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SOME PECULIAR CETONIINE BEETLES FROM SOUTH WEST AFRICA

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With 13 text-figures

ABSTRACT

Protoclita tuberifrons and *Ischnostomiella denticeps*, new genera and species from South West Africa, are described and illustrated. They are placed in the cetoniid subtribe Ischnostomina.

In a consignment of Cetoniidae from the State Museum, Windhoek, I encountered some peculiar specimens apparently referable to the group around *Ischnostoma* Gory & Percheron, the Ischnostomina of Schenkling (1921). Having seen all the genera and most of the species placed in this group, plus some candidates for inclusion currently placed in other groups, I can only conclude that the specimens concerned represent two new genera. Although the position of these genera is not yet entirely clear, pending a more extensive generic reclassification, they are here characterized within the conventional limits of the Ischnostomina.

The Ischnostomina are usually considered an old element in the cetoniid fauna of southern Africa (Schein, 1960). Only a few of the ca. 15 genera currently included occur elsewhere in Africa; one genus (*Bietia* Fairmaire) occurs in Asia. The delimitation of the Ischnostomina has never been the subject of serious study. My impression is that the group is very heterogeneous (cf. group diagnosis and key given below), and therefore I expect that the establishment of its monophyly (with the possible removal of certain genera) will prove to be extremely difficult. One of the reasons for considering it an old group is the absence or near-absence of a mesometasternal projection, a negative feature also characteristic of the cremastochiliform cetoniines; on the basis of out-group frequency, i.e. the absence of this

projection in non-cetoniine scarabs, this feature could be considered plesiomorphous. Although we know little about the habits of the Ischnostomina, these seem to be rather special in the context of the predominantly diurnal flower-visiting Cetoniinae: crepuscular, burrowing, dung-feeding, termitophilous, are some of the qualifications given to them by Péringuey (1907). One of our specimens, however, was found on an unspecified flowering plant. Whatever the exact habits of our novelties will appear to be, their unusual mouthparts suggest special feeding habits.

Subtribe Ischnostomina

Tentative diagnosis. — Middle coxae strongly approximated, never widely separated by a mesometasternal protrusion projecting beyond these coxae (lateral view). Mentum and labium frequently narrowed in front, with strongly approximated labial palpi.

Clypeus usually unmodified (nasiform in males of *Ischnostoma* Gory & Percheron, with anteromedian prominence in *Hypselogenia* Burmeister); frons occasionally with slight elevation; pronotal apex in certain genera with roundish protrusion; no further ornamentation. Elytra frequently with longitudinal costae and/or striae. Prosternum anteriorly more or less tectiform, lacking apophysis. Pygidium transverse, usually unmodified. Parameres simply lobiform, apart from slight protrusions and/or impressions. Hind tibiae and/or femora frequently enlarged, apparently for fossorial purposes. Coloration of derm never brightly metallic or iridescent, usually black to brown, uniform or with simple colour pattern, occasionally with more or less extensive (white to brown) cretaceous cover.

Key separating the new genera from the remainder of the Ischnostomina

1. Frons lacking isolated roundish protuberance. Hind tibial apex not with two approximated external denticles widely separated from internal denticle 2
— Frons medially with roundish protuberance (fig. 1). Hind tibial apex with two approximated denticles externally (only one distinct in fig. 5, ventral view) and one denticle internally, widely separated from each other. Terminal segment of maxillary and labial palpi dilated. Clypeus quadrate (fig. 1), disc deeply concave. Fore tibia bidentate (fig. 4). Elytra distinctly striate (fig. 3) . . . . . *Protoclita*
2. Clypeus with dentiform anterior angles on strongly elevated margin (fig. 7), disc concave, without protrusions. Hind tibial apex (ventral view, fig. 11) with short external and very long internal denticle or spine, widely separated from each other. Elytra with some longitudinal costae

(fig. 9). Mentum and palpi, fig. 13. Fore tibia tridentate (fig. 10). Small, total length about one cm . . . . . *Ischnostomiella*

— Clypeal margin (except in females of *Hypselogenia* Burmeister), hind tibial apex, elytra, mouthparts, and size, different . . remaining genera

Genus **Protoclita** nov.

