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TAXONOMIC REVIEWS OF THREE SMALL CREMASTOCHILIFORM GENERA FROM ASIA AND AFRICA (COLEOPTERA: CETONIIDAE)

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With 39 text-figures and two plates

Abstract

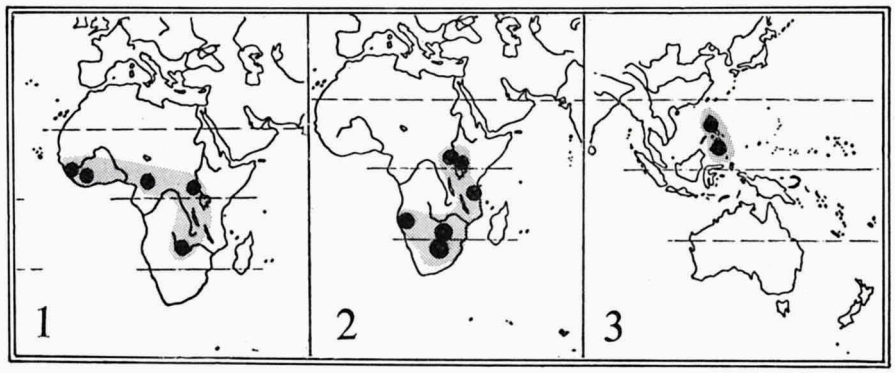
Three genera are diagnosed and discussed: *Pseudopilinurgus* Moser, *Callynomes* Mohnike (= *Praona* Westwood, syn. nov.), and *Anatonochilus* Péringuey. Their species are keyed and mentioned in annotated checklists. The Leiden material is recorded. From other collections three new species are described: *Pseudopilinurgus erratus* from Rhodesia, *Callynomes apo* from the Philippines, and *Anatonochilus pletus* from Tanzania. *Cremastocheilus cribrosus* Gory & Percheron is transferred to *Pseudopilinurgus*; *Coenochilus luzonicus* Schultze is transferred to *Callynomes*. For two names lectotypes are designated.

Introduction

The following reviews are further byproducts of a reclassification of the cremastochiliform groups within the Cetoniinae. Work on other cetoniine groups is also in progress, but the cremastochiliform section is scheduled to be completed first.

The genera treated below are *Pseudopilinurgus* Moser, *Anatonochilus* Péringuey (both Afrotropical), and *Callynomes* Mohnike non Westwood (= *Praona* Westwood) (Oriental). Each of these genera is diagnosed and discussed; their known ranges are mapped; illustrated keys to the species are given, as well as checklists comprising some essential taxonomic data. Each generic section is followed by details concerning the included species. Some new species are described, lectotypes designated, new records given. *Pseudopilinurgus* and *Callynomes* are extremely rare in collections; *Anatonochilus* seems more abundant, at least the South African species. Nothing substantial is known about the ecology of these genera.

In the following the museums are denoted only by their locality names;



Figs. 1-3. Approximate known ranges of the three genera dealt with in this paper. 1, *Pseudopilinurgus* (Africa); 2, *Anatonochilus* (Africa); 3, *Callynomes* (Philippines). Dots: areas from which material has been studied.

for full names see under Acknowledgements. The Leiden museum is abbreviated L; two further abbreviations, used for collections incorporated in L, are: J — O. E. Janson (collection acquired by Valck Lucassen in 1928); VL — F. T. Valck Lucassen (collection acquired by L in 1940).

Approximate total lengths were measured with head of beetles in normally extended position.

Pseudopilinurgus Moser

Moser (1918) proposed this genus for a single species from Cameroun, not realizing that a very close relative from Senegal was left in *Oplostomus* MacLeay (frequently spelled *Hoplostomus*). This species, still known as *Oplostomus cribrosus* (Gory & Percheron), is here moved to *Pseudopilinurgus*. A third species, described below, was recently found misidentified as *Oplostomus cribrosus* in the Frey museum (Tutzing).

Generic diagnosis. — Pygidium with set of three variably pronounced elevations (but median ridge may be effaced). Lateral parts of abdominal sternites very distinct in dorsal view, each of them strongly convex (figs. 6, 9, 10), lacking longitudinal ridge fitting against elytral border. Dorsal outline of pronotum subhexagonal. Mentum strongly thickened in front, more or less rotund (ventrofrontal view). Clypeus anteriorly slightly reflexed, anterior border (in full-face view) medially straight or slightly convex. Middle coxae strongly approximated, separated by feeble protuberance.

Clypeus lacking peripheral projections; its anterolateral angles rounded off, lateral declivity narrow. General surface of clypeofrontal disc (in pro-

file) very feebly convex, lacking isolated modifications. Lateral margin of pronotum flush with general surface, anterior noto-pectoral transition gradual; lateral border of pronotum continuous, not excised. General surface of pronotum evenly convex, unmodified. Scutellum with acute apex. Elytra elongate, with apicosutural angle rounded off; disc without longitudinal striae; juxtasutural zone not raised; general surface of elytra (in cross-section) feebly convex, more or less modified by tuberculose-foveose sculpture (in two of the three known species); posthumeral-paradiscal impression vague; elytral apex with simple umbone, unmodified. Labial palpi inserted close to gula. Maxillary galea unidentate. Antennal scapus simply claviform. Postprosternum unmodified. Mesosternum unmodified. Dorsally visible part of mesepimeron narrow, non-protuberant. Abdomen with 7 (1 small) visible sternites. Propygidium exposed, its spiracles conically produced. General surface of pygidium slightly convex, modified as described in first paragraph; ratio pygidial width/height equal to or exceeding 1; anal border marginate, usually indistinct in dorsal view. Parameres simply lobiform. Fore tibia with two external denticles; underside unmodified; terminal spur long, reaching apex of tarsal segments 3. Hind tibia with one non-apical external protrusion; apex of middle and hind tibiae trilobate-dentate. Neither tibiae, nor femora complanate. Lateral extremity of hind coxa rounded posterolaterally. Tarsi all 5-segmented, slender, segments subcylindrical-claviform, derm unmodified; claws normally sickle-shaped. Derm black (with or without red-orange pronotal sides); generally glabrous, pilosity of underside brownish; predominant microsculpture of venter punctate and striolate. Habitus strongly cremastochiliform; size moderate (lengths measured 12-14 mm).

Type-species. — *Pseudopilinurgus aciculatus* Moser, by monotypy.

Affinities. — *Pseudopilinurgus* belongs in an apparently monophyletic group together with *Macromina* Westwood, *Brachymacroma* Kraatz, and *Campsiura* Hope (= *Macroma* Gory & Percheron), which all have the peculiar pygidial protrusions mentioned in the first paragraph of the generic diagnosis. *Pseudopilinurgus* is only distantly related to the true Cremastocheilini, especially because of the lack of a preprosternal apophysis.

Distribution. — The few records available suggest a very wide range in tropical Africa. Map, fig. 1.

