi, 2350m, 18.V.1992, G. Cuccodoro, #3B, 6 (MHNG); Wau, Mt. Kaindi, 2300, 25.VIII. 1968, J. Balogh, no. NG-W-B. 21, 2 and 27.VIII., no. NG-W-B. 28, 1 (HNHM); rte de Kaindi (Wau), 29.XI.1978, L. Deharveng, 4 (MHNG); Morobe distr., Bulldog Road, Hidden Valley Gold, 2550m, 16.VI.1992, G. Cuccodoro, #23C, 8 (MHNG); Bulldog Rd, Mt. Naiko, 2750m, 29.VI.1992, G. Cuccodoro, #25A, 1 (MHNG); Bulldog Road (Wau), 1.XII.78, L. Deharveng, no. 266, 2 (MHNG); Morobe distr., Wau, Mt. Kumbak, 27-28.IX.1968, J. Balogh, no. NG-W-B. 164, 1 (HNHM).

Description. Length 1.30-1.45 mm. Body moderately convex dorsally, weakly convex ventrally, reddish-brown. Femora and tibiae about as dark as body, antennae and tarsi lighter than body, ochreous. Relative length of antennal segments 3 to 11 as: 6: 7: 9: 8: 11: 8: 12: 12: 13 (holotype); segments 3 to 6 equally slender; segments 7 and 8 slender, wider than segment 6, segment 8 about 3 times as long as wide; segments 9 to 11 much wider than segment 8, sub-oval, segment 11 about 2.5 times as long as wide. Lateral contours of pronotum and elytra continuous or almost contiguous in dorsal view. Lateral contours of pronotum oblique near base, arcuate anteriorly. Lateral contours of elytra arcuate. Lateral pronotal ridge arcuate (lateral view), narrow, concealed in dorsal view. Pronotum and elytra lacking microsculpture. Pronotal punctation dense and comparatively coarse, visible at 16 times magnification. Scutellum completely concealed. Elytral punctation coarse and fairly dense, coarser than pronotal punctation except near apices. Elytra with adsutural areas subparallel, finely punctate, sutural striae strongly shortened, distinct in apical half to two thirds of sutural length. Lateral striae punctate. Epipleural striae entire, close to margins. Supra-epipleural area finely punctate. Hypomera glabrous, impressed. Mesepisterna impunctate. Mesosternum not fused to metasternum, elongate, with median ridge. Lateral margins of mesosternum with coarse, setiferous punctures. Mesepimeral ridge slightly more than 3 times as long as interval to mesocoxae. Metasternum very finely and sparsely punctate, except along submesocoxal lines, lacking setal patch. Submesocoxal lines arcuate, with marginal punctures not or slightly elongate, conspicuously coarse, not extending laterally behind mesepimera. Submesocoxal areas about as long as shortest interval to metacoxae. Metepisterna flat or slightly convex, in same plan as metasternum, with very deep, punctate suture. Abdominal sternite 1 with punctation very fine and sparse; basal punctures very coarse, elongate, interrupted at

middle; longest punctures about as one fifth of lateral sternal length. Tibiae straight, metatibiae almost evenly thick.

Male sexual characters. Segments 1 to 3 of protarsi moderately widened and with tenant setae. Aedeagus (Figs 19 to 21) 0.41-0.44 mm long. Median lobe symmetrical, with ventral tubercle reduced and apical process gradually curved and narrowed in lateral and dorsal views, acute at tip in lateral view. Internal sac with well sclerotized basal part and guide sclerite, most of apical portion membranous. Guide sclerite narrowed in apical half. Scale-like or spine-like structures lacking. Parameres fairly wide, arcuate in dorsal and lateral views, widened at apex in lateral view.