Diagnosis. — Frons medially with more or less isolated protuberance. Clypeus strongly concave, border ridged, outline (sub)quadrate. Middle and hind tibiae with one well-pronounced external elevation; apex of hind tibia inferiorly with three short denticles. Fore tibia with two external denticles and short acuminate terminal spur; underside unmodified. Elytron simply striate-costate; apicosutural angle distinct; posthumeral emargination very shallow; humeral umbone distinct, apical umbone ill defined. Mentum narrowed in front; terminal segment of maxillary and labial palpi dilated, concave upperside very distinct.

Eye-canthi unmodified. Pronotum with distinct anterolateral angles (dorsal view), posterolateral angles rounded off; general surface evenly convex; lateral and anterior borders marginate; anterior noto-pectoral transition abrupt. Scutellar sides sinuate, apex rounded. Antennal scapus claviform; lamellae well developed. Preprosternum medially more or less tectiform. Mesepimeron in dorsal view broadly distinct, very convex. Mesosternum with posteromedian lobe interposed between middle coxae, contiguous with short metasternal lobe, middle coxae very narrowly separated. General surface of metasternal disc flat. Abdomen with 7 visible sternites; abdomen of male shallowly concave medially; dorso-ventral transition of sternites gradually convex, just visible from above. Propygidial spiracles exposed. Pygidium transverse, general surface feebly convex, more or less visible from above; anal border (feebly) marginate. Terminal spurs of middle and hind tibiae narrow, more or less parallel-sided, or tapering. Hind femur enlarged. Hind coxa laterally immarginate, posterolateral angle rounded off. Tarsi robust, with well-developed sickle-shaped claws; hind tarsal segment 1 at least as long as segment 2. Aedeagus consisting of two simply lobiform parameres. Habitus almost cremastochiliform; small, total length between 1 and 1.5 cm. Derm black and/or brown, generally annulate-punctate; pilosity sparse, black or dark brown. Sexual dimorphism only evident in abdominal shape.

Type-species. — *Protoclita tuberifrons* sp. nov.

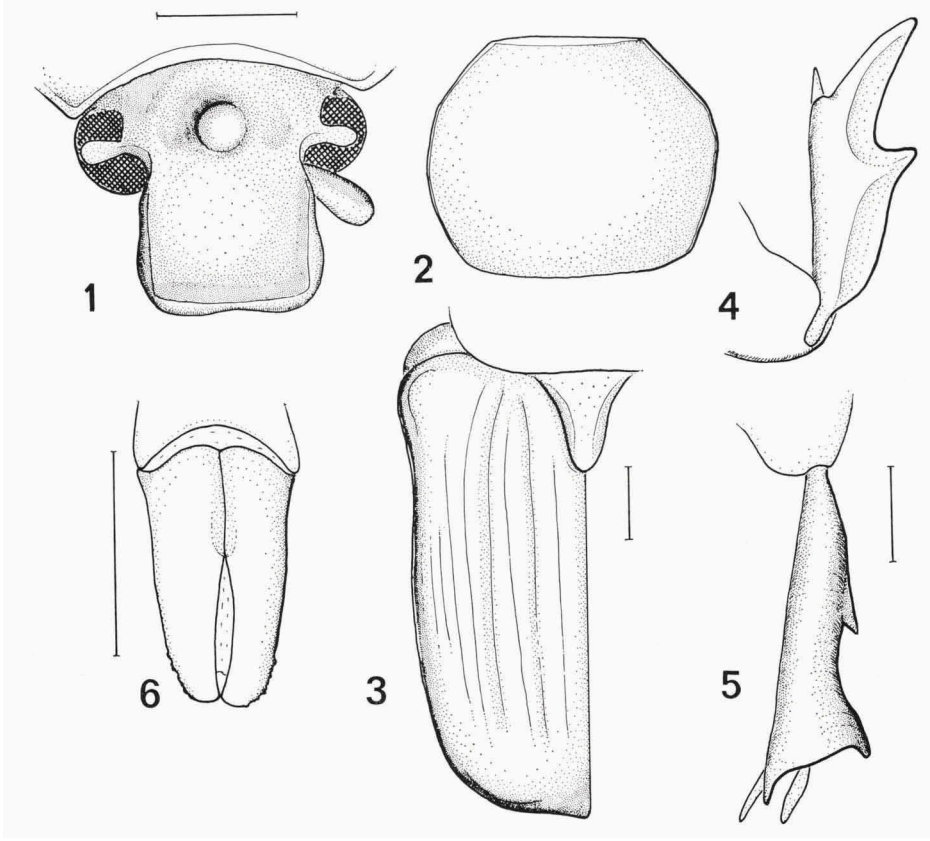
Affinities. — It seems that *Gariep* Péringuey is rather closely related to *Protoclita*. Both certainly are Ischnostomina, having the two first-mentioned features of the above group diagnosis; both have a protuberant frons, and share several other properties. But on the basis of overall similarity, it must