Key to species of *Pseudopilinurgus*

1. Elytral surface very uneven, with smooth spaces. Pygidial protrusions distinct. Visible sternites 2-3 evenly convex 2

— Elytra and pronotum slightly uneven, entirely aciculate, opaque. Pygidial

protrusions subobsolete. Visible sternites 2-3 laterally impressed. Propygidial spiracles strongly produced, antepropygidial spiracles also produced (fig. 9) . . . . . *aciculatus*

2. Pronotum shiny, punctation simple. Propygidial spiracles strongly produced, antepropygidial spiracles also produced (fig. 10) . *cribrosus*

— Pronotum opaque, punctation partly arcuate-striolate. Propygidial spiracles slightly produced, antepropygidial spiracles exposed but not produced (fig. 6) . . . . . *erratus*

Checklist of *Pseudopilinurgus*

Pseudopilinurgus Moser, 1918: 185; type-sp. *P. aciculatus* Moser, 1918 (monotypy). — Afrotropical, 3 spp.

Described species

P. aciculatus Moser, 1918: 185; holotype, probably ♀, in Berlin. — Cameroun (type-loc. Joko), Sudan.

P. cribrosus (Gory & Percheron, 1933: 50, *Cremastocheilus*), lectotype, probably ♂, in Geneva. — Senegal (type-loc. not detailed), Guinea.

P. erratus Krikken, present paper, holotype ♀ in Frey museum. — Rhodesia (no details).

Species accounts

Pseudopilinurgus aciculatus Moser (fig. 9, pl. 1 fig. 1)

Identification. — The elytral surface of *P. aciculatus* is the least uneven of the three species, the others having an apparently smooth surface strewn with roundish, aciculate, more or less confluent impressions. The entire dorsum of *aciculatus* is opaque, which is primarily due to the aciculate microsculpture. The spiracles of the visible abdominal sternites 4 and 5 are produced. The frontovertex is crowdedly punctulate; the punctulation is slightly effaced on the clypeus. The midline ridge on the pygidium is obsolete.

Material examined. — 2 specimens, apparently both female, including the type from Joko (Cameroun) (Berlin museum). The other female is from Ludi (Sudan: Lado District), 25.vi.1912, Stigand (L ex VL-J).

Pseudopilinurgus cribrosus (Gory & Percheron) comb. nov. (fig. 10, pl. 1 fig. 2)

Identification. — The spiracles in the lateral, protuberant part of the abdominal sternites 4 and 5 are produced, contrary to those of *P. erratus*. The pronotal punctation of *cribrosus* is simple, not annulate or arcuate, as in *erratus*.

Material examined. — The lectotype (here designated), apparently a male, from Senegal, ex Melly-Gory (Geneva museum), which has three small reddish spots on each side of its pronotum. A female from Guinea (L ex VL-J); and a specimen from Senegal (Paris museum, ex Oberthür-Van Lansberge-Mniszech).

Pseudopilinurgus erratus sp. nov. (figs. 4-8, pl. 1 fig. 3)

Holotype (female). — Approximate length 14, height 6, width 4.5 mm. Black; opaque, due to microsculpture; lateral quarter of pronotum orange-red, with isolated black spot. Pilosity abundant, but inconspicuous (most distinct at magnifications exceeding × 25), very short. Habitus, plate 1 fig. 3.

Cephalic contours, fig. 4. Anterior margin of clypeus slightly reflexed; lateral ridge of clypeus distinct; clypeal disc slightly convex (in cross-section). Frons virtually flat. Vertex slightly convex. Entire head very densely to contiguously punctate; punctures well-defined, isodiametric, on vertex; increasingly confluent to clypeal corners. Maximum width of head 1.8 mm.

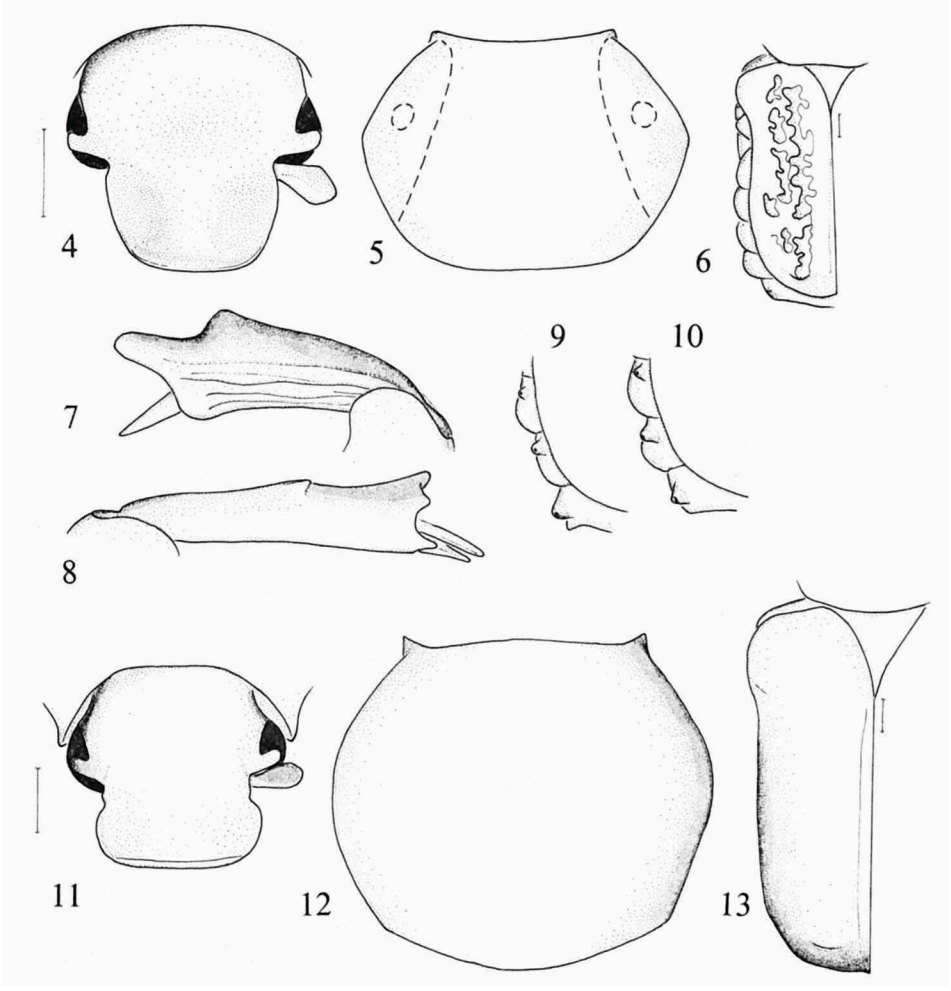
Pronotal contours and limits of orange-red markings, fig. 5. General surface of pronotum evenly convex; lateral borders immarginate, but notopectoral transition abrupt; punctation crowded, unmodified on apex, becoming arcuate-striolate toward base, hemipunctate on orange-red areas; diameters of punctures on pronotal apex 0.1 mm, their densities ca. 15/0.25 sq.mm. Medium length of pronotum 3.6, maximum width 5.2 mm. Scutellum (fig. 6) crowdedly arcuate-striolate.

