

# Taxonomic revision of *Anacaena* THOMSON, 1859

## I. Afrotropical species (Coleoptera: Hydrophilidae)

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### Abstract

The genus *Anacaena* THOMSON (Coleoptera: Hydrophilidae) is redescribed. The hitherto known five species are redescribed and nine new species, *A. angulata*, *A. fallax*, *A. glabriventris*, *A. gracilipalpis*, *A. lutea*, *A. parvicristata*, *A. polita*, *A. reducta*, and *A. sucinea*, from the Afrotropical Region are described. A key to the Afrotropical species is given.

**Key words:** Coleoptera, Hydrophilidae, *Anacaena*, taxonomy, revision, key to species, new species, Afrotropical Region.

### Introduction

The genus *Anacaena* THOMSON, 1859 is known from all major biogeographical regions, and comprises fifty-eight species. Due to the low degree of exploration of the Afrotropical Region, only five species are described from there. In the last years many specimens of *Anacaena* have been collected in South Africa and in Madagascar. Among this material, nine undescribed species could be discovered. This points to a high diversity of *Anacaena* in the Afrotropical Region, a fact which was not known before. However, the number of collecting localities in this region is still very limited.

The first full generic descriptions of *Anacaena* were published by REY (1884) and KIESENWETTER (1875), based on the few Palearctic species known at that time. Their generic concept was subsequently followed by many authors (e.g. d'ORCHYMONT 1933, 1938, 1942, HANSEN 1991). However, the delimitation of the genus is still rather unclear. *Anacaena* is closely related to *Paracymus* THOMSON, 1867, *Crenitis* BEDEL, 1881, and *Paranacaena* BLACKBURN, 1888, and according to d'ORCHYMONT (1933) there are transitions in the character states between *Anacaena* and *Paracymus*. The morphological diversity (d'ORCHYMONT 1933) of *Anacaena* led REY (1884) to establish subgenera (*Brachypalpus* and *Anacaena*), and other authors to split off genera (e.g. *Metacymus* SHARP, 1882; *Laccobiellus* ABEILLE DE PERRIN, 1901; *Crenitulus* WINTERS, 1926), which were later again synonymized with *Anacaena* by d'ORCHYMONT (1933, 1938). The distinguishing characters between these genera were studied by many authors, extensively by d'ORCHYMONT (1933, 1938, 1942) and HANSEN (1991), but also by WINTERS (1926), LEECH (1948), LOHSE (1971), MATSUI & NAKANE (1985), BERGE HENEGOUWEN (1986), HEBAUER (1994), and GENTILI (1998). BALFOUR-BROWNE (1939) added the genus *Notohydus* BALFOUR-BROWNE, 1939 to this group. HANSEN (1991) united all these genera under the tribe Anacaenini, including *Notionotus* SPANGLER, 1972, stating that the relationships between the genera of this tribe still remain unresolved (HANSEN 1991: 134).

The uncertainty of generic delimitation can best be illustrated by the fate of the taxonomic rank of *Paranacaena*, which was originally described as subgenus of *Paracymus*, elevated into generic rank by KNISCH (1924), later synonymized with *Anacaena* by d'ORCHYMONT (1942), and finally re-established as a distinct genus by GENTILI (1993).

Despite the uncertainty of generic separations within the tribe Anacaenini, four new genera were established recently: *Grodum* HANSEN, 1999, *Phelea* HANSEN, 1999, *Enigmata* HANSEN, 1999, and *Hebauerina* GENTILI, 2002. HEBAUER (1994) discussed possible relationships between the genera of Anacaenini, but a phylogenetic analysis has never been performed, and a global revision of *Anacaena* is still missing.

Subject of the first part of the present paper is therefore a redescription of *Anacaena*, based on comparative studies of the sclerotized structures of adult Anacaenini. The distinctive characters are discussed, but a phylogenetic analysis of the genera of Anacaenini is in preparation and not subject of this paper.

In regard to the morphological terminology of thoracic structures I follow CAMPAU (1940), LARSÉN (1966), MATSUDA (1970), and BEUTEL (1986). Drawings of external morphological details are added to illustrate the terms used.

### Material and methods

For the redescription of *Anacaena* and comparison with closely related genera, in addition to the Afrotropical species described below, representatives of the following species were examined: *Anacaena advena* (SHARP, 1890), *A. attigua* d'ORCHYMONT, 1942, *A. corumbana* d'ORCHYMONT, 1938, *A. debilis* (SHARP, 1882), *A. gerula* d'ORCHYMONT, 1942, *A. globulus* (PAYKULL, 1798), *A. limbata* (FABRICIUS, 1792), *A. lutescens* (STEPHENS, 1829), *A. marchantiae* (WOLLASTON, 1857), *A. minima* (SHARP, 1890), *A. minuscula* d'ORCHYMONT, 1942, *A. minutalis* d'ORCHYMONT, 1942, *A. mista* d'ORCHYMONT, 1932, *A. modesta* d'ORCHYMONT, 1932, *A. moreirai* d'ORCHYMONT, 1921, *A. suturalis* (LECONTE, 1866), *A. yunnanensis* d'ORCHYMONT, 1942, *Crenitis apicalis* (REITTER, 1896), *C. convexa* Ji & KOMAREK, 2003, *C. primorica* HEBAUER 1994, *C. punctatostriata* (LETZNER, 1840), *Hebauerina nanica* GENTILI, 2002, *Notionotus notaticollis* SPANGLER, 1972, *Notohydrus montanus* (BLACKBURN, 1891), *Paracymus aeneus* (GERMAR, 1824), *P. chalceolus* (SOLSKY, 1874), *P. corrinae* WOOLDRIDGE, 1969, *P. desolatus* WOOLDRIDGE, 1971, *P. phalacroides* (WOLLASTON, 1867), *P. pygmaeus* (MACLEAY, 1871), *P. relaxus* REY, 1884, *P. rufocinctus* BRUCH, 1950, *P. scutellaris* (ROSENHAUER, 1856), *P. vulgatus* WOOLDRIDGE, 1977, *Paranacaena humilis* (d'ORCHYMONT, 1942), and *P. pilosa* GENTILI, 1996.

Mouth parts, thoracic structures and male genitalia were cautiously dissected, placed in concentrated lactic acid and investigated several hours later. The specimens were examined using a binocular Leica MZ 12.5 with diffuse and focussing light sources, and a light microscope Olympus BX 41. Measurements (total body length and width, elytral index, distance between eyes, etc.) were taken using a micrometric eyepiece, ink drawings were made by use of a drawing tube.

Due to the low number of collecting sites in the Afrotropical region, a distribution map would not reflect the actual distribution of the species and is therefore not provided in this paper.

### Abbreviations

CHG	Collection F. Hebauer, Grafling (Germany)
CFP	Collection M. Fikáček, Praha
E.I.	Elytral index (= largest elytral length / largest elytral width)
HUB	Museum der Alexander Humboldt Universität, Berlin
ISNB	Institut National des Sciences Naturelles, Bruxelles
MNS	Staatliches Museum für Naturkunde, Stuttgart
NMW	Naturhistorisches Museum Wien
ZMUC	Zoological Museum Copenhagen

***Anacaena* THOMSON, 1859**

*Anacaena* THOMSON, 1859: 18; BALFOUR-BROWNE 1955; ICZN 1960

*Crenyphilus* MOTSCHULSKY, 1845: 32 (incorrect spelling, rejected name)

*Creniphilus* MOTSCHULSKY, 1845: 549 (justified emendation, suppressed name)

*Crenophilus* AGASSIZ, 1847: 103 (unjustified emendation, rejected name)

*Metacymus* SHARP, 1882: 65 (junior synonym)

*Laccobiellus* ABEILLE DE PERRIN, 1901: 60 (junior synonym)

*Crenitulus* WINTERS, 1926: 54 (junior synonym)

Type species: *Hydrophilus globulus* PAYKULL, 1798: 188.

**REDESCRIPTION** (Figs. 1-5): Total body length ca. 1.5 - 3.3 mm. Body strongly convex, oval to broadly oval, sometimes more elongate, its outline not interrupted between pronotum and elytra. Colour from brown to black.

Head: Labrum well developed, distinctly exposed, frontally fringed with fine long setae, distinctly excised in the middle, frontal portion flexed ventrad. Lateral margin of mandible without incision, with distinct obtuse angle between basal and apical portion, apex bifid, distal row of setae on mesal mandibular margin long and fine, retinaculum absent. Clypeus and frons with fine to coarse irregular punctation, sometimes with sparse additional setiferous punctures. Shape of clypeus highly variable: lateral margin as long or much shorter than longitudinal diameter of one eye, antero-lateral angles varying between very distinct and obsolete, preocular portion immediately converging anteriorly or projecting laterad before converging. Frontoclypeal suture not or weakly visible, often solely laterally in front of eyes. Eyes of small to moderate size, weakly convex, not protruding, separated by 3.0 - 5.6 times the width of one eye, hardly to distinctly emarginate anteriorly, with almost equally sized dorsal and ventral portion, ventrally with distinct sharp or blunt short ridge rising from postero-median corner of eye. Antennae with seven to nine antennomeres, pedicellus distinctly shorter than scapus, antennomere 3 (= first intermediate segment) of variable length, pubescent club ca. 2.5 - 3.0 times as long as wide. Galea with six regular rows of recurved fine long setae. Maxillary palpi not quite 0.5 times as long as width of head, palpomere 2 inflated and variably thicker than the following palpomeres, apical palpomere almost symmetrical to asymmetrical with more straight inner face, varying between slender to stout, apex of palpomere 4 truncate, rounded, or pointed. Palpomere 2 not longer than palpomere 4. Mentum 1.5 - 2.0 times as wide as long, flat posteriorly, slightly impressed to almost flat anteriorly, without microsculpture, variably set with fine to coarse setiferous punctures in anterior portion or on entire surface, anterior margin convexly projecting, variably excised in the middle, lateral margins parallel-sided or rounded, with sparse or dense fringes of fine long setae, sometimes extending to anterior margin, with or without distinct antero-lateral angles, posterior margin straight. Prementum partly visible in front of mentum, lateral sclerites protruding almost hemispherically, densely fringed with very fine long setae. Submentum smooth or with fine setae. Labial palpi stout or slender, palpomere 2 with one seta or few setae apically. Gula well developed throughout, rather weakly narrowed anteriorly, gular sutures in slightly concave lines. Submento-gular sutures absent.

Thorax: Anterior margin of pronotum weakly bisinuate with anterior corners slightly projecting cranio-ventrad, posterior margin not or very weakly bisinuate. Lateral margins weakly to very distinctly convex, converging anteriorly, thus basal width larger than distance between anterior angles. Lateral pronotal margin unbeaded or with tender bead. Irregular punctation on pronotum obsolete to distinct, fine to coarse, sometimes with few indistinct setiferous punctures on lateral portion. Border between pubescent mesal and glabrous lateral portion of hypomeron ("lateral pronotal ridge") distinct, but only posteriorly represented by a ridge ("transverse fold", see below). Apex of hypomeral process short and pointed. Notosternal suture weakly visible. Prosternum almost flat, or bulging, or slightly tectiform mesally, not distinctly carinate, very slightly projecting anteriorly towards gula, with distinct posterior projection ("prosternal

process"), reaching to middle of procoxae. Procoxal bridge, i.e. a weakly sclerotized lamina closing procoxal cavities internally, distinct but weakly sclerotized, without strengthening ridge, not excised posteriorly. Procoxal fissure rather narrow. Accessory ridge below posterior pronotal margin continued as "transverse fold" laterad. Profurca composed of a short narrow stalk and a variably sized apical extension. Mesoscutum with microsculpture consisting of horizontal meshes, with loosely distributed coarse punctures, each with one short spine. Scutellar shield well exposed, moderately sized, equilateral triangular, with few strong setae on cranial margin. Elytra with sharply impressed sutural stria in posterior half to posterior two thirds. Dorsal face of elytra without metallic lustre, with or without microsculpture, with coarse or fine, sometimes obsolete punctures, each with one minute seta of variable length and strength, often not visible in 100 x amplification. The punctures of irregular or subseriate distribution; almost always with a more or less short series of punctures on lateral sides, often distinctly coarser than punctuation on elytral disc; regularly punctate striae among irregular punctuation absent. Elytral margin not explanate laterally. Pseudepipleuria glabrous, rather narrow throughout, vertical, reaching apex. Epipleura pubescent, vertical, very wide anteriorly, thus thorax and abdomen deeply lowered into elytral cavity. Epipleura strongly narrowed towards metacoxae; often lighter coloured than ventrites. Mesoventrite separated from anterior mesothoracic margin by anepisterna 2, or reaching anterior margin; antero-median portion flat, postero-median portion flat or bulged or with a postero-median horizontal ridge or tooth-like protuberance of variable shape. Anepisterna without cavities for reception of procoxae, with distinctly marked anterior collar, widening laterad. Anapleural sutures generally present, in S-shaped lines, with strongly converging posterior sections and less converging anterior sections, thus separating a wing-like postero-lateral portion from a mesal portion of mesoventrite. Pleural sutures well visible. Mesofurcal arms arising separately from mesal portion of internal coxal wall, origins not connected by a basal ridge, furcal arms short, ending halfway towards pleural ridge, with leaf-like extension basally, plate-like extension apically. Metanotum with reduced mesophragma, anterior and postmedian notal wing processes well developed, posterior notal wing process weak. Transverse suture present, separating katepisternum from metaventrite. Katepisternum often less pubescent than metaventrite. Metacoxal processes exposed. Metaventrite with gently raised, slightly convex middle portion, not significantly projecting anteriorly between mesocoxae, with dense hydrofuge pubescence, reduced or absent on mesal portion. Anepisternum 3 hardly four times as long as wide, subparallel. Ventral portion of metepimeron very small. Metafurcal stalk with laterally directed short basal extensions, furcal arms gradually narrowed without extensions basally, with weak cup-shaped extension apically.

Legs: Procoxae subglobular, mesocoxae almost horizontal, almost contiguous or slightly separated by anterior process of metaventrite. Mesotrochantin concealed. Femora flattened, profemur about 2.5 times as long as wide. Tibial grooves on mesal face present, on pro- and mesofemur weaker, on metafemur more distinct. Trochantera at least partly pubescent. Dense hydrofuge pubescence on ventral face of femora with variable extension, sometimes highly reduced and confined to proximal portion and/or to anterior margin on metafemur; mostly with sharp boundary between glabrous and pubescent portion ("hairline"). Femora not surpassing ventrites, thus femoro-tibial joint not quite reaching elytral margin, concealed under elytral cover at rest. Tibiae flattened dorsoventrally; with nine longitudinal rows of fine or strong spines; rows aggregated on lateral margin and thus often hardly separable; spines usually stronger on lateral, finer on mesal face. Four distal tibial spurs of unequal length: two rather long spurs on mesal margin, and two shorter spurs laterally; ventral spurs always distinctly shorter than dorsal spurs; strong spines on distal margin between lateral and mesal spurs. Protarsomere 5 ventrally with fine setae, protarsomere 2 and 3 with spines or fine setae. Metatarsomere 1 very short, distinctly shorter than comparatively long metatarsomere 2. Metatarsomere 2 slightly longer than metatarsomere 5. Claws of moderate size, evenly curved. Bisetous empodium small.



Five abdominal ventrites, extensively set with hydrofuge pubescence, ventrite 1 slightly shorter than ventrite 2 in longitudinal diameter, not carinate.

Aedeagus of trilobe type, weakly sclerotized, basal apophyses of median lobe usually punctually connected with parameres, often by a distinctly visible, mesally directed, small tooth.

**DISCUSSION:** An unambiguous autapomorphy of *Anacaena*, clearly pointing to a monophyly of this genus, cannot be defined, and not one feature that might distinguish the genus *Anacaena* with certainty from other anacaenine genera could be detected. The combination of the following character states are generally assumed to separate *Anacaena* from other genera of Anacaenini: (1) distance between eyes 4.5 times the width of one eye, (2) eyes not protruding, (3) antennal club ca. 2.5 times as long as wide, (4) maxillary palpi ca. 0.5 times as long as width of head, (5) maxillary palpomere 2 inflated, (6) posterior margin of pronotum not bisinuate, (7) prosternum without longitudinal carina, (8) dorsal face of pronotum and elytra without metallic lustre, (9) elytra with sharply impressed sutural stria, (10) anepisternum 3 ("metepisternum") about 4.0 times as long as wide, (11) ventral face of metafemur with hydrofuge pubescence, (12) metatarsomere 1 distinctly shorter than metatarsomere 2, (13) metatarsomere 2 longer than metatarsomere 5.

It has been already stated by d'ORCHYMONT (1933) that some of these characters (e.g. metafemoral pubescence, relative length of metatarsomeres, or flat prosternum) are certainly distinctive in European species, but often not so in species from other realms. The following measurements used by HANSEN (1991) are not reliable: The relation of distance between eyes to diameter of one eye, which is 4.5 according to HANSEN (1991), shows a wide range and is largely overlapping in the taxa examined; the relation of length to width of antennal club, which is according to HANSEN (1991) 2.5 in contrast to most of the other genera of Anacaenini, is hardly comprehensible due to the asymmetry of the club, and depending on the state of conservation; anepisternum is four times as long as wide according to HANSEN (1991), but I was not able to find significant deviations in other genera.

In addition to the hitherto accepted assemblage of distinguishing features the following characters can serve to separate related genera from *Anacaena*:

**Head:** In all species of *Anacaena* examined, the labrum is set with fine setae, in contrast to rather strong spines in *Paracymus*. The lateral margin of the mandible is without incision (present in *Paracymus* and *Crenitis*), and with distinct sharp angle (rounded in *Crenitis*, *Notionotus*, and *Notohydrus*), its apex is bifid (trifid in many species of *Paracymus*), its meso-proximal setae are fine (strong in *Paracymus*). The clypeus of *Anacaena* is comparatively short in longitudinal diameter with obsolete to weak anterior angles (always long with distinct angles in *Crenitis*, *Notionotus*, *Notohydrus*, and *Paracymus*). The galea is set with six rows of setae, which are absent in *Paracymus* and *Notohydrus*. The mentum has often rounded, densely setiferous lateral margins, a character state which is not met in any other related genus. The hemispherically projecting prementum of *Anacaena* and most other genera is densely fringed with long, fine setae; it is rather weakly ovoid, weakly projecting anteriorly, and set with spines in *Paracymus*.

**Thorax:** The lateral pronotal margins are usually distinctly convex (almost straight to slightly convex in many *Crenitis*). The procoxal bridge is not excised posteriorly and not reinforced (strengthened by a fine, narrow ridge in *Paracymus* and excised posteriorly in species of *Crenitis*, the hypomerall process therefore more prominent in *Crenitis* than in the other genera of Anacaenini). The "transverse fold" is usually distinct (absent in *Crenitis*). The profurca, which is widening apicad in most Anacaenini, is wide throughout and not composed of stalk and apical extension in *Paracymus*. The scutellar shield, equilateral in most genera of Anacaenini, is elongated in *Paracymus*. In contrast to previous descriptions, the elytral punctuation of *Anacaena* is not entirely irregular: in almost all specimens examined (except those with very fine to

obsolete punctures) at least a short lateral series of punctures, often coarser than on the elytral disc, is found, while in *Paracymus* the whole punctation, which is never fine or obsolete, is uniform and totally irregular. In some species of *Anacaena*, almost the entire elytral punctation is arranged in longitudinal subseriate rows. But in contrast to *Crenitis* and some *Paranacaena*, where ten distinct rows of punctures between the irregular punctation are met, this state is not found in *Anacaena*. Slightly explanate posterior portions of elytral margins are found in *Notionotus* only. Very wide, vertically positioned epipleura are found in *Anacaena* (as already noticed by WINTERS 1926), *Paranacaena*, *Notionotus* and *Hebauerina*. In these genera the thoracal structures, including legs, are therefore largely covered by the elytra, while in *Paracymus*, *Crenitis*, and *Notohydrus* the epipleura are oblique to almost horizontal, the thorax much less lowered into the elytral cavity, and the legs to a larger extent protruding. With few exceptions the mesoventrite does not reach the anterior margin of mesothorax in *Anacaena*, *Notionotus*, *Notohydrus*, *Paranacaena*, and *Hebauerina*, while in *Paracymus* and some *Crenitis* the mesoventrite is contributing to the anterior collar of mesothorax. In *Paracymus* and *Crenitis* the mesoventrite does not show lateral "wings" like in *Anacaena*. The mesofurcal arms, which are short in *Anacaena*, are approximately twice as long and reach the pleural ridge in *Paracymus*; their origins are connected by a weakly sclerotized internal ridge only in *Crenitis*.