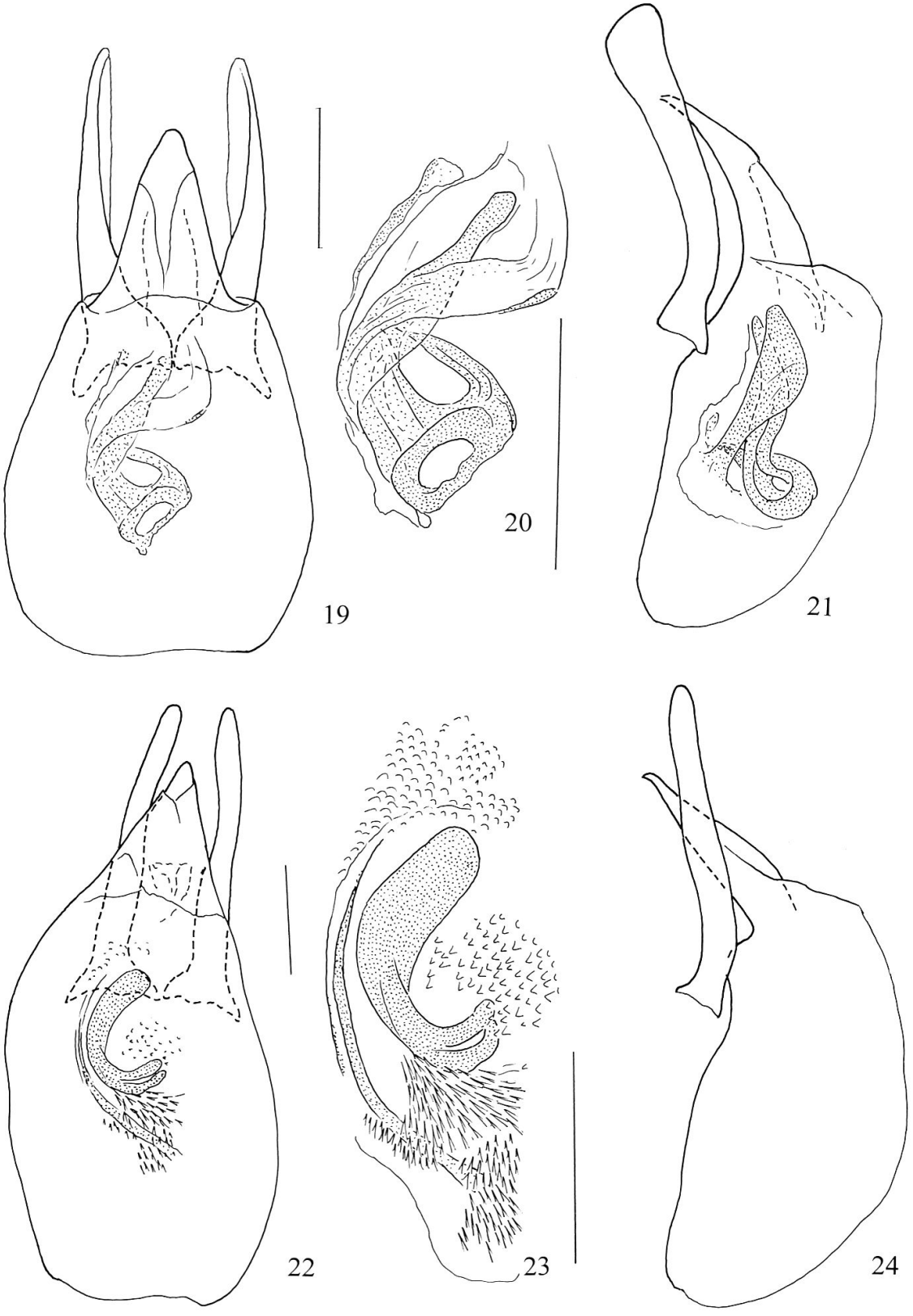
Habitat. Montane rain forest. Litter (mainly bamboo and *Nothofagus* leaves) along and under rotten logs, in very moist, rotten log and in litter under Ericaceae shrubs with bamboo.