Elytral contours, fig. 6. General surface of elytra (in cross-section) evenly convex; humeral and apical umbones distinct; apicosutural angle rounded off; juxtasutural zone slightly raised near apex; entire elytron with more or less contiguous, roundish striolate-aciculate spots (producing a cribelloid overall appearance), lateral and juxtasutural spots completely confluent. Sutural length of elytra (from scutellar apex) 6.0, maximum length 7.8, humeral width (combined) 6.3 mm.

Mentum in front narrow, thickened, sockets of labial palpi fully exposed. Prosternum unmodified (e.g., without apophysis). Femora, coxae, lateral parts of pectus, densely, braidedly striolate. Punctation of metasternal disc passing gradually to lateral striolation. Abdominal sternites all arcuate-striolate, sparsely on medial area, more densely laterad, braidedly striolate on convex, somewhat protuberant lateral surface of sternites 2-5. Pygidium with distinct midline ridge and pair of bulbous subapical protrusions; anal border very distinctly marginate; derm almost entirely contiguously annulate-

striolate, units confluent laterally. Propygidial spiracles not elevated; derm of propygidium completely finely striolate-aciculate.

Fore tibia (fig. 7) with two external denticles; derm rugulate-striolate; terminal spur elongate-acuminate, reaching tarsal segment 3. Middle and hind tibiae (fig. 8) with external protrusion at 0.3 from apex; tibial apices tridentate; derm hemipunctate-striolate; terminal spurs elongate-acuminate.



Figs. 4-10. *Pseudopilinurgus*; 4-8, *erratus*, holotype; 9, *aciculatus*, ♀ Ludi; 10, *cribrosus*, ♀ Guinea. — Contours of: 4, head, full-face; 5, pronotum; 6, left elytron, with sternites and propygidium; 7, right fore tibia; 8, left hind tibia; 9, 10, distal sternites and propygidium (with elytral edge, cf. 6). — Figs. 11-13. *Callynomes apo*, holotype. — Contours of: 11, head, full-face; 12, pronotum; 13, left elytron. — Scale-lines = 1 mm; 4, 7, 8, same scale; 5, 9-12, same scale.

Tarsi moderately slender, with well-developed sickle-shaped claws. — Male sex unknown.

Identification. — The pronotal punctation of *Pseudopilinurgus erratus* is modified compared to that of *cribrosus*, being more or less arcuate-striolate discally, hemipunctate laterally. All three pygidial protrusions are well pronounced compared to the two other species. The spiracles of visible abdominal sternites 4 and 5 are not produced.

Material examined. — Holotype and two paratypes, females, all from "Rhodesia/Dr. Itzinger" (holotype and one paratype in Frey museum, one paratype in L). No significant variation.

Callynomes Mohnike

Up till now the only species placed in this Philippine genus has figured as *Praona niveosparsa*, attributed to either Mohnike (1873) or Westwood (1873). *Callynomes niveosparsa*, although attributed to Westwood by Mohnike (l.c.), was first made available by Mohnike himself (l.c.: 133). A few months later (cf. Krikken, 1977) Westwood published the name *Praona niveosparsa* for the same species, having drawn his descriptive data and the illustration from the same specimen. Both *Callynomes* and *Praona* were new generic names, and clearly the former has priority. My own reluctance to confirm the priority of *Callynomes* Mohnike over *Praona* Westwood (Krikken, 1977) stems from two considerations: (1) *Callynomes* has been used by Westwood (1873) and subsequent authors to accommodate several species not directly related to *Callynomes niveosparsa*; (2) *Callynomes* Westwood is not only a homonym of *Callynomes* Mohnike but has two senior synonyms [1]). Nevertheless, applying the nomenclatural rules strictly, *Callynomes* Mohnike should be upheld for *niveosparsa* and its congeners, instead of *Praona*.

After the descriptions of *Callynomes niveosparsa* by Mohnike and Westwood only one further cremastochiliform beetle was reported from the Philippines: *Coenochilus luzonicus* Schultze, 1916 (cf. also Schein, 1953). In the U.S. National Museum of Natural History I encountered a male identified by Schultze himself, and found my assumption confirmed, namely, that *C. luzonicus* is not a *Coenochilus* at all, but a second species of *Callynomes*. A third species, likewise from the Philippines, was found among the unidentified accessions in the Chicago museum. This species appears to be new and its description is given further below.

Generic diagnosis. — Parameres modified: with lobes (fig. 22). Internal

[1]) *Clinterocera* Motschulsky, 1857 (= *Cholerastoma* Mohnike, 1872; = *Callynomes* Westwood, 1873, non Mohnike, misspellings *Callinomes*, e.g. Paulian, 1961, *Callyomenes*, Schoch, 1895).

claw of male fore tarsi (lobate-)dentate (fig. 27). Fore tibia of male with one external denticle, underside with slight terminal longitudinal ridge. Antennal scapus more or less claviform, not strongly inflated-dilated. Tarsi all 5-segmented. Mentum strongly thickened in front.

Clypeus lacking peripheral projections; anterior margin slightly reflexed, in full-face outline straight or feebly rounded; clypeopleuron narrow; clypeus laterally gradually declivous. General surface of head convex, slightly uneven, without isolated modifications. Dorsal outline of pronotum subhexagonal. Lateral margin of pronotum flush with general surface; anterior noto-pectoral transition gradual. Lateral border of pronotum (in dorsal outline) entire. General surface of pronotum evenly convex, lacking isolated protrusions. Pronotal base lacking paramedian impressions. Scutellum with acute apex. Elytra very elongate, their apicosutural angle distinct, juxtasutural stria distinct. General surface of elytra unmodified; juxtasutural zone may be very slightly raised behind; disc flat. Palpi distinct, unmodified. Maxillary galea unidentate. Preprosternal apophysis short, simple; postprosternum unmodified. Anterolateral flange of propectus slightly expanded rostrad. Middle coxae strongly approximated, narrow interspace not protuberant. Mesosternal collum narrow, unmodified. Dorsally visible part of mesepimeron small, narrow, non-protuberant. Abdomen with 7 (1 small) visible sternites; lateral parts of sternites indistinct in dorsal view, normally convex, unmodified. Males with impressed abdominal venter. Only last one or two abdominal spiracles exposed. Propygidium exposed, its spiracles variably produced. Pygidium approximately isodiametric, its general surface strongly convex, with variably pointed apex; anal border indistinct in dorsal view, simple. Fore tibia with long terminal spur. Hind tibia with variably pronounced external protrusion; apex of middle and hind tibiae trilobate-dentate; general shape of middle and hind tibiae trilobate-dentate; general shape of middle and hind tibiae may be complanate. Femora unmodified. Lateral extremity of hind coxa rounded posterolaterally. Tarsi slender; fore tarsal segments 1-4 may be shortened; tarsal segments subcylindrical to claviform, derm unmodified; tarsal claws of normal size. Derm concolorous, dull black, with whitish to light-brown tomentous and/or velutinous markings; generally glabrous. Predominant microsculpture of venter arcuate-striolate. Habitus cremastochiliform; large (lengths measured 14-19 mm), elongate.

Type-species. — *Callynomes niveosparsa* Mohnike, by monotypy.