Legs: Flattened femora and tibiae are found in most Anacaenini except in species of *Crenitis*, where the femora are almost cylindrical, the profemur more than three times as long as wide, and the tibiae not flattened. In *Notohydrus* and *Crenitis* - with some exceptions - the metafemur distinctly surpasses the lateral margin of the metacoxa. The protarsomere 5 usually has fine hairs ventrally in Anacaenini, but is set with stiff, spine-like setae in *Crenitis*.

Abdomen: Only in *Paracymus* the abdominal ventrite 1 is distinctly shorter (in longitudinal diameter) than the following ventrites, and sometimes carinate.

Aedeagus: A laterad directed tooth, connecting the basis of the median lobe of the aedeagus with the parameres is only found in *Anacaena*.

From these observations no conclusions can be drawn regarding the relationships between the genera of Anacaenini. This can only be done by a phylogenetic analysis, including outgroup taxa. But it should be suggested that the establishment of new genera within this group should take a comparison of these characters into consideration.

### Check list of Afrotropical species:

- |   |                          |
|---|--------------------------|
| 1. <i>Anacaena angulata</i> sp.n.             | Madagascar               |
| 2. <i>Anacaena capensis</i> HEBAUER, 1999     | Republic of South Africa |
| 3. <i>Anacaena fallax</i> sp.n.               | Madagascar               |
| 4. <i>Anacaena glabella</i> d'ORCHYMONT, 1942 | Tanzania, Uganda         |
| 5. <i>Anacaena glabriventris</i> sp.n.        | Republic of South Africa |
| 6. <i>Anacaena gracilipalpis</i> sp.n.        | Madagascar               |
| 7. <i>Anacaena lutea</i> sp.n.                | Madagascar               |
| 8. <i>Anacaena luticola</i> HEBAUER, 2002     | Madagascar               |
| 9. <i>Anacaena mascarena</i> HEBAUER, 2002    | Madagascar               |
| 10. <i>Anacaena parvicristata</i> sp.n.       | Madagascar               |
| 11. <i>Anacaena polita</i> sp.n.              | Madagascar               |
| 12. <i>Anacaena reducta</i> sp.n.             | Republic of South Africa |
| 13. <i>Anacaena sucinea</i> sp.n.             | Madagascar               |
| 14. <i>Anacaena tenella</i> HEBAUER, 1999     | Republic of South Africa |

*Anacaena angulata* sp.n.

**TYPE LOCALITY:** Madagascar, Fianarantsoa province, Ranomafana National Park, Vohiparara.

**TYPE MATERIAL:** **Holotype** ♂ (NMW): "Madagascar est, 1100 - 1200 ♂, P. N. Ranomafana \ Vohiparara, 21.-24.1.1993, J. Janák lgt." – **Paratypes:** 89 exs. (NMW): same data as holotype; 135 exs. (NMW, HUB, ISNB, ZMUC): "Madagascar est, 1100 - 1200 m, P. N. Ranomafana \ Vohiparara, 21.-24.1.1993, G. Dunay + J. Janák lgt." 2 exs. (NMW): "Madagascar est, 3.-4.2.1995, Ranomafana NP env. Sahavondrona, 1150 - 1250 m, leg. Dunay & Janák".

**DIAGNOSIS:** Body comparatively small; clypeus and frons dark brown to black, clypeus with lighter brown anterior area; pronotum and elytra dark brown; clypeus large with conspicuously extended, angulate lateral margin; eight antennomeres; maxillary palpi stout, evenly yellow; punctation on head and pronotum fine, on elytra moderately fine and subseriate; mesoventrite flat; metafemoral pubescence highly reduced without distinct hairline.

This species is separated from all other known representatives of *Anacaena* by several characters, such as (1) the angulate clypeus, and (2) the shape of the mentum. The striking synapomorphies with *Anacaena* nevertheless seem to justify the assignment of this species to *Anacaena*.

**DESCRIPTION:** Total length 1.8 - 2.2 mm, total width 1.4 mm, E.I.: 1.15. Habitus (Fig. 6) oval, greatest width approximately in the middle, elytra ca. four times as long as pronotum in dorsal view.

Head (Figs. 14, 28, 43): Labrum lighter coloured than clypeus. Clypeus and frons dark brown to black, preocular region and sometimes a larger frontal area on clypeus lighter brown. Irregular punctures fine, densely distributed, coarser and denser towards anterior clypeal margin. Interstices without microsculpture. Eyes strongly constricted anteriorly, dorsal portion very small. Clypeus short, with conspicuous preocular angulate lateral projections, antero-lateral margins strongly converging without angles between lateral and anterior margin. Frontoclypeal suture hardly visible. Eight antennomeres; pedicellus slender, distinctly longer than intermediate antennal segments together, antennomere 3 distinctly longer than antennomere 4. Maxillary palpi moderately stout, yellowish brown; palpomere 2 inflated, palpomere 4 broadly rounded apically, without terminal infuscation. Temples, mentum, gula and submentum brown, lighter than frons. Mentum ca. 1.5 times as wide as long, posterior portion flat, anterior portion not depressed mesally, with fine, very densely standing setiferous punctures subapically in anterior third; lateral margins sparsely fringed with fine long setae, almost parallel-sided with distinct anterior angles; anterior margin slightly convex, not excised in the middle. Submentum with long fine setae. Labial palpi slender.

Thorax: Pronotum dark brown, slightly lighter than frons, with rather narrow, indistinctly demarcated yellowish margins. Irregular punctation fine, moderately densely distributed, interstices smooth, shining, without microsculpture. Lateral margins tenderly beaded, convex, with rounded posterior angles. Prosternum brown, distinctly lighter than pronotum, slightly bulged mesally. Hypomeron brown. Scutellar shield dark brown, irregular punctation fine. Elytra dark brown, lateral margins and apex variably lighter brown. Elytral punctures with distinct subserial arrangement, irregular solely at elytral base, moderately fine, distinctly coarser than on pronotum, becoming coarser towards lateral margins, with rather dense, equidistant distribution. Interstices without microsculpture. Sharply impressed sutural stria in posterior two thirds of elytra. Mesoventrite flat, anapleural sutures sharply S-shaped, anterior sections almost parallel-sided (Fig. 56). Epipleura, meso- and metaventrite evenly rufous brown.

Legs (Fig. 70): Femora, tibiae and tarsi rufous brown. Hydrofuge pubescence on ventral face of all femora reduced and without distinct hairline: on pro- and mesofemur confined to proximal

third to fourth; on metafemur confined to anterior margin and very proximal portion. Metatibia with few strong spines on lateral margin; the longer mesal spur extending to halflength of tarsomere 2. Metatarsus approximately as long as metatibia.

Abdominal ventrites rufous brown, with dense hydrofuge pubescence, less dense on ventrite 5.

Aedeagus (Fig. 84): Phallobase approximately as long as parameres, manubrium broadly rounded. Parameres slightly narrowed apically, apices truncate, lateral faces almost straight, mesal faces with slight bulge subbasally. Median lobe as long as parameres, apex truncate, corona situated subapically, basal apophyses short, not extended into phallobase.

DISTRIBUTION: Eastern Madagascar.

ETYMOLOGY: The name of the epithet refers to the angulate clypeus.

### *Anacaena capensis* HEBAUER, 1999

*Anacaena capensis* HEBAUER, 1999: 8.

TYPE LOCALITY: Republic of South Africa, Karoo National Park, Mountain View River.

TYPE MATERIAL (sampling labels blue, type labels orange): **Holotype** ♂ (HUB): "R.S.Africa 17.xi.1997, 32°13,6'S / 22°31,6'E Cape Prov.: Karoo NP: Mountain View River, shore: Phragmites grass + litter sievings, 900 m leg. M.Uhlig + J.Ndamane + Ari \ HOLOTYPUS *Anacaena capensis* sp.n. des. F. Hebauer". – **Paratypes**: 2 ♀♀ (HUB), 1 ♂ (CHG): same sampling data as holotype; 1 ♂ (HUB): "R.S.Africa: 16.xi.1997, 32°19,5'S / 22°26,7'E Cape Prov.: Karoo NP: permanent spring at Klipspringer pass, grass + litter sievings + rivulet bank washing, lg. Uhlig + Ndamane"; 1 ♀ (HUB): "R.S.Africa: 16.xi.1997, 32°19,2'S / 22°30,0'E Cape Prov.: Karoo NP, permanent spring: bottom of Pienaars pass: shore sievings: grass + leaf litter, lg. Uhlig + Ndamane \ PARATYPUS *Anacaena capensis* sp.n. des. F. Hebauer"; 3 ♀♀ (HUB, NMW): "R.S.Africa: 17.xi.1997 32°15,3'S / 22°29,9'E Cape Prov.: Karoo NP, swamp at Puttersvlei, swamp vegetation treating, water catcher, lg. M. Uhlig + J. Ndamane \ PARATYPUS *Anacaena capensis* sp.n. des. F. Hebauer"; 1 ♀ (HUB), 1 ex. (CHG): "R.S.Africa: 13.xi.1997 33°58'S / 20°26'E Cape Prov.: Marloth NR Duiwelsbos, mountain rivulet, leaf litter + moss sievings, leg. M. Uhlig \ PARATYPUS *Anacaena capensis* sp.n. des. F. Hebauer". – Only material from HUB examined.

DIAGNOSIS: Body comparatively large; dorsal face entirely black; clypeus well developed with distinct anterior angles; eight antennomeres; maxillary palpomeres 1 - 3 brown, palpomere 4 entirely black; head, pronotum and elytra with dense, coarse, shallow punctures; mesoventrite flat; metafemoral pubescence reduced.

DESCRIPTION: Total length 2.7 - 3.0 mm, total width 1.6 - 1.7 mm, E.L.: 1.16. Habitus oval, greatest width approximately in the middle, elytra more than three times as long as pronotum in dorsal view.

Head (Figs. 15, 29, 44): Labrum black, clypeus and frons shining black, without preocular spots. Irregular punctures on clypeus and frons coarse, shallow, densely distributed, diameter of punctures on average as wide as interstices, becoming deeper and with denser distribution towards lateral and frontal margin. Interstices without microsculpture. Additional fine and very close standing punctures on frons along margin of eye. Clypeus large, lateral margins almost straight, distinctly longer than longitudinal diameter of eye, moderately converging, with distinct anterior angles, anterior margin very slightly concave. Frontoclypeal suture weak, only partially visible. Eight antennomeres; pedicellus as long as intermediate segments and cupula together, antennomere 3 distinctly longer than antennomere 4. Maxillary palpi rather slender; palpomere 2 slightly inflated, palpomere 4 weakly asymmetrical with shorter inner margin, rounded apically, palpomere 1 - 3 dark brown, seldom lighter, palpomere 4 entirely black. Mentum ca. two times as wide as long, black, shining, rather flat, with fine, sparse, equally distributed, setiferous punctures, interstices without microsculpture, slightly impressed in anterior third; lateral margins fringed with long setae; lateral and anterior margins commonly rounded without visible angles,

anterior margin slightly excised mesally. Submentum with scattered fine setae. Labial palpi slender.

Thorax: Pronotum largely black with a broad yellowish lateral margin, not sharply demarcated from black pronotal disc, continued into a narrow yellow strip of varying length along posterior border. Irregular punctures coarse, shallow, densely distributed like on frons, slightly denser towards lateral margins; some punctures on lateral portion setiferous. Interstices without microsculpture. Lateral margins with tender bead, embracing anterior corners, moderately convex with rounded, weakly defined posterior angles. Prosternum black, flat. Hypomeron dark brown. Scutellar shield black, shining, with irregular shallow punctation as on pronotum. Elytra black, in some individuals weakly lightened up laterally and posteriorly. Punctures as on pronotum, irregular, coarse, shallow, with dense and equidistant distribution, not significantly coarser laterally, partially with subserial arrangement posterolaterally. Interstices without microsculpture. Sutureal stria in posterior two thirds of elytra. Mesoventrite flat; anapleural sutures smoothly S-shaped, anterior sections distinctly converging (Fig. 57). Epipleura brown. Meso- and metaventricle black.

Legs (Fig. 71): Femora, tibiae and tarsi dark brown, proximal portion of femora black in some individuals. Hydrofuge pubescence on ventral face of femora with distinct hairline: on profemur confined to proximal half, with rounded hairline; on mesofemur confined to proximal half, with straight hairline, running from middle of anterior to middle of posterior margin; on metafemur confined to extreme proximal portion, continued into a very short seam on less than proximal third of anterior margin. Metatibia with strong spines on lateral face. Distal spurs slender, the longer mesal spur reaching to halflength of tarsomere 2. Metatarsus almost as long as tibia.

Abdominal ventrites dark brown, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 85): Phallobase longer than parameres, manubrium wide. Parameres slightly widened proximad and distad, broadly rounded apically. Median lobe slightly longer than parameres, lateral edges of apex pointed, corona situated apically, basal apophyses extended into phallobase.

DISTRIBUTION: Republic of South Africa.

### *Anacaena fallax* sp.n.

TYPE LOCALITY: Madagascar, Île Ste. Marie, Forêt de Kalalao.

TYPE MATERIAL: **Holotype** ♂ (NMW): "MADAGASKAR: Ile Ste. Marie, Forêt de Kalalao, 23.-26.10.1992 lg. Madl". – **Paratype** ♂ (NMW): "MADAGASKAR: Périnet, 30.7.1958 Urwaldbach [stream in primary forest] (120), leg. Starmühlner".

DIAGNOSIS: Body comparatively large; head, pronotum and elytra brown; clypeus with large yellow preocular patches; pronotum with a large darker brown, not sharply demarcated patch; elytra with lighter brown areas; clypeus large, with well developed anterior angles; nine antennomeres; maxillary palpi yellow without apical infuscation; punctation on head, pronotum and elytra coarse and flat; mesoventrite with conspicuous protuberance; metafemur with extended pubescence and oblique hairline.

This species resembles *A. mascarena*, with similar aedeagus, but different dorsal punctation and metafemoral pubescence.

DESCRIPTION: Total length 2.8 - 3.0 mm, total width 1.6 - 1.8 mm E.L.: 1.12. Habitus broadly oval, greatest width approximately in the middle, elytra less than four times as long as pronotum in dorsal view.

Head (Figs. 16, 30, 45): Labrum rufous brown in frontal portion, weakly excised in the middle. Clypeus slightly lighter brown than frons, with two large yellow preocular patches, very indistinctly demarcated from dark brown middle portion. Frons dark brown. Irregular punctures on clypeus and frons coarse, densely distributed, diameters of punctures almost as wide as interstices, rather deep, with unequal diameters and interstices, distinctly finer and with denser distribution towards anterior clypeal margin. Interstices without significant microsculpture. Clypeus large, lateral margin almost straight, distinctly longer than longitudinal diameter of eye, moderately converging, with distinct anterior angles, anterior margin almost straight. Frontoclypeal suture weakly visible. Nine antennomeres; pedicellus approximately as long as intermediate segments together, antennomere 3 somewhat elongated. Maxillary palpi rather stout, yellowish brown; palpomere 2 inflated, palpomere 4 almost symmetrical, rounded to truncate apically, without terminal infuscation. Temples, mentum, gula and submentum dark brown to black. Mentum less than two times as wide as long; posterior portion flat, anterior portion slightly depressed; with very coarse and rather dense setiferous punctures, much denser and partially confluent in anterior half; lateral margins convex with a dense fringe of long setae, without visible anterior angles; anterior margin convex, with a deep mesal excision. Submentum with long fine setae. Labial palpi stout.

Thorax: Pronotum brown, with a large darker brown patch centrally on pronotal disc, not distinctly demarcated from paler margins. Irregular punctation coarse, densely distributed, diameters of punctures smaller than interstices, becoming hardly denser towards lateral margins. Interstices smooth. Lateral pronotal margins tenderly beaded, strongly convex without discernible posterior angles. Prosternum dark brown, slightly tectiform mesally. Scutellar shield brown with darker margins, with fine irregular punctation. Elytra brown, with variable lighter brown patches and stripes, considerably lightened up towards lateral margins. Median suture and sutural stria dark brown. Elytral punctures irregular, coarser than on head and pronotum, evenly and densely distributed, diameters of punctures on average as large as interstices, becoming denser and partially arranged in short series towards lateral margins. Interstices without microsculpture. Sutural stria in posterior two thirds of elytra. Mesoventrite with a conspicuous protuberance, forming a short carina terminating posteriorly in an acutely pointed transverse ridge. Anapleural sutures sharply S-shaped, anterior sections almost parallel-sided (Fig. 58). Meso- and metaventrite dark brown.

Legs (Fig. 72): Femora, tibiae and tarsi rufous brown. Hydrofuge pubescence on ventral face of femora with sharp hairline: pro- and mesofemur almost entirely pubescent, except extreme distal portion, with rounded hairline, metafemur largely pubescent with oblique hairline. Metatibia slender, with weak spines, longer mesal spur reaching to half length of tarsomere 2. Metatarsus slightly shorter than tibia.

Abdominal ventrites dark brown, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 86): Phallobase longer than parameres, broad, distinctly narrowed towards manubrium. Parameres widened proximally with a humpy dilatation on inner margin in proximal third, with widened apical portion; lateral faces rounded, mesal faces extended into a mesally directed bill-shaped process subapically, processes of both parameres embracing the median lobe. Median lobe comparatively short, much shorter than parameres, apex broadly rounded, basal apophyses comparatively long, extended into phallobase.

DISTRIBUTION: Eastern Madagascar.

ETYMOLOGY: The name of the epithet ("fallax" = deceptive) refers to the similarity of the aedeagus with that of *A. mascarena*.

*Anacaena glabella* d'ORCHYMONT, 1942

*Anacaena glabella* d'ORCHYMONT, 1942: 52; HEBAUER 1999: 9.

TYPE LOCALITY: Tanzania, Mwanza province, Ukerewe Island.