Comments. This species shares with *B. ovicula* the body-shape, and many diagnostic characters. The aedeagal characters indicate close relationship of these two species. Nevertheless, *B. praedicta* may be easily distinguished from *B. ovicula*, and from the similar *B. matthewsi*, by the coarse pronotal punctation and the strongly shortened sutural striae of the elytra.

***Baeocera prospecta* sp. n.**

Holotype ♂: Papua New Guinea, Morobe distr., Biaru Rd. Mt. Kolorong, 2200, 8.VI.1992, G. Cuccodoro #19D (MHNG).
Paratypes: same data as holotype, 1♀ (MHNG); Mt. Hagen area, 6000', 5.VI.1974, S. Peck, ber. 280, 1♂ (MHNG).

Description. Length 1.90 – 2.05mm. Body moderately convex, black, abdominal apex, antennae and tarsi light brown, femora and tibiae slightly lighter than body. Relative length of antennal segments 3 to 11 as: 12: 13: 13: 15: 17: 13: 17: 16: 18 (holotype); segments 3 and 4 equally slender, segments 5 and 6 hardly wider than segment 4; segments 7 and 8 slender, slightly wider than segment 6, 8 about 4 times as long as wide; segments 9 to 11 much wider than segment 8, sub-oval, segment 11 about twice as long as wide. Lateral contours of pronotum and elytra separately arcuate in dorsal view. Lateral pronotal ridge arcuate (lateral view), narrow, concealed in dorsal view. Pronotum and elytra lacking microsculpture, pronotal punctation dense and coarse, distinct at 10 times magnification. Tip of scutellum exposed. Elytral punctation still coarser than that on pronotum, consisting of well delimited punctures mostly smaller than puncture intervals. Elytra with adsutural areas parallel, punctate, sutural striae shortened, ending before reaching anterior fourth of elytral length. Lateral striae punctate. Epipleural striae entire, approximate to margins. Supra-epipleural area punctate. Hypomera glabrous, impressed. Mesepisterna impunctate. Mesosternum fused to metasternum, lacking median ridge, with coarse, setiferous punctures along lateral margins. Mesepimeral ridge almost 3 times as long as interval to mesocoxae. Metasternum lacking setal patch, impunctate in median area and on conspicuous, sub-triangular area anterior metacoxae. Remainder of metasternum coarsely punctate. Submesocoxal lines arcuate, with marginal punctures very coarse, not elongate, extending laterally toward metepisternal suture. Submesocoxal areas as long as third of shortest interval to metacoxae. Metepisterna flat, parallel and fairly narrow, about in same plan as metasternum, with suture straight, conspicuously deep and punctate. Abdominal sternite 1 with punctation sparse and fairly fine, much finer than that on metasternum; row of basal punctures not or hardly interrupted at middle, punctures coarse, elongate. Tibiae straight, metatibiae evenly thick.



Figs 19-24. Aedeagi in *Baeocera*, dorsal and lateral views; 19-21: *B. praedicta* sp. n., internal sac (20) in detail; 22-24: *B. prospecta* sp. n., internal sac (23) in detail. Scale bars = 0.1 mm.

Male sexual characters. Segments 1 to 3 of protarsi moderately widened and bearing tenant setae. Aedeagus (Figs 22 to 24) 0.50-0.55 mm long. Apical process of median lobe fairly long, obliquely inclined, with tip acute and slightly curved. Internal sac with flat sclerite bifid basally and additional lateral rod. Spine-like structures at basal portion, absent from apical portion of internal sac. Parameres slightly narrowed posterior middle, hardly curved.

Habitat. Leaf litter on moss (mainly bamboo and *Nothofagus*) along log in montane rain forest.

Comments. This species possesses aedeagal characters very similar to those in *B. insperata* (LÖBL). It differs drastically from latter and other members of the group by the coarsely punctate pronotum and metasternum, and by the shortened sutural striae. In these characters it resembles some species of the *B. lenta* group but differs drastically by the deep metepisternal sutures.

Baeocera praesignis sp. n.