Affinities. — *Callynomes* is apparently the Philippine branch of the *Pilinurgus* group of genera, and within that group it stands rather isolated because of the peculiar parameres and the dentate tarsal claws; both these features may prove to be unique in the family.

Distribution. — The three known species occur in Luzon and Mindanao; other Philippine islands probably also have *Callynomes*. Map, fig. 3.

KEY TO SPECIES OF *CALLYNOMES*

1. Propygidial spiracles strongly produced (fig. 21). External elevation of middle and hind tibiae distinct 2
— Propygidial spiracles feebly produced (fig. 17). External elevation of middle and hind tibiae subobsolete (fig. 15). Parameres, fig. 18. Pronotal base feebly rounded (fig. 12). Pygidial apex (♂) in lateral view angulate (fig. 16). Large species (ca. 19 mm long) . . . . . *apo*
2. Pronotal base feebly rounded (as in *apo*). Parameres, fig. 21. Pygidial apex feebly angulate (♂) or more strongly pointed (♀), in lateral view . . . . . *niveosparsa*
— Pronotal base strongly rounded (fig. 23). Parameres, fig. 26. Pygidial apex strongly produced, pointed (♂♀) (fig. 25). Slender species (14-15 mm long) . . . . . *luzonica*

CHECKLIST OF *CALLYNOMES*

Callynomes Mohnike, 1873: 133; type-sp. *Callynomes niveosparsa* Mohnike, 1873 (monotypy). Syn. *Praona* Westwood, 1873: 20; type-sp. *Praona niveosparsa* Westwood, 1873 (monotypy). — Oriental, 3 spp.

Described species

C. apo Krikken, present paper; holotype in Chicago; ♀ unknown. — Philippines: Mindanao (type-loc. Mt Apo).

C. luzonica (Schultze, 1916: 349, *Coenochilus*); location of types (♂♀) unknown. — Philippines: Luzon (type-loc. not detailed).

C. niveosparsa Mohnike, 1873: 133; holotype in Paris. — Philippines: Mindanao (type-loc. not detailed).

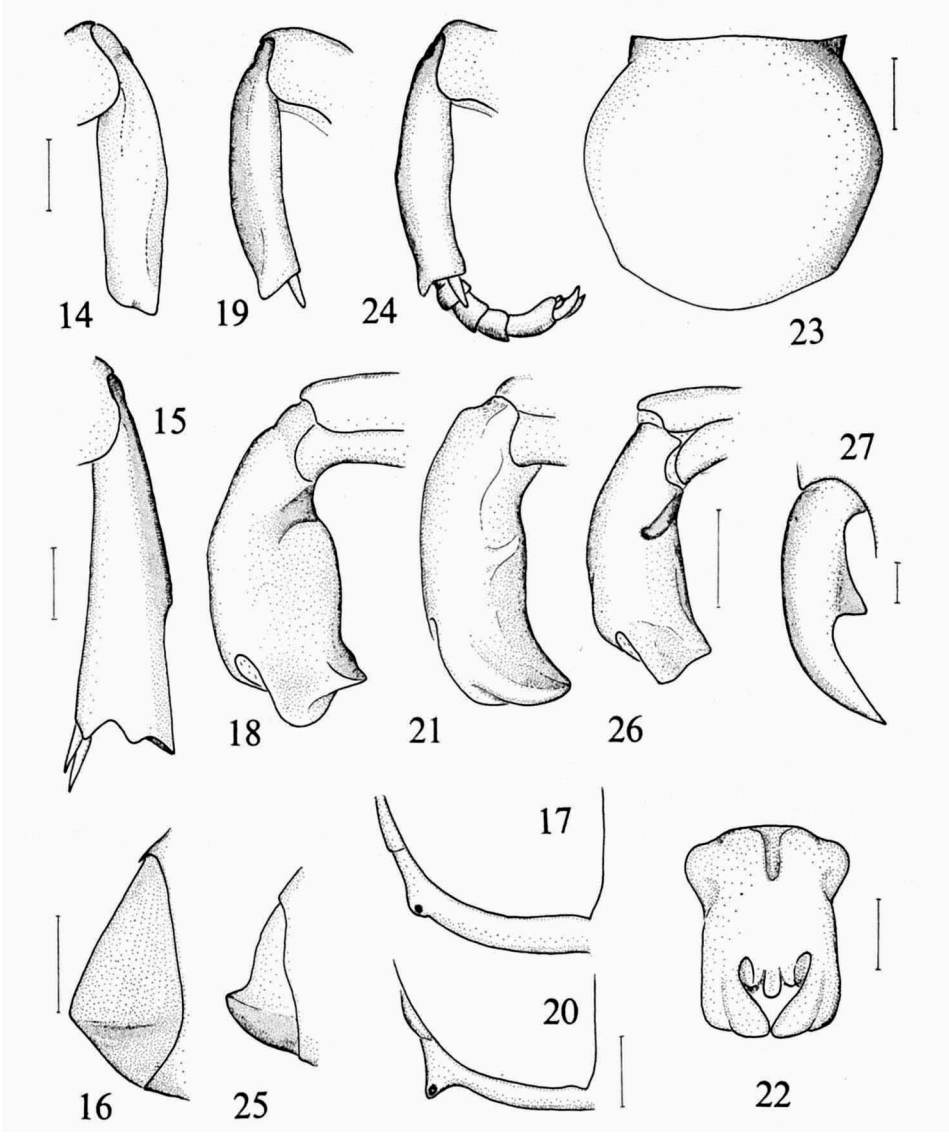
SPECIES ACCOUNTS

Callynomes apo sp. nov. (figs. 11-18, plate 1 fig. 4)

Holotype (male). — Approximate length 19, height 6, width 8 mm. Entirely black, opaque, locally with vague, greyish velutinous cover; derm predominantly punctate and punctate-striolate; pilosity present but inconspicuous, dorsum virtually glabrous. Habitus cremastochiliform (plate 1 fig. 4).

Cephalic contours, fig. 11. Anterior margin of clypeus slightly reflexed; clypeopleuron narrow but distinct, impressed medially; clypeal discolateral

transition gradual, not marked by ridge. Vertex with some brown tomentum. Cephalic surface weakly, rather evenly convex, very densely punctate; punctation somewhat effaced behind clypeopleural ridge, absent from clypeo-



Figs. 14-27. *Callynomes*; 14-18, *apo*, holotype; 19-22, *niveosparsa*, ♂ Surigao; 23-27, *luzonica*, ♂ Montalban. Contours of: 14, 19, 24, fore tibia; 15, left hind tibia; 16, 25, pygidium, dextrolateral; 17, 20, propygidium left half, dorsal view; 18, 21, 22, 26, parameres, dextrolateral (18, 21, 26) and full-face (22); 23, pronotum; 27, fore tarsal claw. — Scale lines = 1 mm, except 27 = 0.1 mm; same elements, same scale.

pleuron; density of punctures medially between eye-canthi 18-20/0.25 sq. mm, their diameters ca. 0.07 mm. Maximum width of head 3.4 mm.