TYPE MATERIAL EXAMINED: **Holotype** ♂ (ISNB): "Victoria Nyanza I. Ukerewe R P. Conrads IV [mounted on a light blue label: "Coll. R. I. Sc. N. B., Tanzanie"] \ ♂ \ d'Orchymont det. *Anacaena glabella* m. \ TYPE". – **Paratypes** (paratype labels orange, white sampling labels mounted on light blue collection labels: "Coll. R. I. Sc. N. B."): 1 ♂ (ISNB): "Uganda Kampala 26.VII.1929 G.H.E. Hopkins \ ♂ \ Paratype"; 3 ♂♂, 5 exs. (ISNB, NMW): "Uganda Kampala 23.VIII.1929 G.H.E. Hopkins \ Paratype"; 2 exs. (ISNB): "Uganda Kampala 4.IX.1929 G.H.E. Hopkins \ Paratype"; 3 exs. (ISNB): "Uganda Kampala 20.IX.1929 G.H.E. Hopkins \ Paratype"; 2 exs. (ISNB): "Uganda Kampala 7.X.1929 G.H.E. Hopkins \ Paratype"; 1 ex. (ISNB): "Uganda Kampala 14.XI.1929 G.H.E. Hopkins \ Paratype"; 1 ex. (ISNB): "Uganda Kampala 27.XI.1929 G.H.E. Hopkins \ Paratype"; 1 ex. (ISNB): "Uganda Kampala 28.XI.1929 G.H.E. Hopkins \ d'Orchymont det. *Anacaena glabella* m. \ Paratype".

**DIAGNOSIS:** Body comparatively small; head black with narrow red preocular patches in front of eyes and along clypeal margin; pronotum and elytra dark chestnut brown; clypeus short, rounded without discernible anterior angles; nine antennomeres; maxillary palpi rufous, palpomere 4 weakly infuscated apically; head, pronotum, and elytra with fine irregular punctures; mesoventrite with conspicuous median protuberance; metafemoral pubescence with S-shaped hairline.

**DESCRIPTION:** Total length 2.0 - 2.2 mm, total width 1.3 mm, E.I.: 1.26. Habitus (Fig. 7) oval, highly convex, greatest width slightly in front of the middle, elytra weakly attenuated behind, less than four times as long as pronotum in dorsal view.

Head (Figs. 17, 31, 46): Labrum black with fine punctures on posterior portion, rufous brown on frontal margin. Clypeus and frons shining black, clypeus with two small and short rufous brown linear patches: one in front of each eye, accompanying its anterior margin, the other along lateral margin of clypeus, extending from eye to lateral edge of labrum. Irregular punctation on clypeus and frons fine, deep, densely and equidistantly distributed, diameter of punctures smaller than interstices, becoming hardly denser towards clypeal margins. Interstices without microsculpture. Very fine and close-standing punctures along anterior margin of eye, few setiferous punctures mesally to eyes. Clypeus short, lateral margin convex, shorter than longitudinal diameter of eye, strongly converging, without discernible antero-lateral angles, fusing with anterior margin. Frontoclypeal suture hardly visible. Nine antennomeres; pedicellus short and stout, as long as intermediate segments together, antennomeres 3 - 5 short, particularly antennomere 4. Maxillary palpi very slender, yellowish to rufous brown; palpomere 2 weakly inflated, palpomere 4 asymmetrical with shorter inner margin, palpomere 4 weakly attenuated apically, with indistinctly demarcated infuscation in distal third to half. Mentum less than two times as wide as long, black, shining, rather flat posteriorly, hardly depressed anteriorly; with fine setiferous punctures, particularly in anterior third; interstices smooth without microsculpture. Lateral margins of mentum densely fringed with fine setae, slightly convex with weakly discernible anterior angles; anterior margin convex with small excision. Submentum with scattered fine setae. Labial palpi slender.

Thorax: Pronotum largely dark chestnut brown, a broad lateral margin and a narrow strip of varying length along anterior and posterior border yellowish brightened up, well demarcated from dark pronotal disc. Irregular punctures very fine and shallow, equally distributed with large distances, few setiferous punctures on lateral portion. Interstices shining, without microsculpture. Lateral margins and anterior corners tenderly beaded. Lateral pronotal border broadly rounded without discernible posterior angles, anterior angles strongly rounded. Prosternum dark brown, slightly tectiform. Scutellar shield chestnut brown, shining, with irregular fine punctation like on pronotum. Elytra dark chestnut brown, with indistinct narrow rufous lateral margins, extending posteriorly towards elytral apex. Elytral punctures fine, slightly coarser than on head, not coarser

towards lateral portion, with dense and equidistant distribution, irregular with very weak serial arrangement postero-laterally. Interstices without microsculpture. Sutural stria in posterior two thirds of elytra. Mesoventrite with a conspicuous median protuberance, forming a very short carina terminating caudally in an acutely pointed transverse ridge. Anapleural sutures sharply S-shaped, with slightly converging anterior sections (Fig. 59). Epipleura rufous brown, meso- and metaventrite rufous brown to almost black.

Legs (Fig. 73): Femora coloured like ventrites, tibiae and tarsi mostly lighter than femora. Ventral face of pro- and mesofemora largely pubescent with sharp hairline: profemur pubescent on proximal two thirds, with oblique hairline, mesofemur almost entirely pubescent except on extreme distal portion, with rounded hairline, metafemur with pubescence confined to anterior half and proximal area, with S-shaped hairline. Metatibia slender, with strong spines; longer mesal spur reaching to halflength of metatarsomere 2. Metatarsus almost as long as metatibia.

Abdominal ventrites rufous brown to almost black, entirely covered with dense hydrofuge pubescence.

Aedaeus (Fig. 87): Phallobase longer than parameres, abruptly narrowed and continued into a very weakly sclerotized manubrium. Parameres slightly widened proximad, apex rounded on mesal face, with a bill-shaped extension on lateral face. Median lobe shorter than parameres, straightly converging to the pointed apex. Basal apophyses short, extending distinctly into phallobase.

DISTRIBUTION: Eastern Africa, Tanzania and Uganda, Lake Victoria.

*Anacaena glabriventris* sp.n.

TYPE LOCALITY: Republic of South Africa, Western Cape province, Table Mountain, Skeleton Gorge.

TYPE MATERIAL: **Holotype** ♂ (NMW): "RSA, West Cape: Table Mtn (= 33,58S / 18,28E) bei Kirstenbosch, Skeleton Gorge, 300 bis 700 m NN. 4.3.1997 Hess & Heckes leg". – **Paratypes**: 23 exs. (NMW, ZMUC, ISNB): same data as holotype; 1 ex. (NMW): "RSA, West Cape: Table Mtn (= 33,58S / 18,28E) bei Kirstenbosch, Nursery Ravine, 300 bis 700 m NN. 4.3.1997 Hess & Heckes leg"; 9 exs. (NMW): "RSA, West Cape, Hex River Mts.: 7 km SW Ceres (33,23S / 19,19E), 400 m NN, 25.2.1997, Hess leg. \ Breede-river (Breë River) am Michell's Paß: Rockpools, Stillwasserzone, überrieseltes Moos [= hygropetric in moss]"; 10 exs. (NMW): "Western Cape, Hex River Mts., 8 km SW Ceres (= 33,23S / 19,19E), 450 m NN. 27.2.1997, Hess & Heckes leg. \ Hang oberhalb Michell's Paß-Straße: überrieseltes Moos an Felswand kleiner Bach in steiler Rinne [= slope above Michell's pass-road: hygropetric in moss, small stream within steep channel]"; 4 exs. (NMW): "RSA, Kwa Zulu/Natal, Drakensberge: 40 km W Mooi River (= 29,13S / 30,00E), 1.700 NN. 22.2.1997 Hess leg \ Two Dassie Stream, 5 km S Nationalpark Camp"; 1 ♀ (NMW): "RSA: Eastern Cape, 6.3.1997 Tsitsikamma Mts. 40 km E Plettenberg Bay 34°05'S / 23°21'E, leg. Hess & Heckes (19)"; 8 exs. (NMW): "RSA: Eastern Cape, 7.3.1997 Tsitsikamma Mts. 40 km E Plettenberg Bay, 34°05'S / 23°21'E leg. Hess & Heckes (20)"; 10 exs. (NMW): "RSA: Eastern Cape, 9.3.1997 Amatola Mts. 20 km NNE Alice, 32°47'S / 26°50'E, leg. Hess & Heckes (25)"; 17 exs. (NMW): "RSA: Eastern Cape, 12.3.1997, 20 km W Port Shepstone, Oribi Gorge nr. Paddock, 30°45'S / 30°15' E, leg. Hess & Heckes (30)"; 2 teneral ♀♀ (NMW): "RSA: Eastern Cape Province, Nature's Valley Salt River 9.6.2001, 23°30'E 33°57'S, 76 m leg. Lee & Philips"; 3 exs. (HUB): "Hist.-Coll. (Coleoptera) Nr. 10559 Hydrobius spec. Cap, Bergius Zool. Mus. Berlin [red label] \ Anacaena det. DPWooldridge [white label; only one specimen]; 7 ♀♀ (NMW): "RSA West Cape, Bainskloof Pass, 33°38'S / 19°10'E leg. V. Grebnikov 24.12.-8.1.2002"; 1 ex. (NMW): "Drakensberge, Transvaal, Umg. Sabie, lg. H. Franz".

DIAGNOSIS: Body comparatively large; head black, pronotum and elytra chestnut brown; clypeus well developed, with indistinct anterior angles; eight antennomeres; maxillary palpi rufous, palpomere 4 entirely darkened; head, pronotum and elytra with dense, coarse, and rather deep punctures; mesoventrite flat; metafemoral pubescence reduced; abdominal ventrites 4 and 5 glabrous.



This species resembles *A. capensis*, but distinctly differing in colour, punctuation, abdominal pubescence, and aedeagus.

**DESCRIPTION:** Total length 2.6 mm, total width 1.6 mm, E.I.: 1.18. Habitus (Fig. 8) oval, parallel-sided in the middle, elytra more than three times as long as pronotum in dorsal view.

Head (Figs. 18, 32, 47): Labrum black. Clypeus and frons entirely shining black, irregular punctures moderately coarse, densely distributed, diameter of punctures on average slightly smaller than interstices, moderately deep, almost equidistantly distributed, becoming denser towards anterior margin of clypeus and on preocular region. Fine and close-standing punctures along margin of eye. Interstices without microsculpture. Clypeus large, lateral margin slightly convex, distinctly longer than longitudinal diameter of eye, with rounded anterior angles; anterior margin almost straight. Frontoclypeal suture weakly visible. Eight antennomeres; pedicellus as long as intermediate segments and cupula together, antennomere 3 approximately twice as long as antennomere 4. Maxillary palpi stout, palpomere 2 markedly inflated, palpomere 4 almost symmetrical, broadly rounded apically; palpomere 1 - 3 rufous brown, whole palpomere 4 strongly infuscated to black. Mentum ca. 1.5 times as wide as long, black, shining, rather flat posteriorly, slightly impressed in anterior third; with fine, equally distributed setiferous punctures; interstices smooth without microsculpture; lateral margins densely fringed with fine setae, almost straight with weakly defined anterior angles; anterior margin convex, weakly excised mesally. Submentum pubescent. Labial palpi stout.

Thorax: Pronotum blackish brown with broad yellowish lateral margins, continued into a narrow rim along anterior and posterior margin, not sharply demarcated from dark pronotal disc. Irregular punctures moderately coarse, slightly finer than on head, densely and equally distributed, with few setiferous punctures on lateral portion. Lateral pronotal margins and anterior corners tenderly beaded, moderately convex, with rounded, hardly defined posterior angles. Prosternum flat, dark brown, hypomeron lighter. Scutellar shield black, with fine irregular punctures. Elytra blackish brown, lateral margins and apical third of elytra variably brownish lightened up without sharp demarcation, black spots shining through from ventral face of elytra. Some individuals very dark without brighter margins. Elytral punctures moderately coarse, deep, with dense and equidistant distribution, becoming coarser towards lateral margins, irregular with subserial arrangement towards lateral margins and apex. Interstices without microsculpture. Sutural stria in posterior two thirds of elytra. Mesoventrite flat, anapleural sutures sharply S-shaped, anterior sections weakly converging (Fig. 60). Epipleura brown. Meso- and metaventrite black.

Legs (Fig. 74): Proximal portion of femora black, distal portion, tibiae, and tarsi rufous brown. Pubescence on ventral face of femora reduced, with sharp hairline: pro- and mesofemur pubescent in proximal half, profemur with rounded hairline, mesofemur with oblique hairline; on metafemur pubescence confined to the extreme proximal portion, continued into a narrow short seam along anterior margin, hardly reaching midlength of femur. Metatibia slender, with rather strong spines; longer mesal spur reaching to halflength of tarsomere 2. Metatarsus slightly shorter than tibia.

Abdominal ventrites black, ventrite 1 and 2 with dense hydrofuge pubescence, ventrite 3 partially, ventrites 4 and 5 entirely glabrous with few short setae, particularly along posterior border.

Aedeagus (Fig. 88): Phallobase slightly longer than parameres, gradually narrowed towards short manubrium. Mesal face of parameres widened proximally, gradually narrowed towards apex, evenly rounded apically. Median lobe shorter than parameres, apex rounded, corona situated subapically. Basal apophyses short, extending into phallobase.

**DISTRIBUTION:** Republic of South Africa.

ETYMOLOGY: The name of the epithet refers to the glabrous abdominal ventrites 4 and 5.

*Anacaena gracilipalpis* sp.n.

TYPE LOCALITY: Madagascar, Fianarantsoa province, 1 km N Col des Tapia.

TYPE MATERIAL **Holotype** ♂ (NMW): "MADAGASCAR: Fianarantsoa: 1 km N Col des Tapia 1000 m 29.10. 2001, lg. Schuh (12)".

**DIAGNOSIS:** Body comparatively small; head black, clypeus with large yellow preocular patches, pronotum light brown with a small dark brown small central patch; elytra brown with infuscated areas; clypeus large with well developed anterior angles; nine antennomeres; maxillary palpi yellow, palpomere 4 infuscated apically; clypeus and frons with fine and coarse punctures mixed; punctuation on pronotum very fine, on elytra fine; mesoventrite with conspicuous protuberance; metafemur largely pubescent with rounded hairline.

**DESCRIPTION:** Total length 2.2 mm, total width 1.3 mm, E.L.: 1.14. Habitus oval, greatest width in the middle, elytra less than three times as long as pronotum in dorsal view.

Head (Figs. 19, 33): Frontal portion of labrum rufous brown. Clypeus and frons black, clypeus with two large triangular rufous brown preocular patches, indistinctly demarcated from mesal portion. Irregular punctuation fine, mixed with coarser setiferous punctures, equidistantly distributed with large interstices, becoming somewhat denser towards anterior clypeal margin. Interstices without microsculpture. Clypeus rather large, lateral margin slightly longer than longitudinal diameter of eye, moderately converging to the discernible rounded angles, anterior margin very shallowly concave. Frontoclypeal suture visible as a very weak, not impressed dark line anterior to eyes. Nine antennomeres; pedicellus short, as long as the very short intermediate segments together. Maxillary palpi very slender, yellow; palpomere 2 very weakly inflated, palpomere 4 asymmetrical with shorter inner margin, attenuated apically, with terminal infuscation. Temples, mentum, submentum, and gula black. Mentum ca. 1.5 times as wide as long, flat, with coarse, densely distributed setiferous punctures, becoming denser anteriorly, interstices without microsculpture; lateral and anterior margins rounded, anterior margin distinctly excised. Submentum with long fine setae. Labial palpi slender.

Thorax: Pronotum largely yellowish to rufous brown, shining, with a small dark brown elliptical patch on center of pronotal disc, divided into three sections by indentations, close to posterior margin, distant from anterior margin. Lateral border of pronotum broadly yellowish. Irregular punctuation very fine, almost obsolete, distantly distributed, with few setiferous punctures on lateral portions. Interstices smooth without microsculpture. Lateral margins without distinct bead, broadly convex with scarcely discernible rounded anterior and posterior angles. Prosternum rufous brown with black margins, slightly tectiform. Hypomeron distinctly lighter rufous brown. Scutellar shield rufous brown with dark margins, with very fine irregular punctuation like on pronotum. Elytra rufous brown, with longitudinal dark brown stripes. Median suture and sutural stria dark brown. Elytral punctures fine, distinctly coarser than on pronotum, becoming coarser on lateral margins, with scattered, equidistant, and irregular distribution, with short series of punctures postero-laterally. Interstices without microstructure. Sutural stria in posterior three fourths of elytra. Mesoventrite with a conspicuous protuberance, forming a short median carina, terminating in an acutely pointed transverse ridge. Anapleural sutures sharply S-shaped, anterior sections weakly converging (Fig. 61). Epipleura rufous brown. Meso- and metaventrite dark brown.

Legs (Fig. 75): Femora dark brown, tibiae and tarsi rufous brown. Hydrofuge pubescence on ventral face of femora with sharp hairline: profemur pubescent on proximal two thirds with oblique hairline; mesofemur largely covered with pubescence except on extreme distal portion,

with rounded hairline; metafemur pubescent on proximal four fifths with convexly rounded hairline. Metatibia slender, with weak spines, longer mesal spur reaching to half length of tarsomere 2. Metatarsus longer than tibia.

Abdominal ventrites dark brown, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 89): Phallobase shorter than parameres, manubrium very narrow, spine-like. Inner faces of parameres widened proximally and distally, rounded apically. Median lobe slightly shorter than parameres, apex pointed, corona situated subapically, basal apophyses distinctly extended into phallobase.

DISTRIBUTION: Eastern Madagascar.

ETYMOLOGY: The name of the epithet refers to the slender maxillary palpi.

### *Anacaena lutea* sp.n.

TYPE LOCALITY: Madagascar, Toamasina province, Andasibe National Park.

TYPE MATERIAL: **Holotype** ♂ (NMW): "Madagascar est, 930-1000 m, Andasibe (Périnet), 6.-7.2.1993, J. Janák lgt." - **Paratypes**: 2 ♂♂, 2 ♀♀ (NMW): same data as holotype; 1 ♂ (NMW): "Madagascar est, 1000 - 1200 m, Maromiza pr. \ Andasibe (Périnet), 9.2.1993, J. Janák lgt."; 1 ♂ (NMW): "Madagascar est, 1100 - 1200 m, P.N. Ranomafana \ Vohiparara, 21.-24.1.1993, G. Dunay + J. Janák lgt.".

DIAGNOSIS: Body comparatively very small, evenly light brown; clypeus short without discernible anterior angles; eight antennomeres; maxillary palpi evenly yellow; punctation on head and elytra very fine, on pronotum obsolete, subseriate in posterior half of elytra; mesoventrite with low transverse ridge; metafemoral pubescence extended with oblique hairline.

DESCRIPTION: Total length 1.6 - 1.8 mm, total width 1.0 mm, E.I.: 1.2. Habitus oval, greatest width approximately in the middle, elytra more than three times as long as pronotum in dorsal view.

Head (Figs. 20, 34, 48): Labrum, clypeus and frons evenly light brown, shining, irregular punctation very fine, sparsely distributed, interstices without microsculpture. Clypeus short, lateral margin as long as longitudinal diameter of eye, strongly converging, anterior corners indistinct, anterior margin straight. Frontoclypeal suture fine. Eight antennomeres; pedicellus longer than intermediate segments together, antennomere 3 distinctly longer than minute antennomere 4. Maxillary palpi stout, evenly yellowish brown; palpomere 2 distinctly inflated, palpomere 4 very large, thick, asymmetrical with shorter inner margin, rounded apically, without terminal infuscation. Temples, mentum, gula and submentum yellowish brown. Mentum two times as wide as long; posterior portion flat, anterior portion very slightly depressed; with fine, very densely distributed setiferous punctures in anterior half; lateral margins fringed with fine long setae, almost parallel-sided, with distinct anterior angles; anterior margin converging antero-mesad, weakly excised in the middle. Submentum with fine setae. Labial palpi slender.