Holotype ♂: Papua New Guinea, Morobe distr., Biaru Rd. Mt. Kolorong, 1900m, 11.VI.1992, G. Cuccodoro #22A (MHNG).
Paratype ♂, with same data as holotype (MHNG).

Description. Length 1.70-1.75 mm. Body convex, black, apical abdominal segments, antennae and tarsi ochreous or light brown, femora, tibiae dark reddish-brown. Relative length of antennal segments 3 to 11 as: 11: 11: 15: 13: 17: 13: 15: 15: 18 (holotype); segments 3 to 6 almost equally slender; segments 7 and 8 slightly widened; segments 9 to 11 much wider than segment 7, 9 and 10 widest at middle, 11 about 2.5 times as long as wide. Lateral contours of pronotum and elytra separately arcuate in dorsal view. Lateral pronotal ridge arcuate (lateral view), narrow, concealed in dorsal view. Pronotum and elytra lacking microsculpture, pronotal punctation sparse and very fine, hardly visible at 100 x magnification. Elytral punctation similar to that on pronotum at base, near sutural striae, and on almost entire apical half, conspicuously coarse on large part of anterior half of elytral disc. Coarse elytral punctures well delimited, sparse, with diameters smaller than puncture intervals. Exposed tip of scutellum minute. Elytra with adsutural areas parallel, sutural striae curved at base and forming short basal striae reaching about to mid-width of elytral base. Lateral striae punctate, epipleural striae entire, not approximate to lateral margins. Hypomera glabrous, impressed. Ventral side of body apparently impunctate, except for coarse punctures at lateral margins of mesosternum, irregular U-shaped row of coarse, setiferous punctures at metasternal centre, and punctures margining submesocoxal lines and base of abdominal sternite 1. Mesosternum fused to metasternum, lacking median ridge. Mesepimeral ridge about 3 times as long as interval to mesocoxa, close and parallel to metasternal margin. Submesocoxal lines arcuate, with marginal punctures very coarse, not elongate and not extending laterally. Submesocoxal areas fairly large, slightly longer than fourth of shortest interval to metacoxae. Metasternum lacking setal patch. Metepisterna hardly convex, in plan with metasternum, with suture almost straight, conspicuously deep and wide, coarsely punctate. Abdominal sternite 1 with row of basal punctures interrupted at middle, punctures elongate, particularly laterally, longest punctures about as fourth of lateral length of sternite. Tibiae hardly curved, metatibiae evenly thick.

Male sexual characters. Segments 1 to 3 of protibiae moderately widened, bearing tenant setae. Aedeagus (Figs 25 to 27) 0.45 mm long. Apical process of median lobe fairly long, obliquely inclined, with tip abruptly narrowed and curved.

Internal sac with a single, flat sclerite joined at centre to a ring-like structure, spine-like structures forming large cluster situated at laterobasal part of internal sac. Parameres narrowed toward apical third and moderately curved.

Habitat. Montane rain forest, in a nest of *Tallegalla jobiensis*.