be admitted that *Protoclita* could be equally related to several of the other genera currently included in the group. *Gariep* differs from *Protoclita* in the following characters: frontal elevation transverse (not a roundish protuberance); elytra at most with some longitudinal costae (not striate-costate); middle coxae more widely separated (not subcontiguous); fore tibia tridentate (instead of bidentate); etcetera.

Note. — *Protoclita* is to be considered a feminine noun.

Protoclita tuberifrons sp. nov. (figs. 1-6)

Holotype (male). — Approximate length 11, width 5.5, height 3.5 mm. Moderately shiny, elytra opaque; black, mouthparts and antennal club brown, pilosity brown-black.



Figs. 1-6. *Protoclita tuberifrons*, holotype. Contours of: 1, head, full-face view; 2, pronotum; 3, left elytron, scutellum; 4, right fore tibia; 5, left hind tibia; 6, parameres. Scale lines = 1 mm; 1, 4, same scale; 2, 3, same scale.

Cephalic contours, fig. 1. Clypeal border sharply ridged; clypeal derm irregularly striolate-punctate. Frons with roundish tubercle; derm coarsely rugulate-punctate. Head with many long, erect black-brown setae. Maximum width of head capsule (including eyes) 2.0, maximum clypeal width 1.25 mm.

Pronotal contours, fig. 2; disc evenly feebly convex; apical and lateral borders marginate; pronotal punctation abundant, increasingly dense laterad, to rugulate-punctate; punctures on pronotal centre roundish, rather deep, their diameters 0.05-0.10 mm, densities ca. 40/sq. mm; micropunctation vaguely distinct at × 50; lateral surface and base with many long, erect black setae. Median length of pronotum 3.2, maximum width 4.0 mm. Scutellum (fig. 3) declivous laterally, disc rugulate-punctate.

Elytral contours and striation, fig. 3; disc deeply striate, five striae between suture and humeral umbone; intervals 1, 3, 5 more strongly convex than 2, 4, etc.; striae consisting of more (disc) or less (sides) confluent annulate punctures; humeral umbone shiny, simply punctate; elytral derm generally opaque, due to microreticulation; setae sparse, black, erect. Sutural length of elytron 4.8, maximum (longitudinal) length 6.5, maximum (humeral) width combined 5.3 mm.

Antennal lamellae suboval in outline, slightly longer than segments 2-7 combined. Preprosternal ridge slightly protuberant to gula. Pectus laterally irregularly striolate-punctate, setose; general surface of metasternal disc flat, abundantly punctate, setose. Mesometasternal transition between middle coxae very narrow, slightly protuberant, suture indistinct. Abdominal sternites abundantly hemipunctate, setose, setae long, semierect; abdominal venter medially slightly impressed. Pygidium with feebly, evenly convex general surface; anal border marginate; derm densely, braidedly striolate, with indistinct punctures distally.

Fore tibia (fig. 4) with 2 well-developed external denticles; underside unmodified; derm irregularly punctate-setose; terminal spur small, tapering, reaching to near apex of tarsal segment 2. Middle and hind tibiae (fig. 5) with spiniform external protrusion; apex of middle tibia bispinose inferiorly, of hind tibia modified, fig. 5; derm irregularly punctate-setose; terminal spurs long, those of middle tibiae acuminate, those of hind tibiae with rounded tip. Tarsi long, middle and hind tarsi rather robust; all consisting of claviform segments, with large sickle-shaped claws. Hind femur dilated, outline subelliptic, derm irregularly hemipunctate-setose.

Parameres (fig. 6) simply lobiform, distolaterally with micropustules (very distinct at × 50), apex slightly deflexed.

Variation. — The female paratype is smaller (length 10 mm) and its tarsi

and the elytra are reddish brown. Abdominal venter evenly transversely convex.

Material examined. — Holotype male from Noachabeb 97, Keetmanshoop, SE 2718 Ad, 7-12.i.1972 (Windhoek museum H 6012). Paratype female from Fish River Canyon, Warmbad, SE 2717 Da, 13/14.i.1972, flowering plants (Windhoek museum H 6026).