Thorax: Pronotum evenly light brown, smooth, shining, with few minute punctures, lateral margins very tenderly beaded, strongly convex, with rounded posterior angles. Prosternum yellowish brown, slightly bulged. Scutellar shield light brown with darker brown margins, shining, almost impunctate. Elytra evenly light brown. Elytral punctures very fine, equidistant, irregular in anterior third, becoming distinctly subseriate towards lateral margins and apex. Interstices without microsculpture. Sutural stria in posterior two thirds of elytra. Mesoventrite with a low transverse ridge. Anapleural sutures sharply S-shaped, anterior sections distinctly converging (Fig. 62). Epipleura, meso- and metaventrite light brown.

Legs (Fig. 76): Femora, tibiae and tarsi light brown. Ventral face of femora pubescent in proximal three fourths, with distinct, sharp hairline, on profemur and mesofemur rounded, on metafemur oblique. Metatibia slender with weak spines, longer mesal spur exceeding halflength of tarsomere 2. Metatarsus approximately as long as metatibia.

Abdominal ventrites light brown, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 90): Phallobase distinctly longer than parameres, manubrium extended into a long, narrow, pointed spit. Parameres very wide basally, distinctly narrowed apicad. Apex rounded, with numerous small bulges, due to very weak sclerotization. Median lobe shorter than parameres, apically narrowed, corona situated apically, basal apophyses long, distinctly extended into phallobase.

DISTRIBUTION: Eastern Madagascar.

ETYMOLOGY: The name of the epithet refers to the evenly yellow maxillary palpi.

### *Anacaena luticola* HEBAUER

*Anacaena luticola* HEBAUER 2002: 6.

TYPE LOCALITY: Madagascar, Antseranana province, Sambirana river, Marorato village.

TYPE MATERIAL: **Holotype** ♂ (CHG): "N. Madagascar Antseranana distr. Sambirana riv Marorato vill. 5.-12.12.01, D.Hauck lg. \ coll. H.Hebauer [yellow label] \ HOLOTYPE *Anacaena luticola* sp.n. des. F. Hebauer [orange label]".

ADDITIONAL MATERIAL EXAMINED: 2 exs. (NMW): "Madagascar (137) 5.11.2001 Marofototra (Antalaha, Antsiranana), rheocene exp. S., N Antanambazaha, 100 m asl., Gerecke & Goldschmidt coll."; 6 exs. (NMW): "Madagascar (154) 17.11.2001 Joffreville (M. d'Ambre, Antsiranana), R. de Manques in Reserve Fontenay, 550 m asl., Gerecke & Goldschmidt coll."; 2 exs. (NMW): "Madagascar (162) 20.11.2001 Joffreville (M. d'Ambre, Antsiranana), R. de Manques in reserve Fontenay, 730 m asl., Gerecke & Goldschmidt coll."; 1 ex. (NMW): "Madagascar (165) 21.11.2001 Joffreville (M. d'Ambre, Antsiranana), River Antomboka, downstr. large cascade, 850 m asl., Gerecke & Goldschmidt coll."; 1 ex. (NMW): "Madagascar (132) 2.11.2001 Marofototra (Antalaha, Antsiranana), spring stream 1, right affl. of River Fandramanana, 180 m asl., Gerecke & Goldschmidt coll."; 2 ♀♀ (NMW): "Madagascar: Nossi Be, 19.8.1968 leg. Pomeisl".

DIAGNOSIS: Body comparatively large; head dark brown with large yellow preocular patches; pronotum yellowish brown with small dark brown elliptic pronotal patch, divided into three sections by indentations; elytra yellowish brown with paler areas; clypeus short with hardly discernible anterior angles; nine antennomeres; maxillary palpi yellow, palpomere 4 apically weakly infuscated; head, pronotum and elytra with very fine punctation; mesoventrite with conspicuous protuberance; pubescence on hind femora extended with oblique hairline.

General appearance of *A. luticola* similar to *A. mista* d'ORCHYMONT, but punctation significantly finer, mentum much more excised anteriorly (rather slightly in *A. mista*), pubescence on hind femora more extended. Resembling *A. lutescens* (STEPHENS, 1829) in regard to mesoventrite and metafemoral pubescence (HEBAUER 2002).

DESCRIPTION: Total length: 2.3 (♂) - 2.7 (♀) mm, total width 1.4 (♂) - 1.7 (♀) mm, E.I.: 1.11. Habitus broadly oval, greatest width in the middle, elytra more than three times as long as pronotum in dorsal view.

Head (Figs. 21, 35, 49): Frontal portion of labrum rufous brown. Clypeus and frons dark brown to black, clypeus with two large triangular yellow preocular patches. Irregular punctures very fine, sparsely mixed with few coarser setiferous punctures, equidistantly distributed with large interstices, becoming denser towards anterior clypeal margin. Interstices without microsculpture. Clypeus rather short, lateral margin convex, approximately as long as longitudinal diameter of eye, strongly converging, with inconspicuous roundend anterior corners, anterior margin straight.

Frontoclypeal sutures weakly visible as not impressed dark lines anterior to eyes. Nine antennomeres; pedicellus short and stout, shorter than intermediate segments together, antennomeres 3 and 4 very short. Maxillary palpi slender, yellowish brown; palpomere 2 weakly inflated, palpomere 4 slightly asymmetrical with shorter inner margin, rounded apically, without or with indistinct terminal infuscation. Temples and gula black, submentum partially rufous brown. Mentum two times as wide as long, rufous brown, flat, with sparsely distributed, fine setiferous punctures, becoming coarser and denser in anterior third, interstices without microsculpture; lateral margins with a fringe of light setae, strongly convex, with distinct anterior angles; anterior margin convex, significantly excised. Submentum with fine setae. Labial palpi slender.

Thorax: Pronotum largely light yellowish brown; with a small dark brown elliptic patch on center of pronotal disc, divided into three sections by indentations, close to posterior margin, detached from anterior margin. Irregular punctation extremely fine to obsolete, without additional setiferous punctures. Interstices without microsculpture. Lateral margins tenderly beaded, weakly convex, with discernible rounded anterior and posterior angles. Prosternum rufous brown, slightly tectiform. Scutellar shield rufous brown with darker margins, with extremely fine irregular punctation. Elytra yellowish brown, becoming paler at base, apex, and sutural interval; median suture and sutural stria dark brown. Elytral punctures extremely fine, hardly coarser than on pronotum, with some slightly coarser punctures near lateral margins, irregularly and equidistantly distributed with large distances. Interstices without microsculpture. Sutural stria in posterior three fourths of elytra. Mesoventrite with a distinct central protuberance, forming an acutely pointed transverse carina. Anapleural sutures sharply S-shaped, with almost parallel-sided anterior sections (Fig. 63). Meso- and metaventrite rufous brown.

Legs (Fig. 77): Femora, tibiae and tarsi rufous brown. Hydrofuge pubescence on ventral face of femora with sharp hairline: profemur pubescent in proximal three fourths with rounded hairline, mesofemur pubescent except on extreme distal portion with rounded hairline, metafemur pubescent in proximal four fifths, with very oblique hairline, half of the posterior margin being glabrous. Metatibia slender, longer mesal spur reaching to halflength of metatarsomere 2. Metatarsus slightly shorter than tibia.

Abdominal ventrites dark brown, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 91): Phallobase shorter than parameres, abruptly narrowed proximally, manubrium extended into a narrow spit. Parameres widened basally and apically, with indentation on lateral faces subapically, apices with pointed mesally directed extension. Median lobe shorter than parameres, apex wide, corona situated subapically, basal apophyses short, extended distinctly into phallobase.

DISTRIBUTION: Northern Madagascar.

### *Anacaena mascarena* HEBAUER, 2002

*Anacaena mascarena* HEBAUER, 2002: 6.

TYPE LOCALITY: Madagascar, Antsiranana province, Parc National de la Montagne d'Ambre.

TYPE MATERIAL: **Holotype** ♂ (MNS): Madagascar, Parc d'Ambre, 16.IX.-21.IX.97, leg. P. und H. Schüle. – **Paratypes**: 1 ex. (MNS), 1 ♂ (CHG): "Madagascar, Parc d'Ambre, 16.09.-21.09.1997, leg. P. und H. Schüle \ PARATYPUS *Anacaena mascarena* sp.n. des F. Hebauer [orange label]". – Material from CHG examined, but not material from MNS.

ADDITIONAL MATERIAL EXAMINED: 8 exs. (NMW): "Madagascar (154) 17.11.2001 Joffreville (M. d'Ambre, Antsiranana), R. de Manques in Reserve Fontenay, 550 m asl., Gerecke & Goldschmidt coll."; 2 exs. (NMW): "Madagascar (156) 18.11.2001 Joffreville (M. d'Ambre, Antsiranana), rheocene at right affl., R. de Manques in

Reserve Fontenay, 610 m asl., Gerecke & Goldschmidt coll."; 2 exs. (NMW): "Madagascar (157) 18.11.2001 Joffreville (M. d'Ambre, Antsiranana), ripar. springs at right affl. R. de Manques in Reserve Fontenay, 650 m asl., Gerecke & Goldschmidt coll."; 18 exs. (NMW): "Madagascar (162) 20.11.2001 Joffreville (M. d'Ambre, Antsiranana), R. de Manques in reserve Fontenay, 730 m asl., Gerecke & Goldschmidt coll."; 1 ex. (NMW): "Madagascar (163) 20.11.2001 Joffreville (M. d'Ambre, Antsiranana), R. de Manques in reserve Fontenay, 580 m asl., Gerecke & Goldschmidt coll."; 2 exs. (NMW): "Madagascar (165) 21.11.2001 Joffreville (M. d'Ambre, Antsiranana), River Antomboka, downstr. large cascade, 850 m asl., Gerecke & Goldschmidt coll."; 1 ex. (NMW): "Madagascar (11) 21.7.2001 Anjozorobe (Antananarivo), Ravoandrina, Ampanakamonty, Riv. near campsite, 1280 m asl., Gerecke & Goldschmidt coll."; 1 ex. (NMW): "Madagascar (169) 29.11.2001 Tampoketsan Ankatsobe (Antananarivo), spring stream exp. W, W f/m R.N.4 (km 157), 1400 m asl., Gerecke & Goldschmidt coll."; 13 exs. (NMW): "Madagascar: Fianarantsoa: 2 km E Vohiparara, 1100 m (PN Ranomafana) 27.10.2001"; 1 ex. (NMW): "Madagascar est, 1100 - 1200 m, P.N. Ranomafana / Vohiparara, 21.-24.1.1993, J. Janák lgt."; 1 ♀ (NMW): "Madagascar est, 930 - 1000 m, Andasibe (Périnet), 6.-7.2.1993, J. Janák lgt."; 1 ♂ (NMW): "Madagascar: 14.-16.1.1995 Rég. Ambatondrazaka 5km N Didy, 1100 - 1200 m leg Janák (9)"; 1 ♀ (NMW): "Madagascar: 21.1.1995, 10 km W Maheriara 1200 - 1300 m leg. Janák (12)".

**DIAGNOSIS:** Body comparatively large; clypeus yellowish brown, frons dark brown, pronotum yellowish brown with a darker brown central patch of variable extension; elytra dark brown with light brown stripes; nine antennomeres; maxillary palpi yellow without infuscation; punctuation on head fine, on pronotum very fine; mesoventrite with distinct horizontal ridge; metafemora with reduced pubescence and oblique hairline.

**DESCRIPTION:** Total length 2.2 - 2.6 mm, total width 1.4 - 1.5 mm, E.I.: 1.19. Habitus (Fig. 9) oval, greatest width approximately in the middle, elytra four times as long as pronotum in dorsal view.

**Head** (Figs. 22, 36, 50): Labrum, clypeus and frons light or dark brown (not shining black as in original description); with yellowish preocular patches of varying extension, in some individuals extending over almost entire clypeus with a small darker spot in middle of clypeus. Irregular punctures on clypeus and frons fine, deep, distantly distributed with large interstices, becoming finer and denser at anterior and lateral clypeal margins. Interstices without microsculpture. Clypeus short, lateral margin slightly longer than longitudinal diameter of eye, moderately converging, without distinct anterior corners, anterior margin straight. Frontoclypeal suture weakly visible, sometimes confined to lateral parts of head. Nine antennomeres; pedicellus approximately as long as intermediate segments together, antennomere 3 distinctly longer than antennomere 4. Maxillary palpi slender, yellowish brown; palpomere 2 weakly inflated, palpomere 4 almost symmetrical, slightly attenuated apically, without terminal infuscation. Temples, mentum, gula and submentum dark brown to black. Mentum ca. two times as wide as long; posterior portion flat, anterior portion slightly depressed, with very coarse, rather densely distributed punctures, becoming denser in anterior half; lateral margins densely fringed with light setae, convex with distinct anterior angles, anterior margin convex, weakly excised mesally. Submentum with long fine setae. Labial palpi rather stout.

**Thorax:** Pronotum dark brown (not shining black as in the original description), central patch of variable extension, often reduced to a small central area, sometimes divided into three sections by indentations, with large, not well demarcated yellowish lateral portions. Irregular punctuation very fine, distantly distributed, becoming somewhat coarser and denser towards lateral margins. Interstices shining, without microsculpture. Lateral margins tenderly beaded, strongly convex, posterior angles scarcely discernible. Prosternum dark brown to black, slightly bulged. Hypomeron distinctly lighter. Scutellar shield dark brown, with fine irregular punctuation. Elytra brown, with distinct light brown longitudinal stripes of varying width: in light coloured individuals extending from elytral base to apex, in dark individuals (e.g. paratype, as in the original description) interrupted in the middle. Elytral punctures moderately coarse, with equidistant and dense distribution, diameters of punctures on average slightly smaller than interstices, becoming denser towards lateral margins, irregular, with a short subseriate

arrangement of some coarser punctures along lateral margin. Interstices without microsculpture. Sutural stria in posterior two thirds of elytra. Mesoventrite with a conspicuous mesally pointed transverse ridge. Anapleural sutures sharply S-shaped, anterior sections slightly converging (Fig. 64). Epipleura rufous brown, meso- and metaventrite dark brown to blackish brown.

Legs (Fig. 78): Femora and tibiae dark brown, with lighter rufous brown areas, tarsi rufous brown. Hydrofuge pubescence on ventral face of femora with sharp hairline: profemur almost entirely pubescent with rounded hairline, mesofemur largely pubescent with rounded hairline, metafemur pubescent in proximal half with oblique hairline. Metatibia slender, with weak spines, longer mesal spur exceeding halflength of tarsomere 2. Metatarsus slightly shorter than tibia.

Abdominal ventrites dark brown to blackish brown, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 92): Phallobase slightly longer, hardly wider than parameres, manubrium short, moderately narrow. Parameres widened proximally and distally; inner margin distinctly bulged subbasally, with a bill-shaped mesally directed extension near apex, embracing median lobe; outer margin rounded with slight indentation in midlength. Median lobe comparatively short, broad, much shorter than parameres, apex broadly rounded, corona situated apically, basal apophyses short, extending into phallobase.

DISTRIBUTION: Northern and Eastern Madagascar.

***Anacaena parvicristata* sp.n.**

TYPE LOCALITY: Madagascar, Fianarantsoa province, Ranomafana National Park, Vohiparara.

TYPE MATERIAL: **Holotype** ♂ (NMW): "Madagascar est, 1100 - 1200 m, P. N. Ranomafana \ Vohiparara, 21.-24.1.1993, J. Janák lgt.". – **Paratypes**: 51 exs. (NMW): same data as holotype; 75 exs. (NMW, HUB, ISNB, ZMUC): "Madagascar est, 1100 - 1200 m, P. N. Ranomafana \ Vohiparara, 21.-24.1.1993, G. Dunay + J. Janák lgt.".

DIAGNOSIS: Body comparatively small; head, pronotum and elytra dark brown to black; clypeus with indistinct lighter preocular area, short, without discernible anterior margins; eight antennomeres; maxillary palpi stout, yellow, with distinct apical infuscation; punctures on head very fine, on pronotum obsolete, on elytra moderately fine, largely irregular; mesoventrite with very low horizontal ridge; metafemoral pubescence extended with oblique hairline.

DESCRIPTION: Total length 1.6 - 1.8 mm, total width 0.9 - 1.0 mm, E.I.: 1.3. Habitus (Fig. 10) narrowly oval, greatest width approximately in the middle, elytra ca. four times as long as pronotum in dorsal view.

Head (Figs. 23, 37, 51): Labrum light brown. Clypeus and frons dark brown to black, with indistinctly demarcated lighter preocular areas and anterior margin of clypeus. Irregular punctures very fine, distantly distributed, becoming denser towards anterior clypeal margin. Interstices without microsculpture. Clypeus short, lateral margin as long as longitudinal diameter of eye, evenly curved, strongly converging, without distinct anterior corners, anterior margin straight. Frontoclypeal suture very fine, hardly visible. Eight antennomeres; pedicellus longer than intermediate segments together, antennomere 3 distinctly longer than antennomere 4. Maxillary palpi stout, yellowish brown; palpomere 2 weakly inflated, palpomere 4 asymmetrical with shorter inner margin, truncate apically, with distinct apical infuscation. Temples, mentum, gula and submentum dark brown. Mentum ca. 1.7 times as wide as long; posterior portion flat, anterior portion slightly depressed, with fine setiferous punctures anteriorly; lateral margins densely fringed with fine long setae, straight to weakly convex, with rounded anterior angles; anterior margin convex, distinctly excised mesally. Labial palpi moderately stout.

Thorax: Pronotum dark brown to almost black, shining, without microsculpture, in some individuals with narrow yellowish lateral margins. Punctures very fine, almost obsolete, very distantly distributed. Lateral margins tenderly beaded, convex without discernible posterior angles. Prosternum rufous brown, distinctly lighter than dorsal face of pronotum, slightly bulged. Scutellar shield dark brown, with very fine irregular punctation. Elytra dark brown to black, lateral margins and apical portions indistinctly lightened up. Elytral punctation fine anteriorly, becoming coarser in posterior half, densely distributed, diameters of punctures distinctly smaller than interstices; largely irregular, subseriate towards lateral margins. Interstices without microsculpture. Sutural stria in posterior two thirds of elytra. Mesoventrite with a very small and low inconspicuous transverse ridge. Anapleural sutures smoothly S-shaped, anterior sections distinctly converging (Fig. 65). Epipleura, meso- and metaventrite rufous brown.

Legs (Fig. 79): Femora, tibiae and tarsi rufous brown. Hydrofuge pubescence on ventral face of femora with sharp hairline: profemur pubescent in proximal four fifths, with rounded hairline, mesofemur largely pubescent except on a small distal area, with rounded hairline, metafemur pubescent in proximal two thirds, with oblique hairline. Metatibia slender with weak spines, longer mesal spur reaching to half length of tarsomere 2. Metatarsus as long as metatibia.

Abdominal ventrites rufous brown, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 93): Phallobase approximately as long as parameres, manubrium short, abruptly narrowed, extended into a short spine. Parameres broadly rounded apically, with a shallow subapical indentation on lateral face. Median lobe shorter than parameres, apex pointed, corona situated apically; basal apophyses short, extended into phallobase.

DISTRIBUTION: Eastern Madagascar.

ETYMOLOGY: The name of the epithet refers to the very small ridge on the mesoventrite.

### *Anacaena polita* sp.n.

TYPE LOCALITY: Madagascar, Toamasina province, Andasibe National Park.