Pronotal contours, fig. 12. General surface of pronotum weakly evenly convex, punctate throughout; punctation anterolaterally gradually changing to propectoral striolation; punctures on pronotal centre abundant, 25-30/sq. mm, their diameters ca. 0.05 mm; borders immarginate. Median length of pronotum 5.2, maximum width 6.0 mm. Scutellum (fig. 13) with acute apex, sides concave, derm sparsely punctate.

Elytral contours, fig. 13. Prediscal surface of elytron slightly depressed; humeral and apical umbones distinct; posthumeral emargination shallow; juxtasutural stria distinct; juxtasutural zone slightly raised on apical declivity; elytral microsculpture consisting of annulate and arcuate striolae, their diameters on the disc ca. 0.12 × 0.08 mm, densities ca. 15/sq. mm; punctures in apicosutural corner of elytron annulate-striolate, encircling a puncture; apicosutural angle produced. Sutural length of elytra (from scutellar apex) 9.0, maximum length 11.4, maximum width (combined) 8.3 mm.

Mentum greatly thickened in front, anterior side flat, in outline approximately rotund. Preprosternal apophysis slightly longer than wide (in profile), with tapering apex. Propectoral sides braidedly striolate, with sparse bristles; meso- and metapectus predominantly arcuate-striolate, also with sparse bristles. Mesepimeron very shallowly convex; metepimeron covered with brown tomentum. Abdomen with 6 distinct sternites, 2-4 medially impressed. Abdominal sternites, hind coxae, underside of middle and hind femora, and tibiae, all arcuate-striolate with inconspicuous bristles. Pygidium arcuate-striolate (superior part) to arcuate-punctate (inferior part), with numerous inconspicuous bristles; apex of pygidium (fig. 16) somewhat conical. Propygidium exposed, punctate; spiracles feebly conically produced.

Fore tibia (fig. 14) with apical-external denticle only; upperside punctate-striolate and punctate, underside heavily striolate; terminal spur simply acuminate, reaching tarsal segment 2. Fore tarsal segments short, their length increasing distad, their general shape subcylindrical; tarsal claws large, internal one with inferior tooth. Middle and hind tibiae (fig. 15) with ill-pronounced external protrusion, their apices tridentate; hind tibia slightly dilated; terminal spurs of middle tibia acuminate, very short, scarcely reaching tarsal segment 2; terminal spurs of hind tibia acuminate, reaching to near apex of tarsal segment 2. Middle and hind tarsi long, their segments subcylindrical-claviform; claws large, sickle-shaped. — Female sex unknown.

Identification. — This *Callynomes* is very robust, its propygidial spiracles are feebly produced, the posterolateral angles of the pronotum are distinct,

and the pygidial angle (in lateral view) is obtuse. Aedeagus, fig. 18.

Material examined. — Holotype male, from "Mindanao/X. 27.30 P.I.", "Galag River/Mt. Apo", "Altitude/6000 Ft." (Chicago museum, ex F. Psota).

Callynomes niveosparsa Mohnike (figs. 19-22, plate 1 fig. 6)

Identification. — This species is very similar to *C. luzonica*, but its pronotal shape and aedeagus are clearly different. Pygidium of male not so strongly pointed. External protrusion of middle and hind tibiae of the male obsolete. Aedeagus, figs. 21, 22.

Length ca. 15.5-17 mm.

Material examined. — Holotype, female, from Mindanao (Paris, ex Oberthür-Thomson-Semper), length 17 mm. Male from Mindanao: Surigao (Berlin museum, ex Moser), smaller, 15.5 mm long. The pygidium of the female holotype indeed has the strongly pointed pygidium figured by Westwood (1874: pl. 13 fig. 1); the Surigao male, however, has the pygidium rounded in dorsal view and feebly angulate in lateral view. More material is needed to confirm the identity of this male (on which most of the diagnostic information given here is based!).

Callynomes luzonica (Schultze) comb. nov. (figs. 23-27, plate 1 fig. 5)

Identification. — This is a small species with a strongly rounded pronotal base, and, consequently, poorly pronounced posterolateral pronotal angles. Its pygidium is strongly pointed and its propygidial spiracles are strongly produced. Aedeagus, fig. 26.

Length 14-15 mm.

Material examined. — One male from Luzon: Montalban (Washington museum, ex Baker 1927); one female from Mt Makiling, leg. Baker (L).

Anatonochilus Péringuey

This genus was proposed to accommodate a species incorrectly combined with *Oplostomus* (or *Hoplostomus*) MacLeay. Since Péringuey's diagnosis (1907) two further species have been described in *Anatonochilus* by Janson (1912); the types of these are in L. In the Chicago museum I came across a fourth species, which is described below.

There are some queries with the generic names *Anatonochilus* and *Anatochilus*, both proposed by Péringuey (1907) in the same work. The facts are these: (1) in the key (1907: 492-493) two very different genera are mentioned: *Anatochilus* and *Anatonochilus*; (2) *Anatochilus*, as in the key (p. 492), refers to a new genus, on p. 517, the name of which is, however,

spelled (line 1) "*Anatonochilus*"; (3) this genus includes one species "*Anatochilus*" *glabratus* (Boheman), till then combined with *Coenochilus*; (4) *Anatonochilus*, as in the key (p. 493), refers to the new genus on p. 539, the name of which is spelled there in the same manner; (5) this genus includes one species *Anatonochilus platycephalus* (Boheman), till then combined with *Hoplostomus*; (6) the corrections (Péringuey, 1908: 713) pertaining to these names only state that the name of the new genus on p. 517 (line 1) "instead of *Anatochilus* should read *Anatonochilus*"; (7) the index (1908: 731) gives *Anatochilus* for pp. 492, 517 (sic) and *Anatonochilus* for pp. 493, 539; (8) the index combines on p. 738 *glabratus* with "*Anatonochilus*", and (9) on p. 746 *platycephalus* with *Anatonochilus*. Apparently one lapsus has been "corrected" by another, and this leads me to maintain *Anatonochilus* for *platycephalus* and its allies, as indicated by points 1, 3, 4, 5, 7, 9. The citations in Neave (1939) are erroneous.

Generic diagnosis. — Dorsal outline of pronotum approximately cordiform (figs. 29, 34), rounded laterally, posterolateral angles obtuse or rounded off. Pygidium transverse; general surface slightly evenly convex, lacking particular elevations or impressions. Mentum as a whole greatly expanded, with medially angulate transverse ridge, the angle fitting between fore coxae; area in front of this ridge narrow (ratio length (longitudinal)/width 1/3). Antennal scapus inflated-dilated, rounded distally, surface concave.