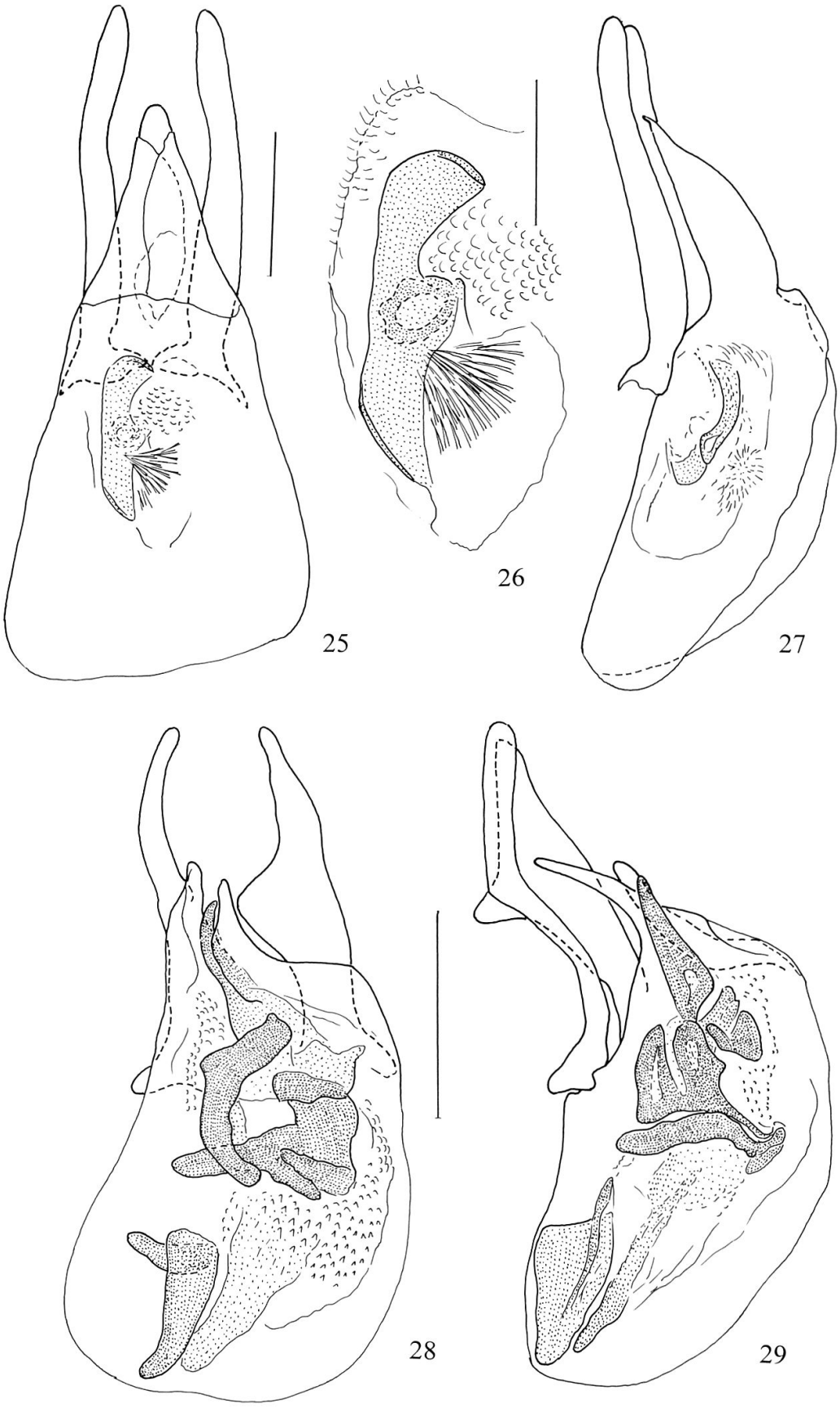
Comments. This new species is similar and obviously closely related to *B. bironis* (PIC). *Baeocera praesigna* may be distinguished by its body darker and larger, the elytral with coarse punctation restricted on to a smaller surface and absent from most of the apical part of the elytral disc, the internal sac lacking a small cluster of apical spine-like structures and lacking additional rods.

***Baeocera curta* sp. n.**

Holotype ♂: Papua New Guinea, Morobe distr., "rte de Bulolo à Wau", 30.XI.78, L. Deharveng, nr.246 (MHNG).
Paratypes: Papua New Guinea, Morobe distr., above Wau, 1400m, 16.V.1992, G. Cuccodoro #1A, 2♀ (MHNG).