Genus **Ischnostomiella** nov.

Diagnosis. — Clypeus anteriorly with pair of upright denticles; clypeal disc distinctly concave. Middle and hind tibiae with one external elevation; their apices inferiorly bidentate, hind tibial denticles widely separated, interior one long. Fore tibia with three external denticles and long acuminate terminal spur; underside unmodified. Elytron with (three) longitudinal costae (juxtasutural one included); apicosutural angle distinct; posthumeral emargination distinct; humeral umbone distinct, apical umbone obsolescent. Mentum narrowed in front; palpi unmodified.

Frons unmodified. Eye-canthi unmodified. Pronotum with obtuse anterolateral angles (dorsal view), posterolateral angles rounded off; general surface evenly convex; anterior border marginate, lateral borders marginate-crenulate; anterior noto-pectoral transition abrupt. Scutellum triangular, with shortly rounded apex. Antennal scapus claviform; lamellae well developed. Preprosternum medially more or less tectiform. Mesepimeron in dorsal view broadly distinct, very convex. Mesosternum with posteromedian lobe interposed between middle coxae, contiguous with short metasternal lobe; middle coxae very narrowly separated. General surface of metasternal disc flat. Abdomen with 7 visible sternites; dorso-ventral transition of sternites gradually convex, invisible from above. Propygidial spiracles exposed. Pygidium transverse, general surface feebly convex, indistinct from above; anal border immarginate. Terminal spurs of middle and hind tibiae narrow, more or less parallel-sided, or tapering. Hind femur enlarged. Hind coxa laterally immarginate, posterolateral angle distinct. Tarsi long and slender, with well-developed sickle-shaped claws; hind tarsal segment 1 at least as long as segment 2. Aedeagus consisting of two simply lobiform parameres. Habitus plump; very small, total length about 1 cm. Derm dull black, dorsum heavily punctate (on some parts more or less scabrous), forebody abundantly setose. — Female sex unknown.

Type-species. — *Ischnostomiella denticeps* sp. nov.

Affinities. — A position near *Hypselogenia* Burmeister because of its bidentate clypeus would be most artificial, *Hypselogenia* being a very dissimilar group (clypeus of males with horn; vertex covered by apical margin

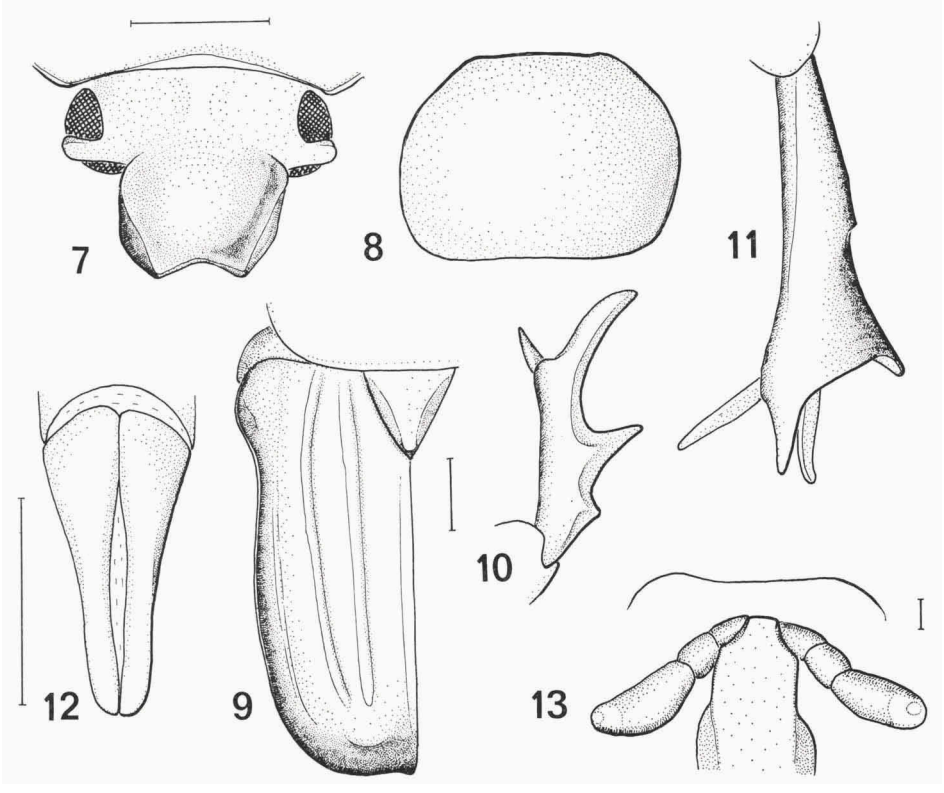
of pronotum; mentum with peculiar appendix; etcetera). The only positive statement that can be made is the same unsatisfactory one as given under *Protoclita*: *Ischnostomiella* could, on the basis of overall similarity, be equally related to several of the ischnostomine genera.