Clypeus lacking peripheral projections, its anterior border usually slightly reflexed, outline bisinuate or straight with variably rounded anterolateral angles; clypeus laterally abruptly declivous. General surface of clypeofrontal disc (in profile) evenly convex, lacking distinct tubercles, ridges, impressions. Lateral margin of pronotum finely ridged, anterior noto-pectoral transition gradual. General surface of pronotum evenly convex, apart from slightly impressed midline; pronotum lacking basal paramedian impressions, lacking trichomes. Scutellum with acute apex. Elytra elongate, with apicosutural angle distinct, though not produced; disc without pattern of longitudinal striae; juxtasutural zone raised distally; elytral derm heavily sculptured, with or without two longitudinal costae. Labial palpi implanted laterally on mentum; maxillae and mandibles concealed. Maxillary galea shortly dentate, lacinia with brush. Anteromedian part of prosternum with low ridge; posteromedian part unmodified. Middle coxae subcontiguous. Mesosternum unmodified. Dorsally visible part of mesepimeron moderately convex. Abdomen with 6 visible sternites, indistinct in dorsal view, medially feebly concave in male sex, otherwise unmodified. Propygidium unmodified, spiracles small, circular, in no way produced. Antepropygidial spiracle just

covered by elytron. Parameres simply lobiform. Fore tibia robust, with 1 or 2 external denticles, proximally occasionally with an indistinct lobe; underside unmodified; terminal spur long, reaching tarsal segment 3, acuminate. Middle and hind tibiae robust, not complanate, with one non-apical external elevation, their apex trilobate-dentate. Lateral extremity of hind coxa scarcely visible in dorsal view, rounded posterolaterally. Tarsi all 5-segmented, slender, segments subcylindrical to club-shaped, unmodified; claws large, sickle-shaped. Derm uniformly black, lacking tomentous and cretaceous markings, generally glabrous, sparse pilosity (fore coxae) reddish-brown; predominant microsculpture of venter striolate, fore-body dorsally predominantly punctate. Habitus cremastochiliform; size large (length measured 15.5-21 mm).

Type-species. — *Hoplostomus platycephalus* Boheman, by monotypy.

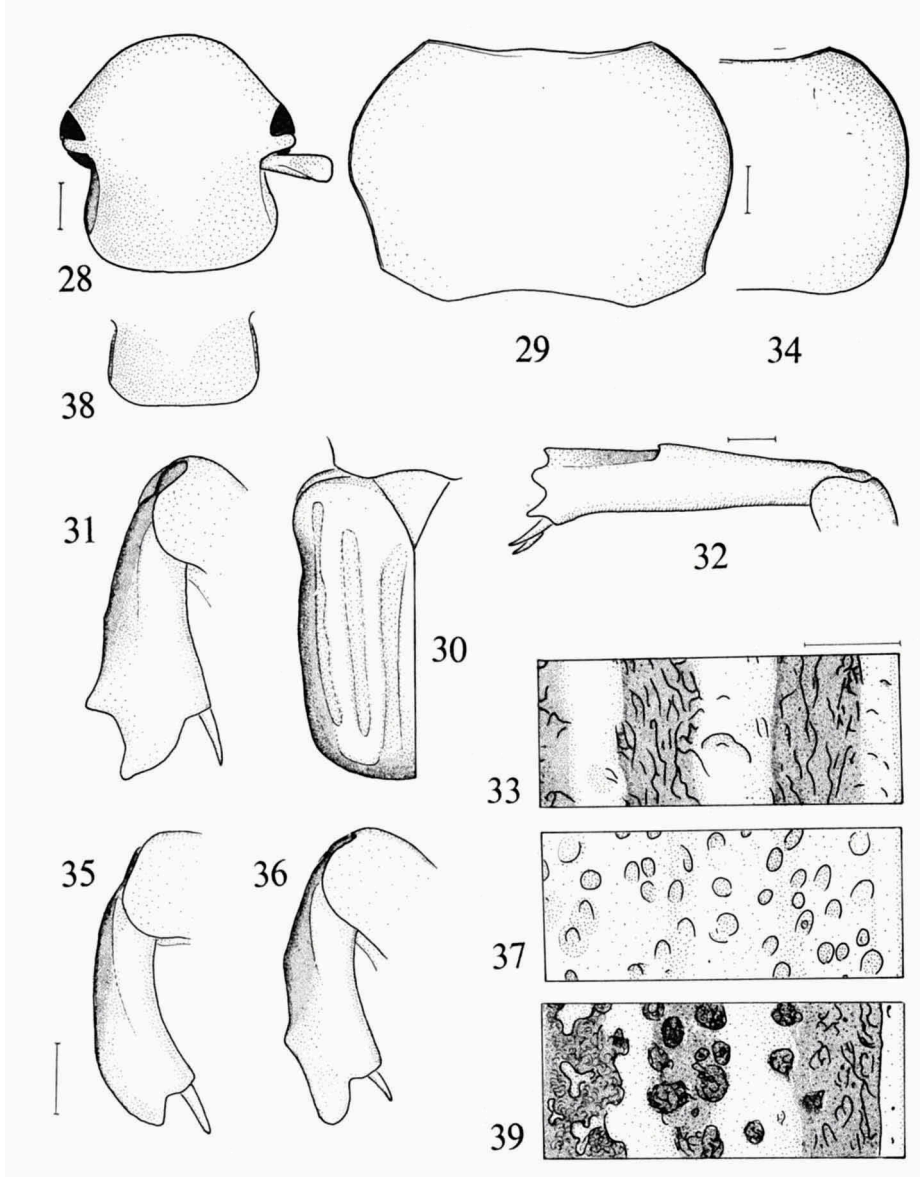
Affinities. — This genus belongs in the series of genera starting with *Oplostomus* MacLeay and ending with *Placodidus* Péringuey (see Krikken, 1976: 377). Its closest relative undoubtedly is *Laurentiana* Ruter, which could be considered a subgenus of *Anatonochilus*. The single known species of *Laurentiana* differs primarily in the shape of the pronotum, which has a sharply pronounced lateral angle (in addition to the posterolateral angle).

Distribution. — Apparently widespread in tropical Africa, but of the four known species, only the records of *A. platycephalus* are more abundant. Map, fig. 2.

Bionomics. — *Anatonochilus platycephalus* is met with crawling on the ground, and also under dry cowdung; other observations indicate an association with ants (Péringuey, 1907: 540).

Key to species of *Anatonochilus*

1. Posterolateral angles of pronotum more or less distinct. Microsculpture usually heavy, and elytral costae variably distinct (compare figs. on plate 2). Fore tibia of males (male of *pletus* unknown) with two external denticles (fig. 36) 2
— Posterolateral angles of pronotum usually rounded off (fig. 34). Fore tibia of males with obsolescent external denticles (fig. 35). General microsculpture of dorsum consisting of abundant punctation (plate 2 fig. 4), elytra without any fine striolation or aciculation . *platycephalus*
2. Elytra coarsely punctate and aciculate, longitudinal costae distinct. Posterolateral angles of pronotum distinct (fig. 29) 3
— Elytra coarsely punctate (fig. 37), longitudinal costae subdistinct. Posterolateral angles of pronotum subdistinct. Clypeal sides widely rounded. Small species (length 16.5-18.5 mm) . . . . . *rugosus*



Figs. 28-29. *Anatonochilus*; 28-33, *pletus*, holotype; 34-35, *platycephalus*, ♂ Potchefstroom; 36-37, *rugosus*, lectotype; 38-39, *angulicollis*, holotype. — Contours of: 28, head, full-face; 29, 34, pronotum (34, right half only); 30, left elytron; 31, 35, 36, right fore tibia; 32, right hind tibia; 33, 37, 39, elytral sculpture (section from suture to left); 38, clypeus (♀ Humpata). — Scale lines = 1 mm; same elements, same scale.