TYPE MATERIAL: **Holotype** ♂ (NMW): "Madagascar est, 930 - 1000 m, Andasibe (Périnet), 6.-7.2.1993, J. Janák lgt.". – **Paratypes**: 11 exs. (NMW, HUB, ISNB): same data as holotype; 1 ♂, 1 ♀ (NMW): "Madagascar est, 1000 - 1200 m, Maromiza pr. \ Andasibe (Périnet), 9.2.1993, J. Janák lgt."; 1 ♂ (NMW): "Madagascar: 7.-10.1.1995 Andasibé (Périnet) 930 - 1000 m leg. Janák (3)"; 1 ♀ (NMW): "Madagascar est, 1100 - 1200 m, P. N. Ranomafana \ Vohiparara, 21.-24.1.1993, G. Dunay + J. Janák lgt."; 1 ex. (NMW): "Madagascar: 3.-4.2.1995 Ranomafana NP env. Sahavondrona, 1150 - 1250 m, leg. Dunay & Janák (21)"; 1 ex. (NMW): "1.-2.2.1995 Ambohimananarivo S. Ifanadiana, 450 - 550 m, leg. Dunay & Janák (21)"; 7 exs. (ZMUC): "Madagascar: Tamatave Prov., Andasibe, (Périnet), 18°56' S, 48°25' E, 1-5 November 1984, Robert W. Brooks".

DIAGNOSIS: Body comparatively large, evenly dark brown with yellow pronotal margins and paler elytral apex; clypeus with very indistinct paler areas, moderately sized, without discernible anterior angles; nine antennomeres; maxillary palpi slender, yellow without infuscation; punctation on head and elytra fine, on pronotum obsolete; mesoventrite with distinct horizontal ridge; metafemora with reduced pubescence and oblique to almost horizontal hairline.

Aedeagus similar to that of *A. mascarena*; main differences are the relative lengths of phallobase to parameres and the shape of the corona; but the differences are weak, this character therefore not recommended for differentiating between the two species.

DESCRIPTION: Total length 2.5 - 2.6 mm, total width 1.5 - 1.6 mm, E.I. 1.28. Habitus (Fig. 11) narrowly oval, greatest width in the middle, elytra ca. four times as long as pronotum in dorsal view.



Head (Figs. 24, 38, 52): Labrum light brown. Clypeus and frons dark brown, with very indistinct pale preocular patches. Irregular punctures extremely fine, almost obsolete, interstices without microsculpture. Clypeus moderately sized, lateral margin convex, longer than longitudinal diameter of eye, moderately converging, without distinct anterior corners, anterior margin almost straight. Frontoclypeal suture confined to lateral parts, scarcely visible. Nine antennomeres; pedicellus approximately as long as intermediate segments together, antennomere 3 distinctly longer than antennomere 4. Maxillary palpi slender, yellowish brown; palpomere 2 weakly inflated, palpomere 4 almost symmetrical, attenuated apically, without terminal infuscation. Temples, mentum, gula and submentum dark brown to black. Mentum ca. 1.6 times as wide as long, posterior portion flat, anterior portion slightly depressed, with fine setiferous punctures anteriorly; lateral margins distinctly convex, with weak anterior angles, lateral and anterior margins densely fringed with fine long setae; anterior margin convex, distinctly excised mesally. Labial palpi stout.

Thorax: Pronotum dark brown with yellow lateral and posterior margins, not sharply demarcated, without punctures, shining, without microsculpture. Hypomeron rufous brown. Lateral pronotal margins not distinctly beaded, convex, without discernible posterior angles. Prosternum dark brown to black, slightly bulged. Scutellar shield dark brown, with extremely fine irregular punctation. Elytra dark brown, distinctly lightened up in apical third or fourth of elytra. Punctures moderately fine, distinctly coarser than on head, with equidistant, dense distribution, diameters of punctures smaller than interstices, irregular, becoming partially coarser and subseriate towards lateral margins. Interstices without microsculpture. Sutural stria in posterior three fourths of elytra. Mesoventrite with a conspicuous transverse ridge. Anapleural sutures sharply S-shaped, anterior sections almost parallel-sided to slightly converging (Fig. 66). Epipleura rufous brown. Meso- and metaventrite dark brown to blackish brown.

Legs (Fig. 80): Femora and tibiae dark brown, with lighter, rufous brown areas, tarsi rufous brown. Hydrofuge pubescence on ventral face of femora with sharp hairline: pro- and mesofemur pubescent in proximal four fifths, with rounded hairline, metafemur pubescent on anterior margin and proximal portion, with almost horizontal hairline. Metatibia slender, with weak spines, longer mesal spur reaching halflength of tarsomere 2. Metatarsus slightly shorter than tibia.

Abdominal ventrites dark brown to blackish brown, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 94): Phallobase approximately as long and slightly wider than parameres, abruptly narrowed towards short, narrow manubrium. Parameres widened proximally and distally, mesal face distinctly bulged subbasally, apex rounded, with bill-shaped mesally directed extension subapically, embracing median lobe, lateral face almost straight. Median lobe short, much shorter than parameres, apex broadly rounded, corona situated apically, basal apophyses short, reaching into phallobase.

DISTRIBUTION: Eastern Madagascar.

ETYMOLOGY: The name of the epithet refers to the smooth, unpunctate pronotum.

### *Anacaena reducta* sp.n.

TYPE LOCALITY: Republic of South Africa, Western Cape, Stellenbosch Mountains, Jonkershoek.

TYPE MATERIAL: **Holotype** ♂ (NMW): "RSA, West Cape, Stellenbosch Mts.: 10 km SE Stellenbosch [33,56S / 18,51E], Jonkershoek. 28.2.1997 Hess & Heckes leg.". – **Paratypes**: 6 ♀♀ (NMW): "Western Cape, Hex River Mts.: 8 km SW Ceres (= 33,23S / 19,19E), 450 m NN. 27.2.1997, Hess & Heckes leg. \ Hang oberhalb Michell's

Paß-Straße: überrieseltes Moos an Felswand, kleiner Bach in steiler Rinne [= slope above Michell's pass-road: hygropteric in moss, small stream within steep channel]"; 1 ♀ (NMW): "RSA, West Cape, Hex River Mts.: 7 km SW Ceres (33,23S / 19,19E), 400 m NN. 25.2.1997, Hess leg. \ Breede-river (Breë River) am Michell's Paß: Rockpools, Stillwasserzone, überrieseltes Moos [lentic zone, hygropteric in moss]"; 2 ♀♀ (NMW): "Western Cape, 1.3. 1997, Du Toits Mts.: 15 km E Paarl, 33°45'S / 18°58'E, leg. Hess & Heckes (14)"; 19 exs. (NMW, HUB, ISNB): "RSA West Cape, Bainskloof Pass 33°38'S / 19°10'E, leg. V. Grebniukov, 24.12.-8.1.02".

**DIAGNOSIS:** Body comparatively very small; head black, pronotum and elytra blackish brown; clypeus well developed with distinct anterior angles; eight antennomeres; maxillary palpi rufous brown, palpomere 4 entirely infuscated; head, pronotum and elytra with moderately coarse punctures; mesoventrite flat; metafemoral pubescence reduced.

**DESCRIPTION:** Total length 1.9 - 2.3 mm, total width 1.1 - 1.2 mm, E.L.: 1.08. Habitus (Fig. 12) oval, rather short, greatest width in the middle, elytra less than three times as long as pronotum in dorsal view.

**Head** (Figs. 25, 39, 53): Labrum black, punctures in posterior half similar to punctures on clypeus. Clypeus and frons entirely black. Irregular punctures on clypeus and frons moderately coarse, deep, densely distributed, diameter of punctures as large or slightly smaller than interstices, markedly denser and partly confluent towards lateral margins of clypeus; fine and close-standing punctures on frons along margins of eye, some coarser setiferous punctures mesally to eye. Interstices without microsculpture. Clypeus large, lateral margin weakly convex, distinctly longer than longitudinal diameter of eye, with distinct anterior angles, anterior margin slightly concave. Frontoclypeal suture hardly visible. Eight antennomeres; pedicellus long, as long as intermediate segments and cupula together, antennomeres 3 and 4 rather short. Maxillary palpi stout; palpomere 2 markedly inflated, palpomere 1 - 3 rufous brown, palpomere 4 almost symmetrical, broadly rounded apically, strongly infuscated to black. Mentum ca. 1.5 times as wide as long, black, flat posteriorly, depressed in anterior third, with scattered, equally distributed fine setiferous punctures, interstices shining, without microsculpture; lateral margins densely fringed with long setae, weakly convex, without distinct anterior angles; anterior margin convex, shallowly excised. Submentum smooth, without setae. Labial palpi stout.

**Thorax:** Pronotum blackish brown, with broad yellowish lateral margins, sharply demarcated from pronotal disc, continued into a narrow strip along posterior border, hardly reaching middle of posterior pronotal margin. Irregular punctures finer than on head, rather shallow, equidistantly and moderately densely distributed, diameter of punctures smaller than interstices, few setiferous punctures on lateral portions. Interstices without microsculpture. Lateral margins and anterior corners tenderly beaded, moderately convex with rounded posterior angles. Prosternum dark brown, flat. Hypomeron slightly lighter. Scutellar shield blackish brown, shining, with few fine irregular punctures. Elytra blackish brown, with black spots shining through from ventral face of elytra, apically variably brownish lightened up with indistinct demarcation. Elytral punctation moderately coarse and deep, densely distributed, diameter of punctures smaller than interstices, becoming coarser and deeper towards lateral margins, irregular with indistinct subseriate arrangement postero-laterally. Interstices without microsculpture. Sutural stria in posterior two thirds of elytra. Mesoventrite flat, anapleural sutures softly S-shaped, anterior sections distinctly converging (Fig. 67). Epipleura dark brown to almost black, meso- and metaventrite black.

**Legs** (Fig. 81): Black, distal portion of femora, tibiae and tarsi rufous brown. Hydrofuge pubescence on ventral face of femora with sharp hairline: pro- and mesofemur pubescent in proximal half; hairline rounded in profemur, oblique in mesofemur, pubescence on metafemur confined to extreme proximal portion, continued into a narrow short seam extended to middle of anterior margin. Metatibia slender with strong spines, longer mesal spur exceeding midlength of tarsomere 2. Metatarsus slightly shorter than tibia.

Abdominal ventrites black, entirely covered with dense hydrofuge pubescence.

**Aedaeus** (Fig. 95): Phallobase slightly longer than parameres, gradually narrowed proximad, manubrium short and wide, not well demarcated. Parameres stout, lateral and mesal faces almost parallel-sided, mesal face weakly widened apically and basally, broadly rounded apically, median lobe slightly shorter than parameres, narrowed towards broadly rounded apex, corona situated subapically, basal apophyses narrow, extended distinctly into phallobase.

**DISTRIBUTION:** Republic of South Africa, Western Cape.

**ETYMOLOGY:** The name of the epithet refers to the small body size, reduced numbers of antennomeres, reduced metafemoral pubescence, and to the simple mesoventrite without prominence.

***Anacaena sucinea* sp.n.**

**TYPE LOCALITY:** Madagascar, Fianarantsoa province, Ranomafana National Park, Vohiparara.

**TYPE MATERIAL** **Holotype** ♂ (NMW): "Madagascar est, 1100 - 1200 m, P. N. Ranomafana \ Vohiparara, 21.-24.1.1993, J. Janák leg.". – **Paratypes:** 308 exs. same data as holotype; 458 exs. (NMW, ZMUC, ISNB): "Madagascar est, 1100 - 1200 m, P. N. Ranomafana \ Vohiparara, 21.-24.1.1993, G. Dunay + J. Janák leg."; 1 ♂ (NMW): "Madagascar est, 850 - 1000 m, P.N. Ranomafana \ Ambodiamontana, 26.-27.1.1993, J. Janák lgt."; 1 ♀ (NMW): "Madagascar est, 900 - 950 m, Amparafara pr. Moramanga, 8.2.1993, J. Janák lgt."; 1 ♀ (NMW): "Madagascar est, 1000 - 1200 m, Maromiza pr. \ Andasibe (Périnet) 9.2.1993, J. Janák lgt."; 1 ♀ (NMW): "Madagascar est, 930 - 1000 m, Andasibe (Périnet) 6.-7.2.1993, J. Janák lgt."; 1 ♂ (NMW): "Madagascar: 21.1.1995, 10 km W Marahara, 1200 - 1300 m, leg Janák (12)"; 1 ♂ (CFP): "Madagascar or., 17-23.12.98, 30 km SEE of Betroka, 1400 - 1670 m, E of Vohitrosa forest 1825 m, Bulirsch leg. \ coll. M. Fikáček, CZ-Praha"; 1 ♂ (CFP): "E Madagascar, 1 - 8 km E of Betroka, 800 - 850 m, 11.12.1998, P. Bulirsch lgt. \ coll. M. Fikáček, Charles Univ. Prague, Czech Republic"; 1 ♂ (CFP): "Madagascar, Fianarantsoa prov., 1.5 km NW Ampitambe (black light) 47°17'46"E, 21°28'30"S, 4.-5.2.2000, O. Hovorka lgt. \ coll. M. Fikáček, CZ-Praha"; 2 ♂♂, 1 ♀, 1 ex. (HUB): "Madagascar Est, P.N. Ranomafana env. Sahavondrona, 3.-4.2.1995 \ 1150 - 1250 m forêt humide, arbres, arbustes, J. Janák lgt."; 1 ♀ (HUB): "Madagascar Est, 4.2.1995, P.N. Ranomafana env. Sahavondrona \ 1150 - 1250 m forêt humide, lux, G. Dunay + J. Janák leg."; 2 ♂♂, 1 ex. (HUB): "Madagascar Est, Maromiza pr. Périnet, 8.-10.1.1995, J. Janák lgt. \ 950 - 1150 m forêt humide tamisages"; 1 ex. (HUB): "Madagascar Est, Andasibé (Périnet) 7.-10.1.1995 J. Janák lgt. \ 930 - 1000 m forêt humide tamisages".

**DIAGNOSIS:** Body comparatively very small; head, pronotum and elytra light to dark brown, preocular clypeal region yellowish lightend up; clypeus short without discernible anterior angles; eight antennomeres; maxillary palpi stout, amber coloured with palpomere 4 indistinctly infuscated or entirely dark brown, palpomere 4 with sexual dimorphism; head and pronotum with fine punctation, elytra with distinctly coarser punctures; mesoventrite flat; metafemoral pubescence reduced.

This species resembles *A. advena* (SHARP, 1890), which can be separated by its larger size, mesoventrite with small horizontal ridge, mentum anteriorly rounded, metafemoral pubescence extended.

**DESCRIPTION:** Total length 1.4 - 1.9 mm, total width 0.9 - 1.0 mm, E.I.: 1.13. Habitus (Fig. 13) oval, greatest width in the middle, elytra more than three times as long as pronotum in dorsal view.

Head (Figs. 26, 40, 41, 54): Labrum, clypeus and frons light brown to dark brown; in lighter individuals sometimes head darker than pronotum and elytra, and clypeus indistinctly lightened anteriorly. Irregular punctures fine, densely distributed, distinctly denser towards clypeal margins, without setiferous punctures. Interstices without microsculpture. Clypeus short, lateral margin as long as longitudinal diameter of eye, with strongly converging lateral margins, without distinct anterior angles, anterior margin straight. Frontoclypeal suture weakly visible as dark line laterally. Eight antennomeres; pedicellus long, as long as intermediate segments and cupula

together, antennomere 3 slightly longer than antennomere 4. Maxillary palpi stout, entirely dark brown or amber coloured; palpomere 2 conspicuously inflated, palpomere 4 almost symmetrical, infuscated, with distinct sexual dimorphism: in males thickened, wider than palpomere 3 and truncate apically, in females as wide as palpomere 3 and with slightly attenuated apex; in males palpomere 4 usually darker than in females. Temples, mentum, submentum and gula amber coloured with indistinct infuscations. Mentum ca. 1.5 times as wide as long, rufous brown, posterior portion flat, anterior portion indistinctly depressed with few extremely fine punctures anteriorly; interstices without microsculpture; posterior angles rectangular; lateral margins with few fine setae, straight, parallel-sided, with distinct anterior angles; anterior margin convex, scarcely excised. Labial palpi stout.

Thorax: Pronotum evenly light or dark brown, shining, irregular punctation fine, finer and less densely distributed than on head, slightly coarser towards lateral margins. Interstices smooth, without microsculpture. Lateral pronotal margins tenderly beaded, convex, posterior corners more accentuated than the more rounded anterior corners. Prosternum amber coloured, slightly bulged. Scutellar shield amber coloured with darker margins, with very fine irregular punctation. Elytra amber coloured or dark brown, median suture dark brown. Elytral punctures moderately coarse, densely distributed, diameters of punctures on average slightly smaller than interstices, becoming denser and coarser on lateral margins, irregular at elytral base and anterior fourth of elytral disc, with subserial to serial arrangement in posterior three fourths, particularly postero-laterally. Interstices without microsculpture. Sutural stria in posterior two thirds of elytra. Mesoventrite flat, anapleural sutures weakly visible, with converging anterior sections (Fig. 68). Epipleura, meso- and metaventrite amber coloured with indistinct infuscations.

Legs (Fig. 82): Femora, tibiae and tarsi coloured like meso- and metaventrite. Hydrofuge pubescence on ventral face of femora with sharp hairline: profemur pubescent on proximal two thirds, with weakly rounded hairline, mesofemur pubescent in proximal three fourths, with weakly rounded hairline; pubescence on metafemur restricted to a small proximal area and a narrow seam on anterior margin. Metatibia slender, longer mesal spur reaching to proximal end of tarsomere 2. Metatarsus somewhat shorter than tibia.

Abdominal ventrites entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 96): Phallobase significantly shorter than parameres, abruptly narrowed towards moderately wide manubrium. Parameres widened proximad, with bottleneck shaped dentation on lateral face; rounded apically, bases of parameres strengthened by strong rails. Median lobe short, shorter than parameres, straightly converging to narrowly rounded apex, corona situated apically, basal apophyses within parameres, not extended into phallobase.

DISTRIBUTION: Eastern Madagascar.

ETYMOLOGY: The name of the epithet (sucinum = amber) refers to the amber coloured ventral body face.

### *Anacaena tenella* HEBAUER, 1999

*Anacaena tenella* HEBAUER, 1999: 8.

TYPE LOCALITY: Republic of South Africa, Kwa Zulu Natal province, Drakensberg, Monks Cowl.

TYPE MATERIAL EXAMINED (sampling labels blue, type labels orange): **Holotype** ♂ (HUB): "R.S.Africa: 9.xi.1993, 29°03'S / 29°24'E, Natal: Drakensberg: Monks Cowl, 1450 m, river cascade, leaf litter + flood refuse-sievings, leg. Uhlig \ ♂ \ HOLOTYPE Anacaena tenella des. F. Hebauer". – **Paratype**: 1 ♀ (HUB): same sampling data as holotype, type label "PARATYPE Anacaena tenella des. F. Hebauer".

ADDITIONAL MATERIAL EXAMINED: 1 ♀ (NMW): "Western Cape, Hex River Mts.: 8 km SW Ceres (= 33,23S / 19,19E), 450 m NN. 27.2.1997, Hess & Heckes leg. \ Hang oberhalb Michell's Paß-Straße: überrieseltes Moos an Felswand, kleiner Bach in steiler Rinne [= slope above Michell's pass-road: hygropetric in moss, small stream within steep channel]"; 1 ♀ (NMW): "RSA, West Cape, Hex River Mts.: 7 km SW Ceres (33,23S / 19,19E), 400 m NN. 25.2.1997 Hess leg. \ Breede-river (= Breë River) am Michell's Paß: Rockpools, Stillwasserzone, überrieseltes Moos [hygropetric in moss]"; 2 ♀♀ (NMW): "RSA, West Cape, Du Toits Mts.: 8 km SE Franschoek (= 33,55S / 19,08 E) 28.2.1997, Hess & Heckes leg. \ Du Toits River (Bergbach [mountain stream]), S Franschoek Paß (2,5 km von der Paßhöhe, oberhalb Straßenbrücke [apart from top of pass, above road bridge])"; 1 ♀ (NMW): "RSA, Western Cape, 1.3. 1997, Du Toits Mts., 15 km E Paarl, 33°45'S 18°58' E, leg. Hess & Heckes (14)".