Note. — *Ischnostomiella* is to be considered a feminine noun.

Ischnostomiella denticeps sp. nov. (figs. 7-13)

Holotype (male). — Approximate length 10, width 5, height 3.5 mm. Opaque, due to heavy microsculpture; black to brownish black, pilosity yellowish.

Cephalic contours, fig. 7. Clypeus with pair of strong denticles in front; lateral border ridged; general surface concave; derm irregularly, abundantly punctate-setose. Clypeofrontal transition protuberant; frons rugulate-punctate



Figs. 7-13. *Ischnostomiella denticeps*, holotype. Contours of: 7, head, full-face view; 8, pronotum; 9, left elytron, scutellum; 10, right fore tibia; 11, left hind tibia; 12, parameres; 13, mentum and labial palpi, with anterior border of clypeus. Scale lines = 1 mm, with 13 = 0.1 mm; 7, 10, 11, same scale; 8, 9, same scale.

and abundant setose; setae long, suberect, more or less recurved. Maximum width of head capsule (including eyes) 1.8, maximum clypeal width 1.10 mm.

Pronotal contours, fig. 8; disc evenly feebly convex; apical and lateral borders marginate; posterior half of lateral border crenulate; pronotum entirely crowded with irregular, vaguely annulate punctures, the majority of these with a long semierect seta; punctures on pronotal centre very distinct, their diameters 0.05-0.15 mm, densities ca. 50/sq. mm. Median length of pronotum 3.0, maximum width 4.0 mm. Scutellum (fig. 9) declivous laterally, disc with fine, somewhat scabrous annulate punctation.

Elytral contours, fig. 9; disc with three longitudinal costae; humeral umbone shiny, simply punctate; elytral disc crowdedly annulate-punctate, more or less scabrous, costae only slightly affected by this microsculpture; annulate punctation elsewhere dense, but not becoming scabrous; elytral setae sparse, much shorter than those on head and pronotum, semierect to erect. Sutural length of elytron 4.2, maximum longitudinal length 5.7, maximum (humeral) width combined 4.9 mm.

Antennal lamellae suboval in outline, slightly longer than segments 2-7 combined. Mentum and palpi, fig. 13. Preprosternum simply tectiform. Pectus laterally hemipunctate to rugulate, with abundant long setae; general surface of metasternal disc flat, shiny, glabrous. Mesometasternal transition between middle coxae very narrow, coxae apparently separated mainly by mesosternal process; no protuberance. Abdominal sternites shiny with transverse row of hemipunctures bearing (sub)appressed seta; no medial impression. Pygidium with feebly convex disc and shallowly concave distolateral areas; anal border immarginate; derm completely scabrous; sparsely setose.

Fore tibia (fig. 10) with 3 external denticles, basal one small, others long, acuminate; underside unmodified; terminal spur slender, acuminate, extending slightly beyond tarsal segment 1. Middle and hind tibiae (fig. 11) with slight external protrusion; apex of middle tibia sharply bispinose inferiorly, of hind tibia modified, fig. 11; terminal spurs of middle and hind tibiae very long, acuminate, extending slightly beyond tarsal segments 1. Hind femur dilated, outline subelliptic. Tibiae and femora all abundantly hemipunctate-setose. Tarsi all very long and slender, with large, sickle-shaped claws.

Parameres (fig. 12) simply lobiform, in profile upper- and undersides evenly arcuate, and tapering to slightly deflexed apex.

Material examined. — Holotype male from Windhoek, SE 2217 Ca, 18-23.xii.1973 (Windhoek museum H 15555).

Post scriptum. — After the typescript of this paper had been submitted for publication, G. Ruter sent me a second specimen, in poor condition. It

belongs to the Musée Royal de l'Afrique Centrale, Tervuren, and came from Okanjande, S.W. Africa. I have labelled it paratype. This paratype is extremely similar to the holotype.

Acknowledgements

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