Description. Length 1.35-1.50 mm. Body strongly convex, reddish-brown. Mesosternum, Metasternum and abdominal sternite 1 slightly darkened. Appendages and apical abdominal segments ochreous. Relative length of antennal segments 3 to 11 as: 8: 9: 10: 8: 15: 12: 15: 13: 17 (holotype); segment 3 comparatively wide, wider than following, segment 4 narrow, slightly narrower than segment 5 or 6; segments 7 to 11 much wider than preceding segments, slightly widened apically or subparallel, each about 3 times as long as wide. Lateral contours of pronotum and elytra separately arcuate in dorsal view. Lateral pronotal ridge sinuate (lateral view), narrow, concealed in dorsal view. Pronotum and elytra lacking microsculpture, pronotal punctation sparse and very fine, hardly visible at 100 x magnification. Elytral punctation similar to that on pronotum at base and near sutural striae, coarse and fairly dense on most of discal surface, comparatively coarse punctures becoming smaller and less clearly delimited toward apex. Exposed tip of scutellum comparatively large. Elytra with adsutural areas narrowed anteriorly, basal striae entire and joined to lateral striae, or very shortly interrupted at humeral area. Lateral striae punctate. Epipleural striae entire, very close to lateral margins. Hypomera moderately impressed, impunctate. Ventral side of body apparently impunctate, except for few punctures at lateral margins of mesosternum, U-shaped row of coarse punctures on median portion of metasternum, and coarse, distinctly elongate punctures at anterior margins of metasternum and abdominal sternite 1. Mesepimeral ridge about 3 times as long as interval to mesocoxa, close and parallel to metasternal margin. Mesosternum lacking median ridge, mesosternal process fused to metasternum. Median part of metasternum with setal patch. Submesocoxal lines parallel to coxa, with row of marginal punctures extending almost to metepisterna. Submesocoxal areas narrow, about as long as fourth of shortest interval to metacoxae. Metepisterna conspicuously large, flat, below plan of metasternum, strongly narrowed anteriorly, with suture strongly convex. Row of basal punctures of abdominal sternite 1 interrupted at middle. Tibiae straight, metatibiae evenly thick.

Male sexual characters. Protarsi with segments 1 to 3 bearing tenant setae, segments 1 and 2 strongly widened, about as wide as tibia, segment 3 moderately widened. Tibiae slender, unmodified. Process of abdominal sternite 5 large, with blunt tip. Aedeagus (Fig. 28 and 29) 0.63 mm long. Median lobe and parameres strongly asymmetrical. Median lobe with basal bulb weakly sclerotized, apical process split to form two strongly sclerotized pieces. Left piece tapering, and curved, right piece larger than left piece, inclined ventrally. Internal sac very complex, with



Figs 25-29. Aedeagi in *Baeocera*, dorsal and lateral views; 25-27: *B. praesignis* sp. n., internal sac (26) in detail; 28, 29: *B. curta* sp. n. Scale bars = 0.1 mm (25, 27), 0.05 mm (26), 0.2 mm (28, 29).

strongly sclerotized pieces and membranes covered by scale-like structures. Apical sclerite of internal sac with acute, extruded tip. Right paramere comparatively narrow, sinuate at lateral view. Left paramere widened and forming a lobe at middle, narrowed toward tip.

Habitat. Litter in lower montane rain forest.