DIAGNOSIS: Body comparatively small; clypeus and frons black, pronotum and elytra chestnut brown; clypeus well developed with distinct anterior angles; eight antennomeres; maxillary palpi light brown, palpomere 4 entirely black; head, pronotum and elytra with fine punctures; mesoventrite flat; metafemoral pubescence reduced.

DESCRIPTION: Total length 2.3 - 2.5 mm, total width 1.2 - 1.5 mm, E.I.: 1.06. Habitus broadly oval, greatest width behind the middle, elytra not longer than three times as long as pronotum in dorsal view.

Head (Figs. 27, 42, 55): Labrum black, punctures in posterior half like on clypeus. Clypeus and frons entirely shining black. Irregular punctures on frons and on posterior portion of clypeus moderately fine, shallow, densely and equidistantly distributed, diameters of punctures smaller than interstices, becoming coarser and denser towards anterior portion of clypeus. Interstices without microsculpture. Very fine and densely distributed punctures on frons along margin of eye. Clypeus large, lateral margin weakly convex, longer than longitudinal diameter of eye, with distinct, rounded anterior angles, anterior margin slightly concave. Frontoclypeal suture hardly visible. Eight antennomeres; pedicellus long, approximately as long as intermediate segments and cupula together, antennomere 3 twice as long as antennomere 4. Maxillary palpi not stout; palpomere 2 moderately inflated, palpomere 4 almost symmetrical, rounded apically, palpomere 1 - 3 light brown, palpomere 4 strongly infuscated to black. Mentum ca. 1.7 times as wide as long, black, almost flat in posterior portion, depressed in anterior third; with equally distributed fine setiferous punctures, interstices without microsculpture; lateral margins fringed with long setae, slightly convex, without distinct anterior angles; anterior margin convex, with distinct, shallow excision. Submentum with setae. Labial palpi stout.

Thorax: Pronotum black, with broad, not sharply demarcated yellowish lateral margins, continued into a narrow yellow strip of various length along anterior and posterior border. Irregular punctures fine, much finer than on head, shallow, rather distantly distributed. Interstices smooth without microsculpture. Lateral margins including anterior corners tenderly beaded, evenly rounded, posterior angles rounded. Prosternum black, flat. Hypomeron brown. Scutellar shield brown, often with darker margins, with very sparse fine irregular punctation. Elytra chestnut brown, lateral margins and in some specimens also apical third of elytra lightened up, with indistinct demarcation. In light individuals black spots shining through from ventral face of elytra, median suture and sutural stria darkened. Some individuals very dark without brighter margins. Punctation on elytra fine, slightly coarser than on pronotum, but with much denser distribution, finer than on head, irregular, becoming coarser and arranged in indistinct series posteriorly on lateral margins. Interstices without microsculpture. Sutural stria in more than posterior half of elytra. Mesoventrite flat, anapleural suture smoothly S-shaped, with distinctly converging anterior sections (Fig. 69). Epipleura brown. Meso- and metaventricle black.

Legs (Fig. 83): Proximal portion of femora black, femora distally, tibiae and tarsi rufous brown. Hydrofuge pubescence on ventral face of femora with sharp hairline: pro- and mesofemur pubescent in proximal half, on profemur with straight to slightly rounded hairline, on mesofemur with oblique hairline, on metafemur pubescence confined to extreme proximal portion continued into a narrow short seam, reaching hardly to middle of anterior margin. Metatibia slender, with

strong spines, longer terminal spur reaching to half length of tarsomere 2. Metatarsus slightly shorter than tibia.

Abdominal ventrites black, entirely covered with dense hydrofuge pubescence.

Aedeagus (Fig. 97): Phallobase significantly longer than parameres, manubrium wide; parameres wider at base, slightly narrowed towards apex, rounded apically; median lobe slightly shorter than parameres, apex pointed, corona situated subapically, basal apophyses short and narrow, extended into phallobase.

DISTRIBUTION: Republic of South Africa, Kwa Zulu Natal and Western Cape provinces.

### Key to the Afrotropical species of *Anacaena*

- 1 Clypeus with angulate lateral extension; femora without distinct hairline. .... *angulata*
- Clypeus without angulate lateral extension; femora with distinct hairline. .... 2
- 2 Eight antennomeres; clypeus without distinct preocular patches; pronotum without darker central patch; mesoventrite with low horizontal ridge or flat. .... 3
- Nine antennomeres; clypeus with distinct or indistinct preocular patches; pronotum with or without darker central patch; mesoventrite with conspicuous mesal protuberance. .... 9
- 3 Total body length more than 2.5 mm; lateral margin of clypeus distinctly longer than diameter of eye; head black; pronotal punctures moderately coarse or coarse; mesoventrite without protuberance; metafemoral pubescence confined to extreme proximal portion and mesal portion of anterior margin. .... 4
- Total body length less than 2.5 mm; lateral margin of clypeus from shorter to slightly longer than diameter of eye; head brown or black; pronotal punctures obsolete or fine; mesoventrite with or without protuberance; metafemoral pubescence confined to extreme proximal portion or on more than half of ventral face. .... 5
- 4 Pronotum and elytra black; elytral punctures coarse, shallow; abdominal ventrites entirely pubescent. .... *capensis*
- Pronotum and elytra dark brown; elytral punctures moderately coarse, rather deep; abdominal ventrites partly glabrous. .... *glabriventris*
- 5 Apical maxillary palpomere not infuscated, coloured like palpomeres 1 - 3; head brown; pronotal punctures obsolete; elytral punctures very fine, subseriate posteriorly; mesoventrite with weak protuberance; metafemoral pubescence on three fourths of ventral face, with oblique hairline. .... *lutea*
- Apical maxillary palpomere partly or entirely infuscated; head brown or black; pronotal punctures from obsolete to fine; elytral punctures fine to moderately coarse, subseriate or irregular posteriorly; mesoventrite with or without protuberance; metafemoral pubescence on two thirds of ventral face, with oblique hairline or confined to extreme proximal portion. .... 6
- 6 Mesoventrite with a low transverse ridge; metafemoral pubescence on proximal two thirds; pronotal punctures very fine, almost obsolete; elytral punctures moderately coarse, irregular posteriorly. .... *parvicristata*
- Mesoventrite flat, without ridge; metafemoral pubescence confined to extreme proximal portion; pronotal punctures fine to moderately coarse; elytral punctures fine to moderately coarse, irregular or subseriate posteriorly. .... 7
- 7 Clypeus without distinct anterior angles, lateral margin as long as diameter of eye; head brown, indistinctly lightened anteriorly; elytral punctures subserial in posterior three fourths; profemoral pubescence on proximal two thirds; mesofemoral pubescence on proximal three fourths, with rounded hairline. .... *sucinea*
- Clypeus with distinct anterior angles, lateral margin longer than diameter of eye; head entirely black; elytral punctures irregular in posterior three fourths; profemoral pubescence on proximal half; mesofemoral pubescence on proximal half, with oblique hairline. .... 8

- 8 Pronotum and elytra brown; punctures on pronotum and elytra moderately coarse..... *reducta*
- Pronotum black, elytra brown; punctures on pronotum and elytra fine..... *tenella*
- 9 Head black; apical maxillary palpomere partly or entirely infuscated; total body length 2.0 - 2.2 mm ..... 10
- Head brown; apical maxillary palpomere coloured like palpomeres 1 - 3 or infuscated; total body length 2.2 - 3.0 mm. .... 11
- 10 Clypeus with narrow red preocular patches, without discernible anterior angles, lateral margin shorter than diameter of eye; pronotum dark brown, without central patch; metafemoral pubescence on proximal half, with S-shaped hairline..... *glabella*
- Clypeus with large yellow preocular patches, with discernible anterior angles, lateral margin longer than diameter of eye; pronotum light brown with a small dark central patch; metafemoral pubescence on four fifths of ventral face, with rounded hairline..... *gracilipalpis*
- 11 Clypeus with very indistinct pale preocular patches; pronotum brown without dark central patch; pronotal punctures obsolete; metafemoral pubescence confined to anterior margin and extreme proximal portion, with horizontal hairline. .... *polita*
- Clypeus with distinct yellow preocular patches; pronotum brown with darker central patch; pronotal punctures obsolete, fine or coarse; metafemoral pubescence on at least proximal half of ventral face. .... 12
- 12 Lateral margin of clypeus not longer than diameter of eye; apical maxillary palpomere infuscated or coloured like palpomeres 1 - 3; elytra without longitudinal stripes; elytral punctures very fine..... *luticola*
- Lateral margin of clypeus longer than diameter of eye; apical maxillary palpomere not infuscated, coloured like palpomeres 1 - 3; elytra with longitudinal stripes; elytral punctures coarse. .... 13
- 13 Lateral margin of clypeus distinctly longer than diameter of eye, with distinct anterior angles; pronotal and elytral punctures coarse; metafemoral pubescence largely extended, with horizontal hairline, posterior margin glabrous..... *fallax*
- Lateral margin of clypeus slightly longer than diameter of eye, with indistinct anterior angles; pronotal punctures very fine, elytral punctures moderately coarse; metafemoral pubescence only covering proximal half, with oblique hairline..... *mascarena*

### Acknowledgements

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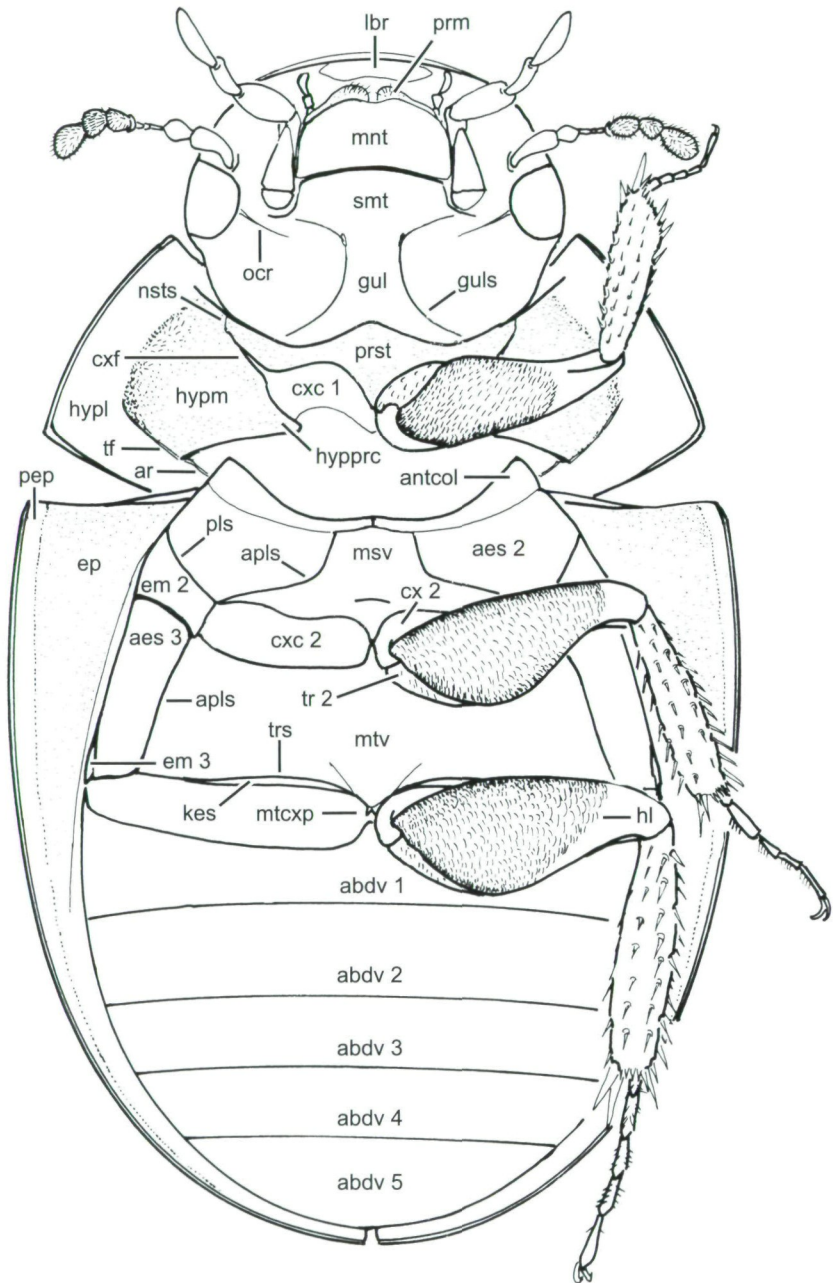
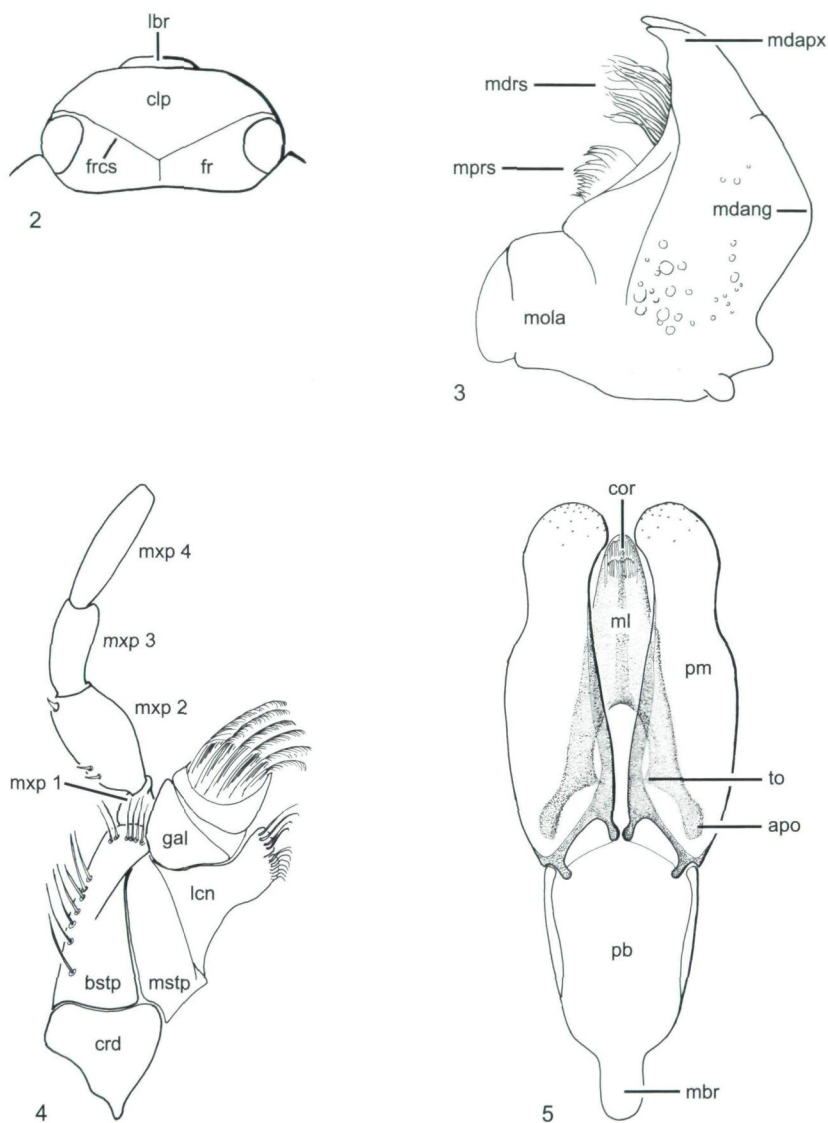


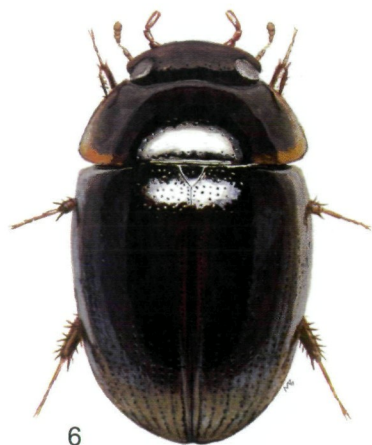
Fig. 1 *Anacaena globulus*, habitus, ventral view, prothorax and caput flexed dorsad; for explanation of abbreviations see opposite page.



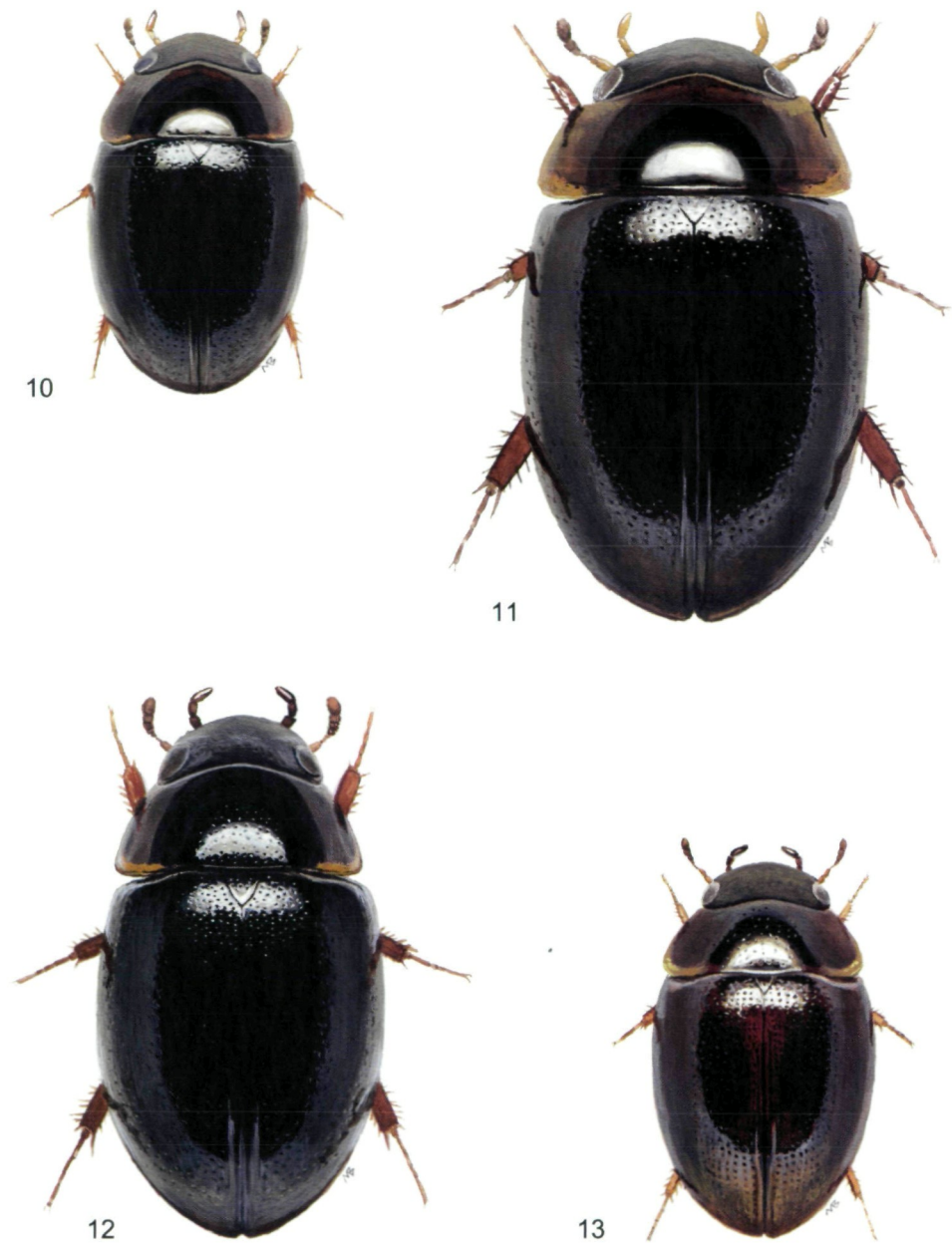


Figs. 2 - 5: Morphological structures of *Anacaena globulus* (2 - 4) and *A. sucinea* (5): 2) caput, dorsal view; 3) mandible; 4) maxilla; 5) aedeagus.