3. Clypeal sides widely rounded (fig. 28). Pronotum moderately convex. Elytra with juxtasutural and two further longitudinal costae entirely separated by densely, finely striolate interval (fig. 33). Large (length 21 mm) . . . . . *pletus*
— Clypeal sides shortly rounded (fig. 38). Pronotum strongly convex. Elytra with longitudinal non-juxtasutural costae not separated by striolate interval (fig. 39). Small (length ≤18.5 mm) . . . *angulicollis*

Checklist of *Anatonochilus*

Anatonochilus Péringuey, 1907: 539; type-sp. *Hoplostomus platycephalus* Boheman, 1857 (monotypy). — Afrotropical, 4 spp.

Described species

A. angulicollis Janson, 1912: 266; holotype in L. — Angola (type-loc. Humpata).

A. platycephalus (Boheman, 1857: 49, *Hoplostomus*); type in Stockholm. — South Africa (type-loc. Gariep River), Zimbabwe Rhodesia.

A. pletus Krikken, present paper; holotype in Chicago; ♂ unknown. — Tanzania (type-loc. Lindi).

A. rugosus Janson, 1912: 266; lectotype in L. — Uganda (type-loc. here confined to Masaba), Sudan.

Species accounts

Anatonochilus platycephalus (Boheman) (figs. 34-35, plate 2 fig. 4)

Identification. — Apart from some characters of minor importance, *A. platycephalus* is distinguished by the shape of the fore tibia in the male sex, and by its densely, simply punctate pronotum and elytra. All other species have their elytra marked with more or less extensive areas of striolation or aciculation.

Length 16.5-20.5 mm.

Material in L. — South Africa: Bellevue (Transvaal), x-xi.1936, Posthumus (1 ♀, ex VL — MacGillavry); Potchefstroom (Transvaal), Aures (1 ♂, 1 ♀, ex VL-J). — Zimbabwe Rhodesia: Matabeleland (1 ♀, ex VL-J-Van de Poll); Salisbury, 7.xi.1914, O'Neil (1 ♀, ex VL-Gérard).

Anatonochilus rugosus Janson (figs. 36-37, plate 2 fig. 3)

Identification. — The elytra of this rather small species are covered with large, well-defined, more or less contiguous "punctures", which are not aciculate inside, like those on *pletus* and *angulicollis*. The fore tibia of the

male has two distal-external denticles, the pronotal hind angles are subdistinct, and the pronotal midline is slightly impressed posteriorly.

Length 16.5-18.5 mm.

Material in L. — Lectotype ♂ from Masaba (Uganda), Heath (ex VL-J), here designated. Janson (1912) also mentioned "Bussu Busoga". Further material from Sudan: Lado Distr.: Ujiga, 23.iii.1912, Stigand (3 ♂, 2 ♀, ex VL-J).

Anatonochilus pletus sp. nov. (figs. 28-33, plate 2 fig. 1)

Holotype (female). — Approximate length 21, width 10.5, height 7 mm. Entirely black; opaque, due to varied microsculpture; derm virtually glabrous. Habitus, plate 2 fig. 1.

Cephalic contours, fig. 28. Anterior margin of clypeus slightly reflexed; lateral ridge limiting clypeal disc sharply defined. General surface of head nearly evenly convex; derm crowdedly punctate, punctures fine but distinct, effaced toward clypeal margin. Maximum width of head 3.8 mm.

Pronotal contours, fig. 29. General surface of pronotum evenly convex; lateral borders completely marginate, posterolateral angles distinct; derm densely to crowdedly punctate, striolate laterad; diameters of punctures beside pronotal centre 0.1 mm, their densities ca. 35/sq. mm. Median length of pronotum 4.8, maximum width 7.7 mm. Scutellum (fig. 30) crowdedly punctate.

Elytral contours and disposition of longitudinal costae, fig. 30. Prediscal surface of elytra slightly depressed; juxtasutural zone raised, behind this depression; disc with two distinct though superficial, sparsely arcuate-striolate costae; intervening discal spaces entirely aciculate-striolate (fig. 33); lateral declivity irregularly transversely rugulate; humeral and apical umbones moderately pronounced; apicosutural angle subdistinct. Sutural length of elytra (from scutellar apex) 9.0, maximum length 12.0, humeral width (combined) 9.9 mm.

Mentum strongly expanded-dilated (covering the other mouthparts), with transverse angle fitting between fore coxae; derm minutely striolate. Femora, coxae, lateral parts of pectus, densely, braidedly striolate. Metasternal disc abundantly, very finely punctate. Abdominal sternites laterally and anteanal sternite entirely, finely striolate. Pygidium feebly evenly convex, derm entirely, finely aciculate-striolate; anal border marginate. Propygidial spiracles not elevated.

Fore tibia (fig. 31) broad, with two external denticles; terminal spur elongate-acuminate, reaching apex of tarsal segment 3. Middle and hind tibiae (fig. 32) slightly complanate, with external denticle at 0.3 from apex;

tibial apices tridentate; terminal spurs elongate-acuminate; tibial derm crowded with fine, locally contiguous, variably elongate hemipunctures. Tarsi all long and slender, with large, sickle-shaped claws. — Male sex unknown.

Identification. — With *angulicollis* this new species shares the distinctly costate elytra and the distinct posterolateral angles of the pronotum. Apart from the fact that the elytral costae are completely separated by striolate intervals, the details of this striolation are very different from that of *angulicollis*, as is described under that species (see below). The single known female of *pletus* makes a very plump impression compared to the other species.

Material examined. — Holotype male, from "D. Ost Afrika/Lindi" (Chicago museum, ex F. Psota—A. Ondrej).

Anatonochilus angulicollis Janson (figs. 38-39, plate 2 fig. 2)

Identification. — This species is by its elytral sculpture very closely related to *pletus*, but differs in the details of the microsculpture: whereas on *pletus* the striolation between the smooth spaces consists of predominantly isolated short streaks, it is very dense and braided on the elytra of *angulicollis*. In the other species of *Anatonochilus* the anterolateral sections of the clypeal border are widely rounded; in *angulicollis* they are shortly rounded.

Length 15.5-18 mm.

Material in L. — Holotype ♂ from Angola: Humpata, Van der Kellen, ex VL-J); 1 ♂, 3 ♀, same data (L), identified by Janson as *platycephalus*, — afterwards Janson apparently realized that the Van der Kellen material belonged to a different species, and he based the description of *angulicollis* on the male he had retained.