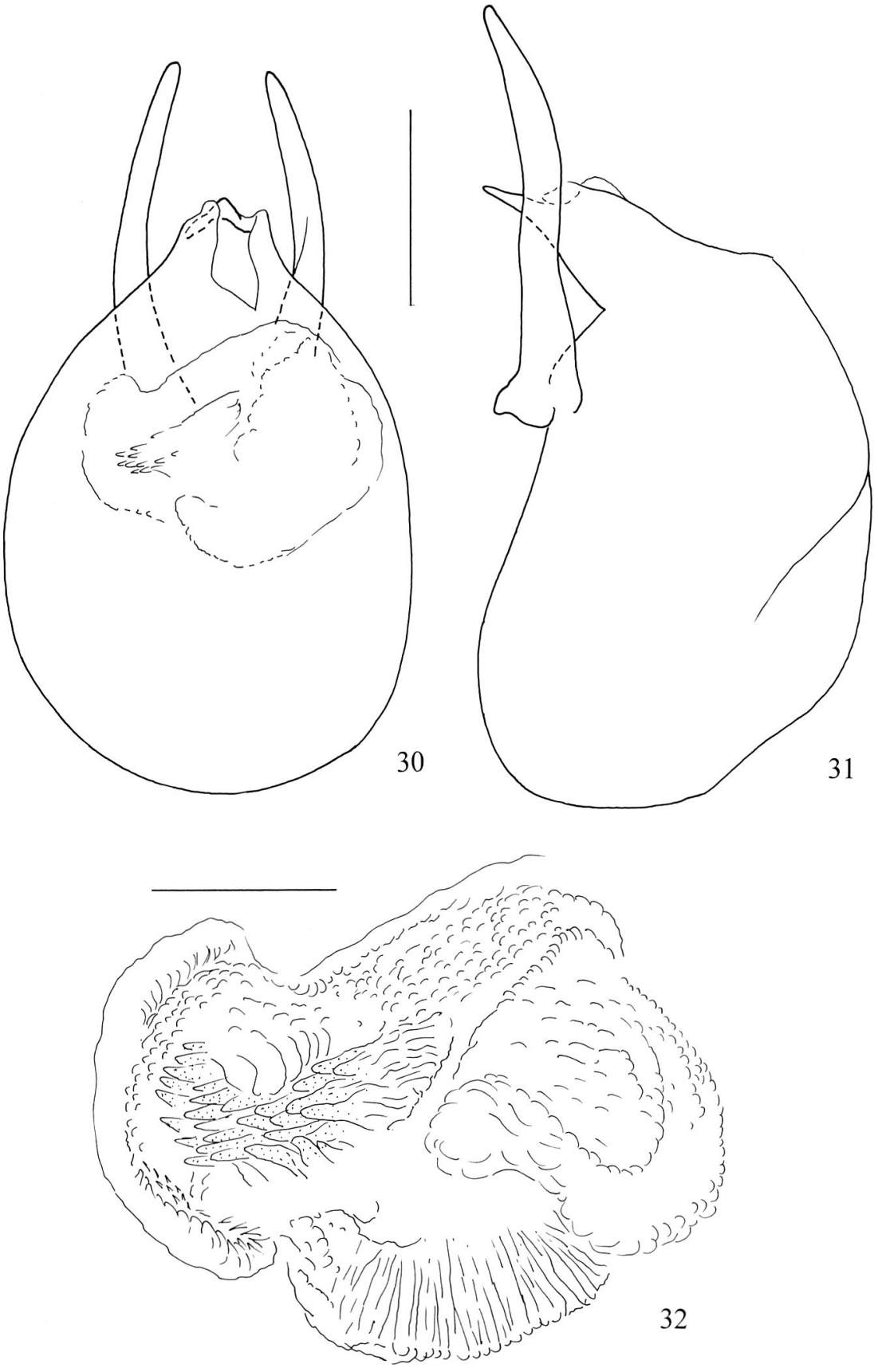
Comments. The aedeagus of this species is highly derived and suggest close relationships to members of the *B. satana* group which presently contains only one Japanese and five Himalayan species. Unlike other members of the group, *B. curta* lacks modified male tibiae, and possesses the middle part of the left paramere strongly widened. Externally, *B. curta* may be separated from *B. satana* and its allied by the smaller and darker body, the shape of the metepisterna and the metasternal puncture rows longer, almost reaching metepisterna.

***Baeocera cuccodoroi* sp. n.**

Holotype ♂: Papua New Guinea, Morobe distr., Biaru Rd, Mt. Saredomo, 2450m, 9.VI.1992, G. Cuccodoro #20B (MHNG).
Paratypes: Papua New Guinea, Morobe distr., Biaru Rd, Mt. Kolorong, 2200m, 8.VI.1992, G. Cuccodoro #19D, 1♂; Papua New Guinea, Morobe distr., Bulldog Rd, Mt.Naiko, 2750m, 29.VI.1992, G. Cuccodoro #25A, 2♂; Papua New Guinea, Morobe distr., Bulldog Rd, Hidden Valley Gold, 2550m, 16.VI.1992, G. Cuccodoro #23C, 1♀; same data but #23B, 1♀. All in MHNG.