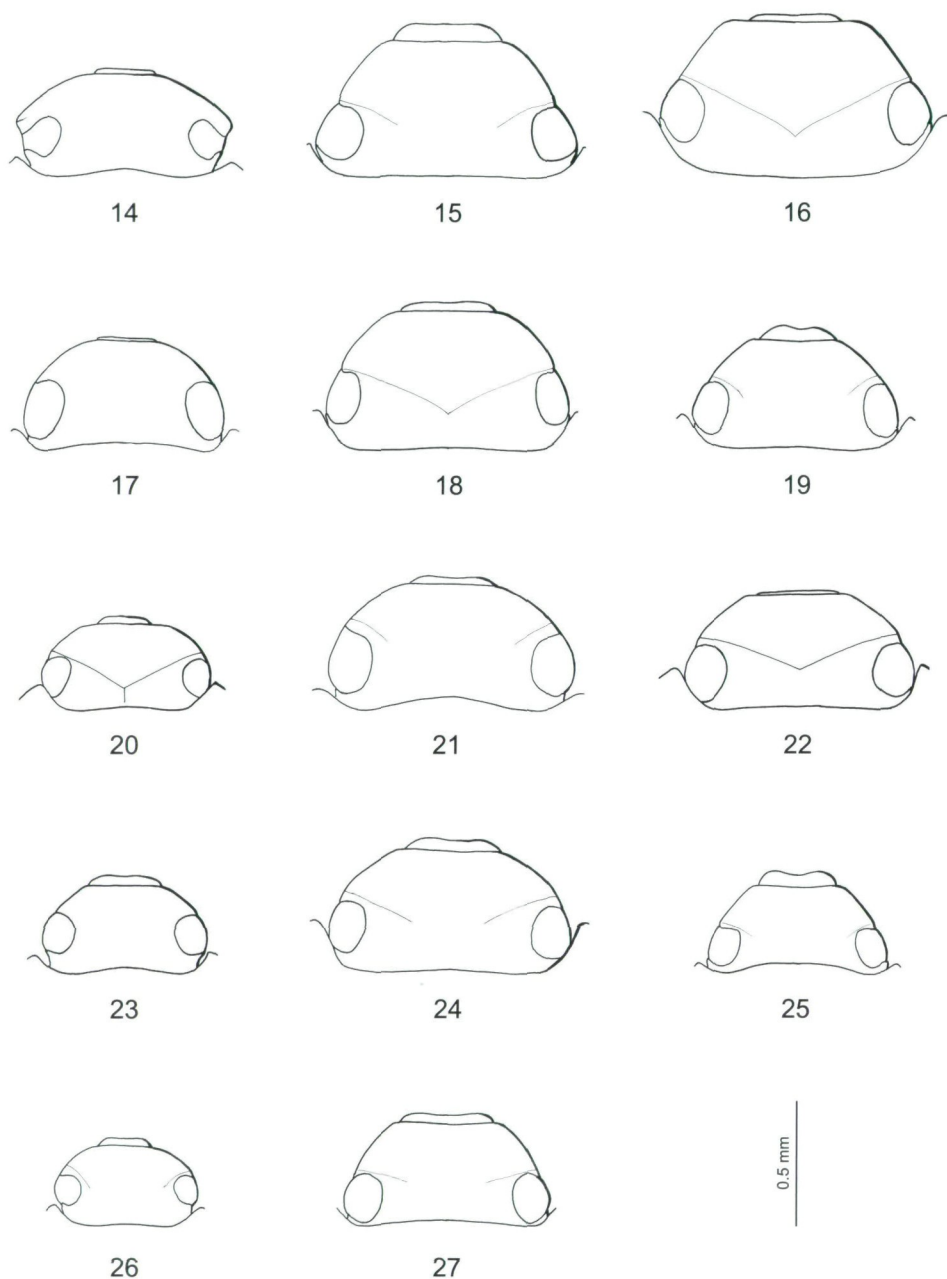
Abbreviations: abdv - abdominal ventrite; aes - anepisternum; apls - anapleural suture; antcol - anterior collar; apo - apophyses; ar - accessory ridge; bstp - basistipes; clp - clypeus; cor - corona; crd - cardo; cx - coxa; cxc - coxal cavity; cxf - coxal fissure; em - epimeron; ep - epipleuron; fr - frons; frcs - frontoclypeal suture; gal - galea; gul - gula; guls - gular suture; hl - hairline; hyp1 - hypomerion, lateral portion; hypm - hypomerion, mesal portion; hypprc - hypomerion process; kes - katepisternum; lbr - labrum; lcn - lacinia; mbr - manubrium; mdang - mandibular angle; mdapx - mandibular apex; mdrs - medio-distal row of setae; ml - median lobe; mnt - mentum; mprs - medio-proximal row of setae; mstp - mediostipes; msv - mesoventrite; mtcxp - metacoxal processes; mtv - metaventrite; mxp - maxillary palpomere; nsts - notosternal suture; ocr - ocular ridge; pb - phallobase; pep - pseudopipleuron; pls - pleural suture; pm - parameres; prm - prementum; prst - prosternum; smt - submentum; tf - transverse fold; to - tooth; tr - trochanter; trs - transverse suture.



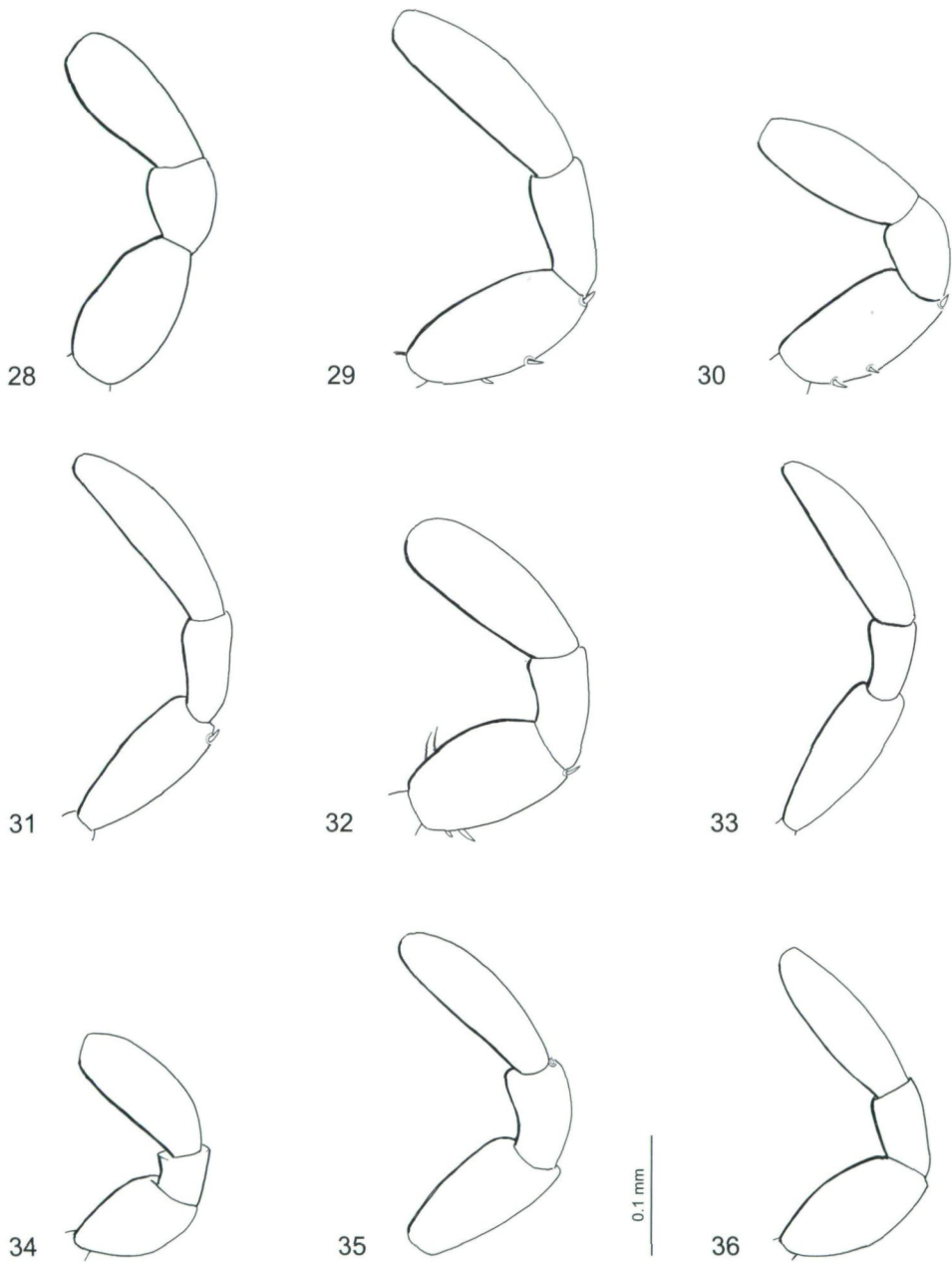
Figs. 6 - 9: Habitus (pronotum and caput slightly flexed dorsad, in order to show more details): 6) *Anacaena angulata*, 7) *A. glabella*, 8) *A. glabriventris*, 9) *A. mascarena*.



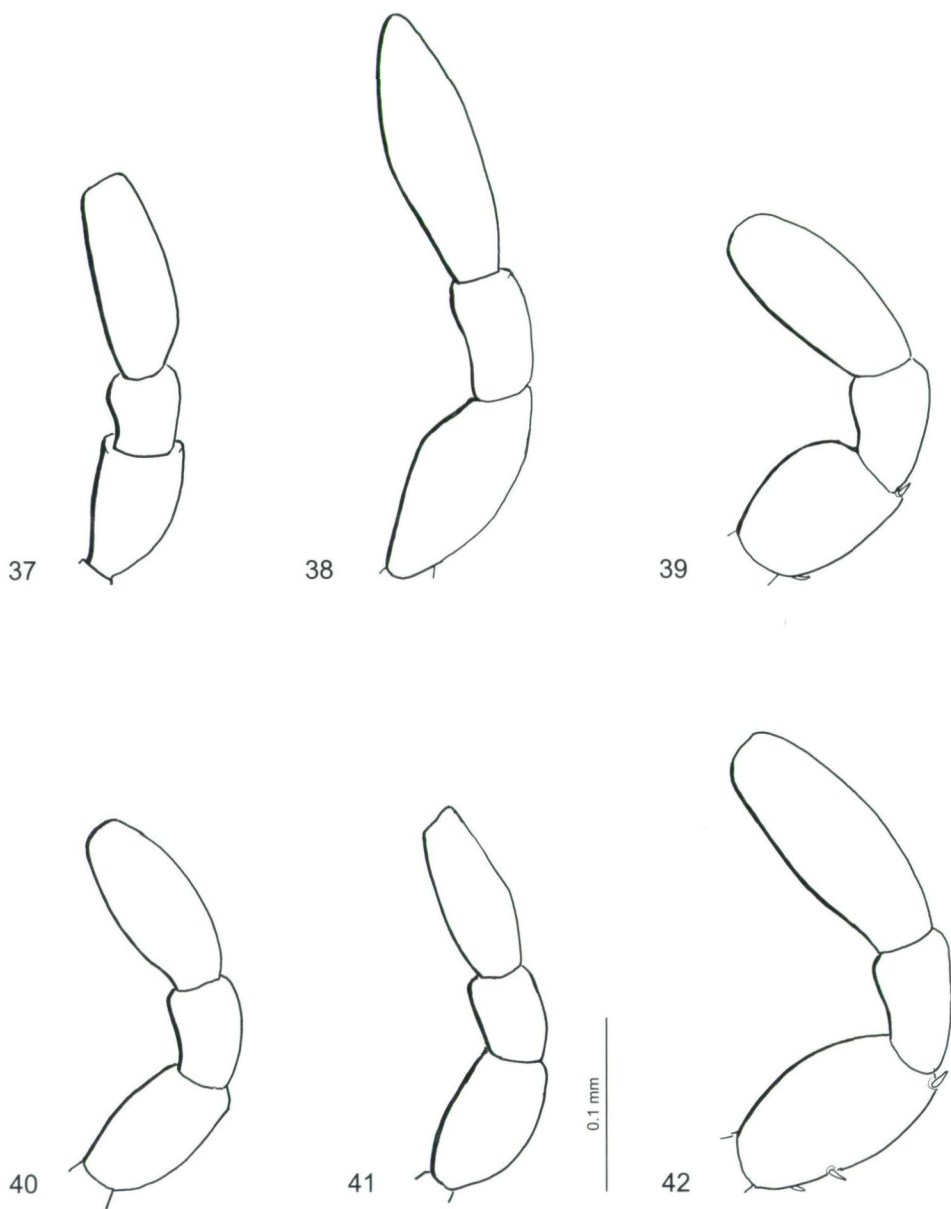
Figs. 10 - 13: Habitus (pronotum and caput slightly flexed dorsad, in order to show more details): 10) *Anacaena parvicristata*, 11) *A. polita*, 12) *A. reducta*, 13) *A. sucinea*.



Figs. 14 - 27: Clypeus, dorsal view: 14) *Anacaena angulata*, 15) *A. capensis*, 16) *A. fallax*, 17) *A. glabella*, 18) *A. glabriventris*, 19) *A. gracilipalpis*, 20) *A. lutea*, 21) *A. luticola*, 22) *A. mascarena*, 23) *A. parvicristata*, 24) *A. polita*, 25) *A. reducta*, 26) *A. sucinea*, 27) *A. tenella*.

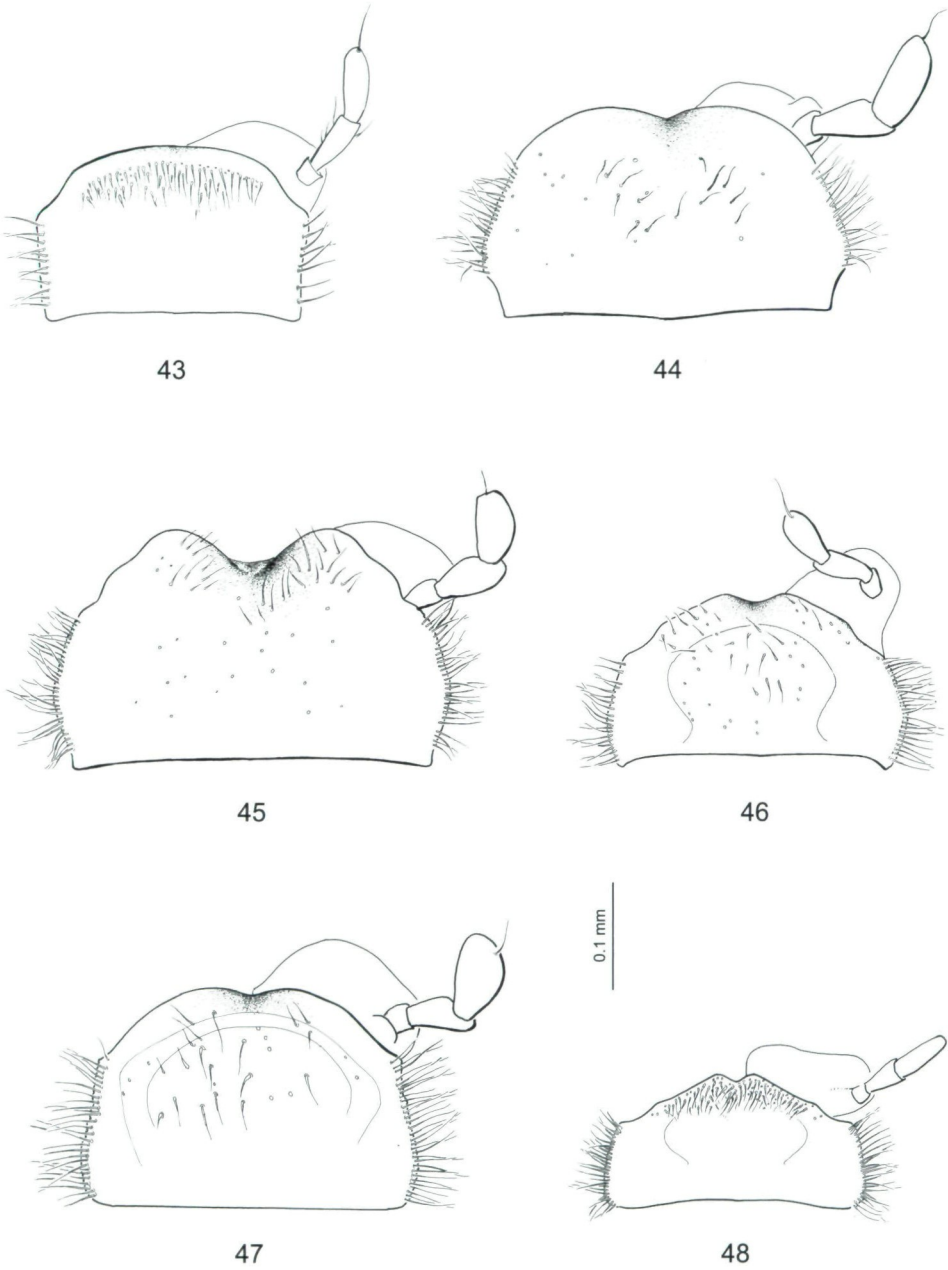


Figs. 28 - 36: Maxillary palpomeres: 28) *Anacaena angulata*, 29) *A. capensis*, 30) *A. fallax*, 31) *A. glabella*, 32) *A. glabriventris*, 33) *A. gracilipalpis*, 34) *A. lutea*, 35) *A. luticola*, 36) *A. mascarena*.