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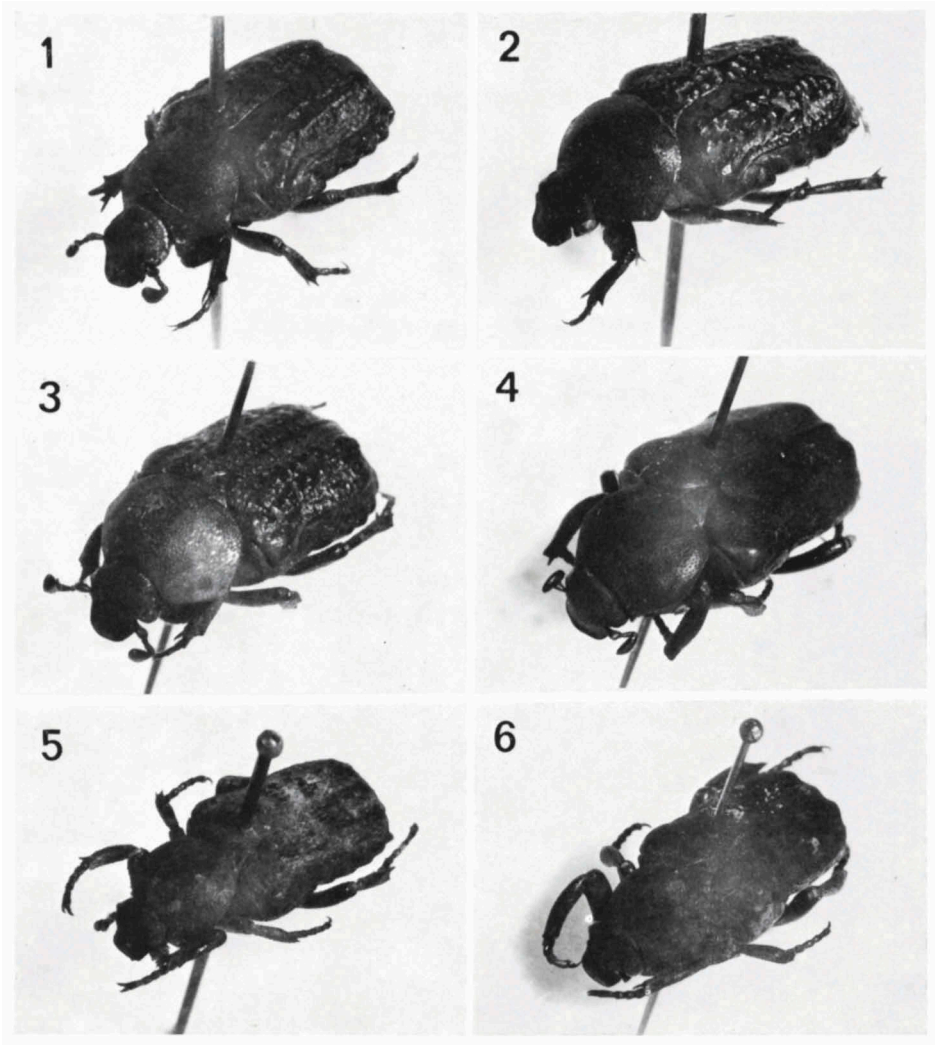
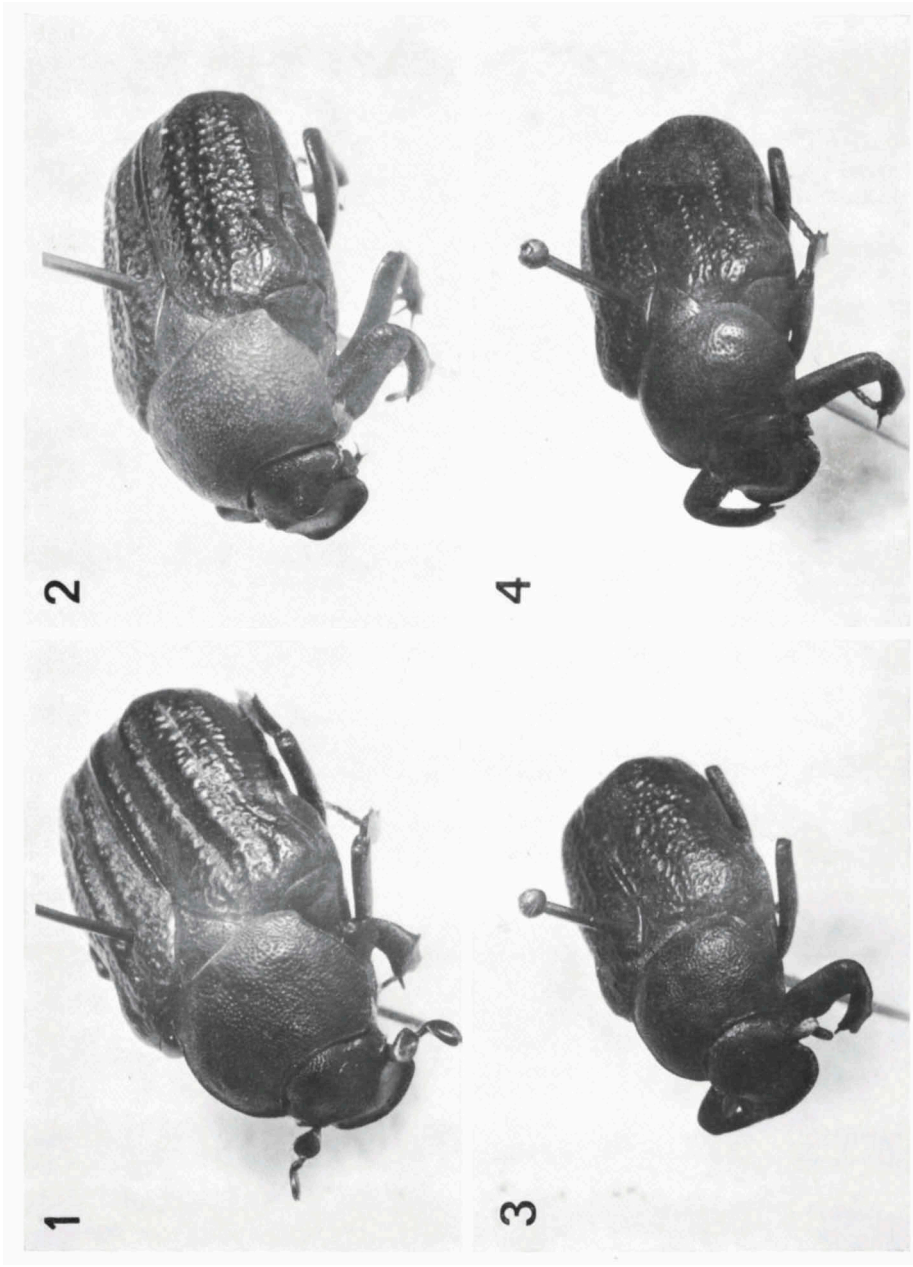


Pseudopilinurgus (1-3) and *Callynomes* (4-6). 1, *P. aciculatus,* ♀ Ludi, 14 mm; 2, *cribrosus,* ♀ Guinea, 14 mm; 3, *erratus,* holotype, 14 mm; 4, *C. apo,* holotype, 19 mm; 5, *luzonica,* ♂ Montalban, 16 mm; 6, *niveosparsa,* ♂ Surigao, 18 mm.



Anatonochilus. 1, *pletus*, holotype, 21 mm; 2, *angulicollis*, holotype, 17.5 mm; 3, *rugosus*, lectotype, 19 mm; 4, *platycephalus*, ♂ Potchefstroom, 20.5 mm.