Description. Length 1.78 – 2.00 mm. Body strongly convex, much more convex ventrally than dorsally. Body very dark reddish-brown to black. Head, femora and tibiae as body or slightly lighter, apical abdominal segments, antennae, mouthparts and tarsi lighter reddish-brown or ochreous. Eyes conspicuously large. Relative length of antennal segments 3 to 11 as: 13: 15: 17: 17: 17: 15: 20: 17: 23 (holotype); segments 3 and 4 equally slender, segments 5 and 6 slightly wider than segment 4; segments 7 and 8 each wider than segment 6 and about 4 times as long as wide; segments 9 to 11 widened apically, 11 about 3 times as long as wide. Lateral contours of pronotum and elytra separately arcuate in dorsal view. Lateral pronotal ridge arcuate (lateral view), thick, concealed in dorsal view. Pronotum and elytra lacking microsculpture, pronotal punctation sparse, extremely fine, hardly visible at 200x magnification. Elytral punctation fairly sparse, mostly very fine and particularly shallow, consisting of punctures not clearly delimited. Apex of scutellum exposed. Elytra with adsutural areas parallel, sutural striae entirely widely separated from lateral striae; lateral striae impunctate; epipleural striae shortened anteriorly. Hypomera hardly impressed, almost vertical, impunctate. Ventral side of body apparently impunctate except for setiferous punctures at lateral margins of mesosternum, two median patches of setiferous, fine punctures on middle part of metasternum, sparse, fairly coarse, not elongate punctures margining submesocoxal lines, and coarse punctures at base of abdominal sternite 1. Mesosternum fused to metasternum, lacking median ridge. Mesepimera completely fused, mesepimeral ridge absent. Mesosternum lacking median ridge. Submesocoxal lines parallel to coxa, submesocoxal areas narrow, about 0.05 mm long, not exceeding fourth of shortest interval to metacoxae. Metepisterna below plan of metasternum, conspicuously wide, almost flat, with anterior angles widely rounded. Row of basal punctures of abdominal sternite 1 interrupted at middle; outer punctures distinctly elongate, inner punctures not or slightly elongate. Tibiae straight, metatibiae hardly narrowed basally.

Male sexual characters. Segments 1 to 3 of protarsi widened and bearing tenant setae, segment 1 almost as wide as apex of tibia, following segments narrower. Aedeagus (Figs 30 to 32) 0.72-0.87 mm long. Median lobe symmetrical, with basal



Figs. 30-32. Aedeagus of *Baeocera cuccodoroi* sp. n., dorsal and lateral views, internal sac (32) in detail. Scale bars = 0.2 mm (30, 31) and 0.1 mm (32).

bulb, moderately sclerotized and apical process short and wide. Latter thick in dorsal view, oblique, strongly narrowed and acute at tip in lateral view. Dorsal valves very short, membranous. Ventral, articular process small. Parameres symmetrical, gradually narrowed and arcuate in dorsal view, sinuate and narrowed toward tip in lateral view. Internal sac large, transverse, lacking sclerotized rods and plates, consisting of complex spine-like, denticle-like and scale-like structures.

Habitat. Moss or moss and bamboo/*Nothofagus* litter, along and on rotten logs, in montane rain forest.

Comments. This new species resembles *B. kapfereri* REITTER from Northern Africa, and some members of the Asian *B. curtula* and the New World *B. congener* groups by its habitus, in particular by the comparatively large body, the pattern of the punctation, the distinct metepisterna and the moderately large submesocoxal areas. However, *B. cuccodoroi* differs drastically in having, in combination, the body very strongly convex ventrally, the mesosternum fused to metasternum, the mesepimera completely fused, the epipleural striae shortened, the metepisterna very large, and the hypomera hardly impressed. The shape of the antennae, with the widened segments 7 and 8, is as that in members of the *B. monstrosa* group. On the basis of the aedeagal characters this species cannot be placed in any previously defined species group.

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