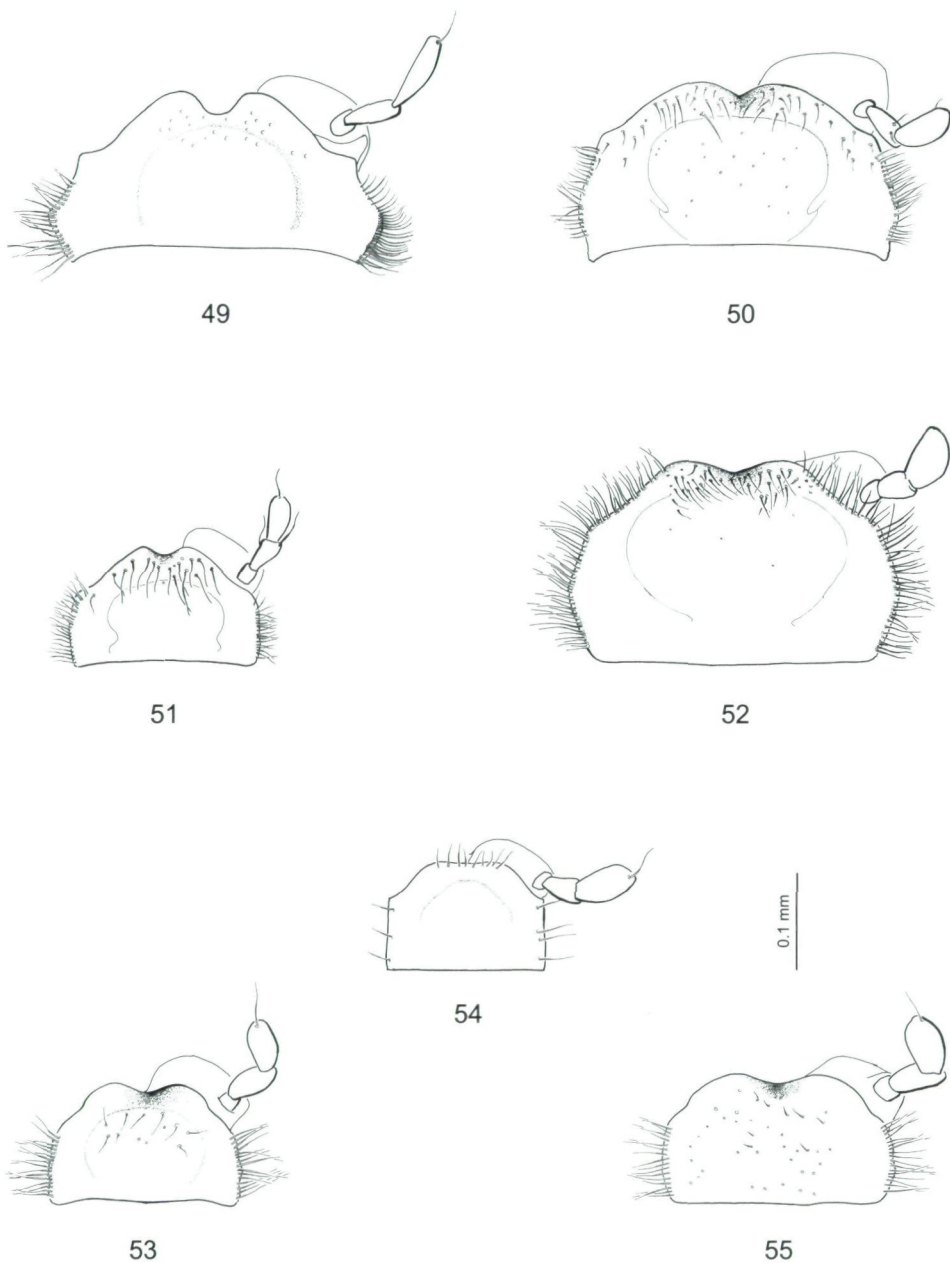


Figs. 37 - 42: Maxillary palpomeres: 37) *Anacaena parvicristata*, 38) *A. polita*, 39) *A. reducta*, 40) *A. sucinea* ♂, 41) *A. sucinea* ♀, 42) *A. tenella*.



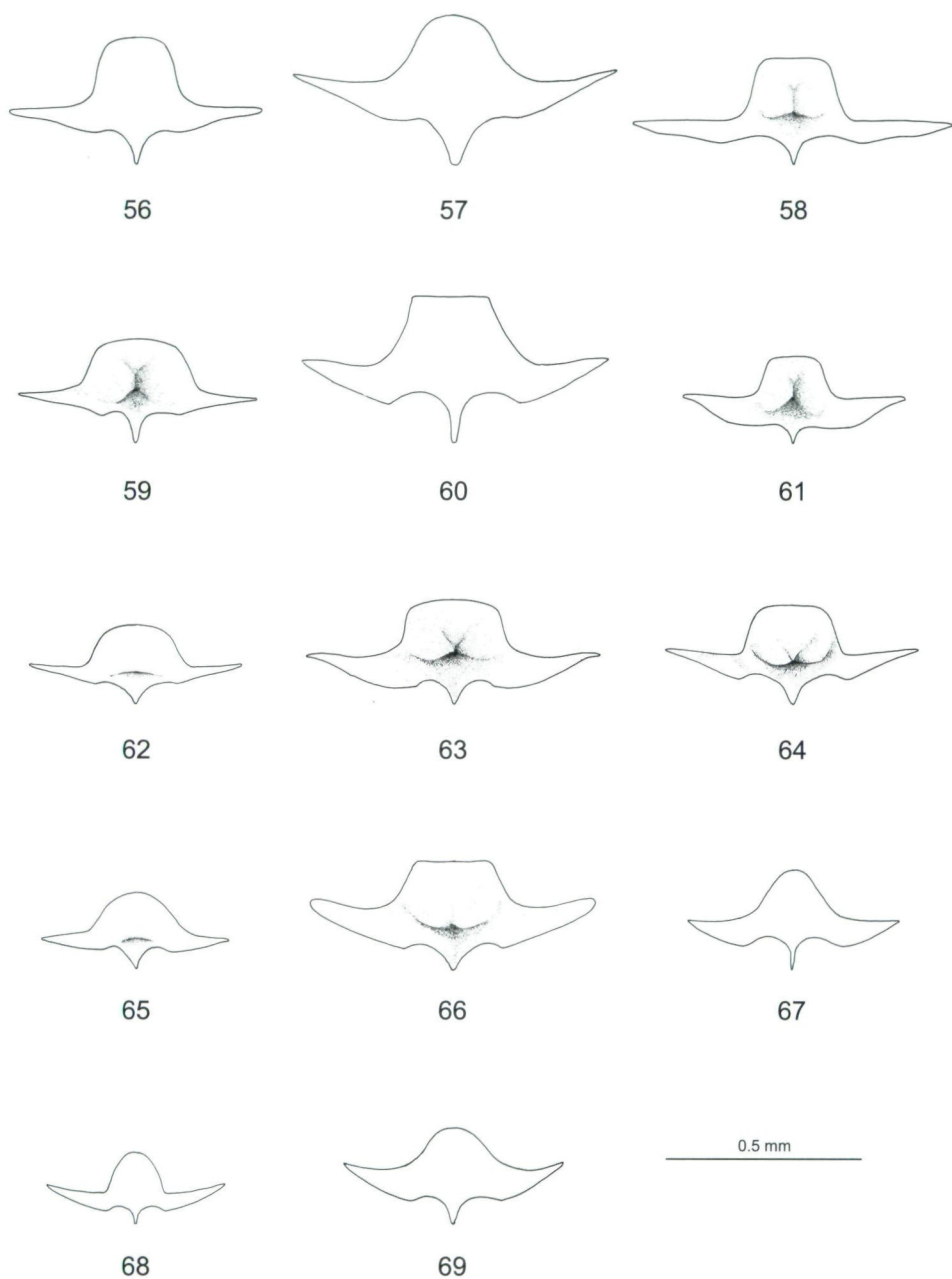


Figs. 43 - 48: Mentum and labium, ventral face: 43) *Anacaena angulata*, 44) *A. capensis*, 45) *A. fallax*, 46) *A. glabella*, 47) *A. glabriventris*, 48) *A. lutea*.

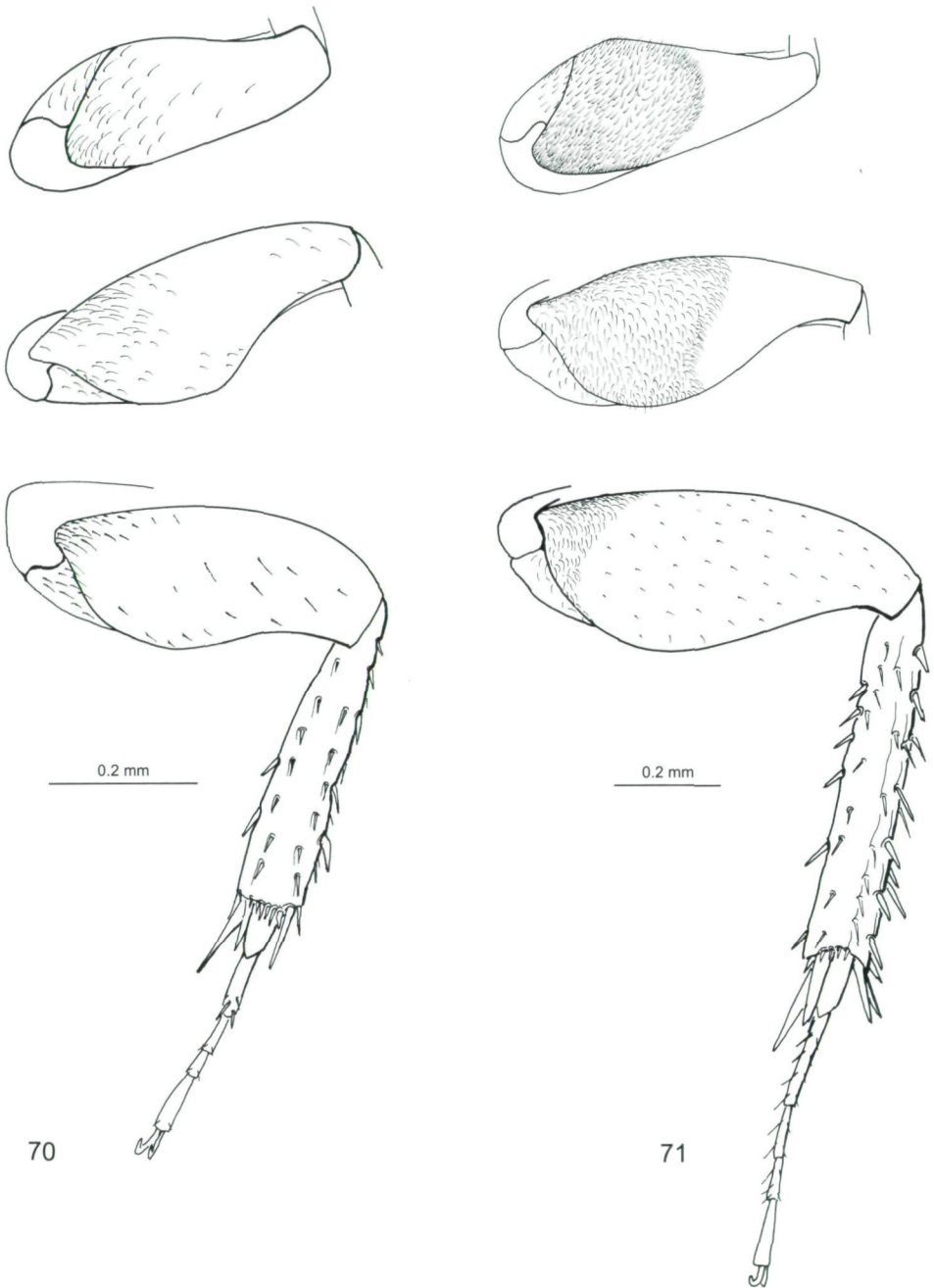


Figs. 49 - 55: Mentum and labium, ventral face: 49) *Anacaena luticola*, 50) *A. mascarena*, 51) *A. parvicristata*, 52) *A. polita*, 53) *A. reducta*, 54) *A. sucinea*, 55) *A. tenella*.

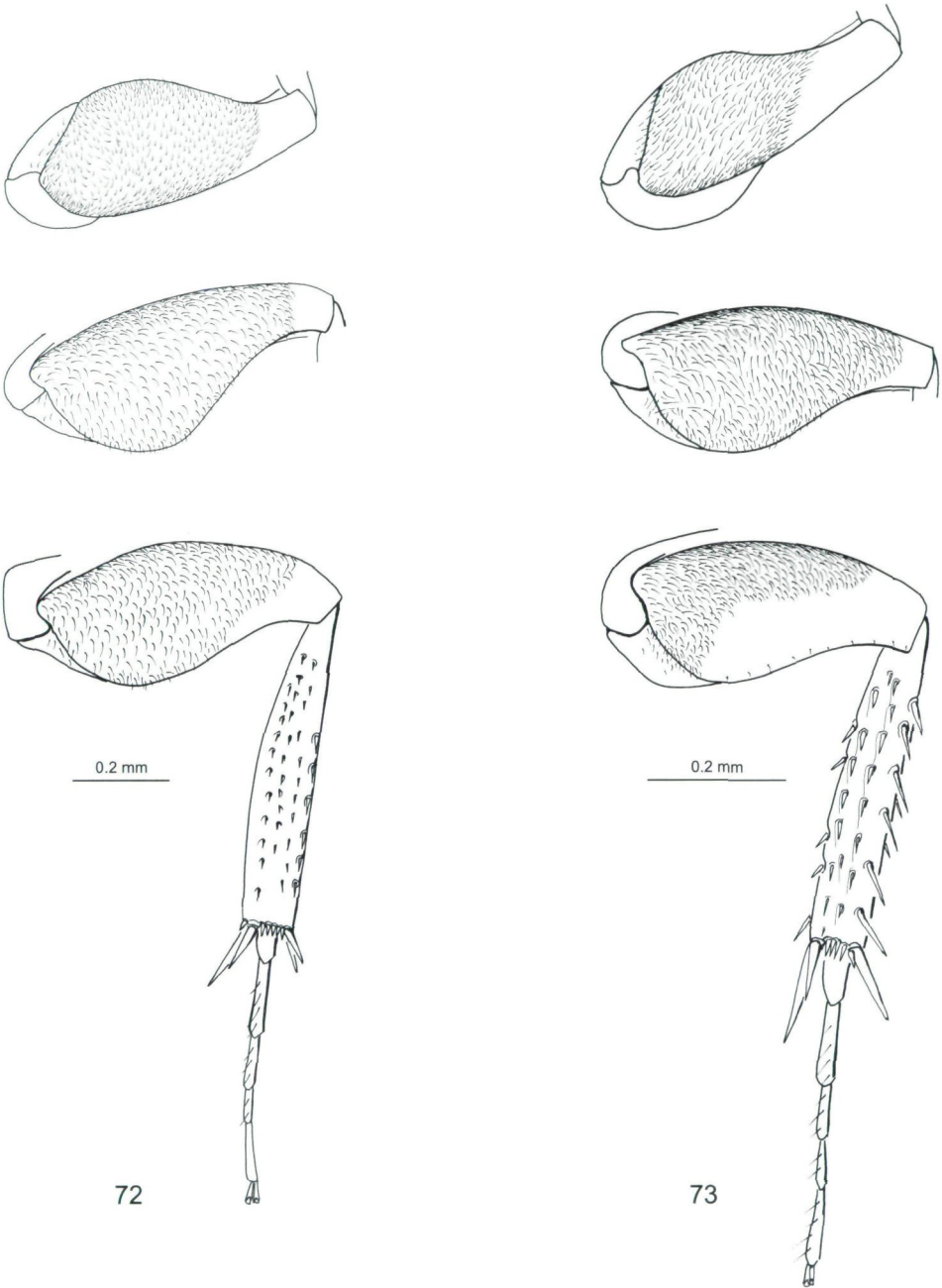




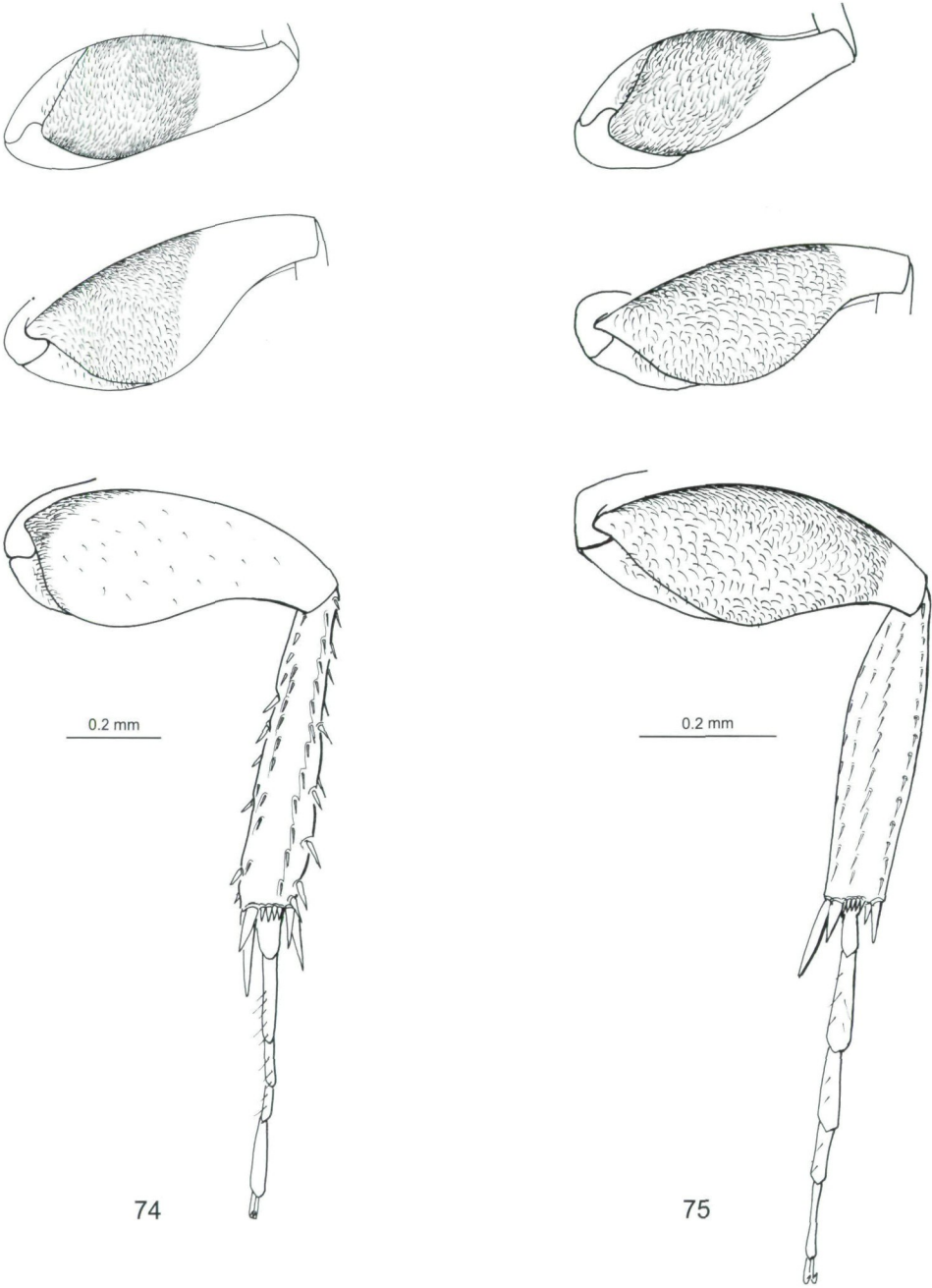
Figs. 56 - 69: Mesoventrites: 56) *Anacaena angulata*, 57) *A. capensis*, 58) *A. fallax*, 59) *A. glabella*, 60) *A. glabriventris*, 61) *A. gracilipalpis*, 62) *A. lutea*, 63) *A. luticola*, 64) *A. mascarena*, 65) *A. parvicristata*, 66) *A. polita*, 67) *A. reducta*, 68) *A. sucinea*, 69) *A. tenella*.



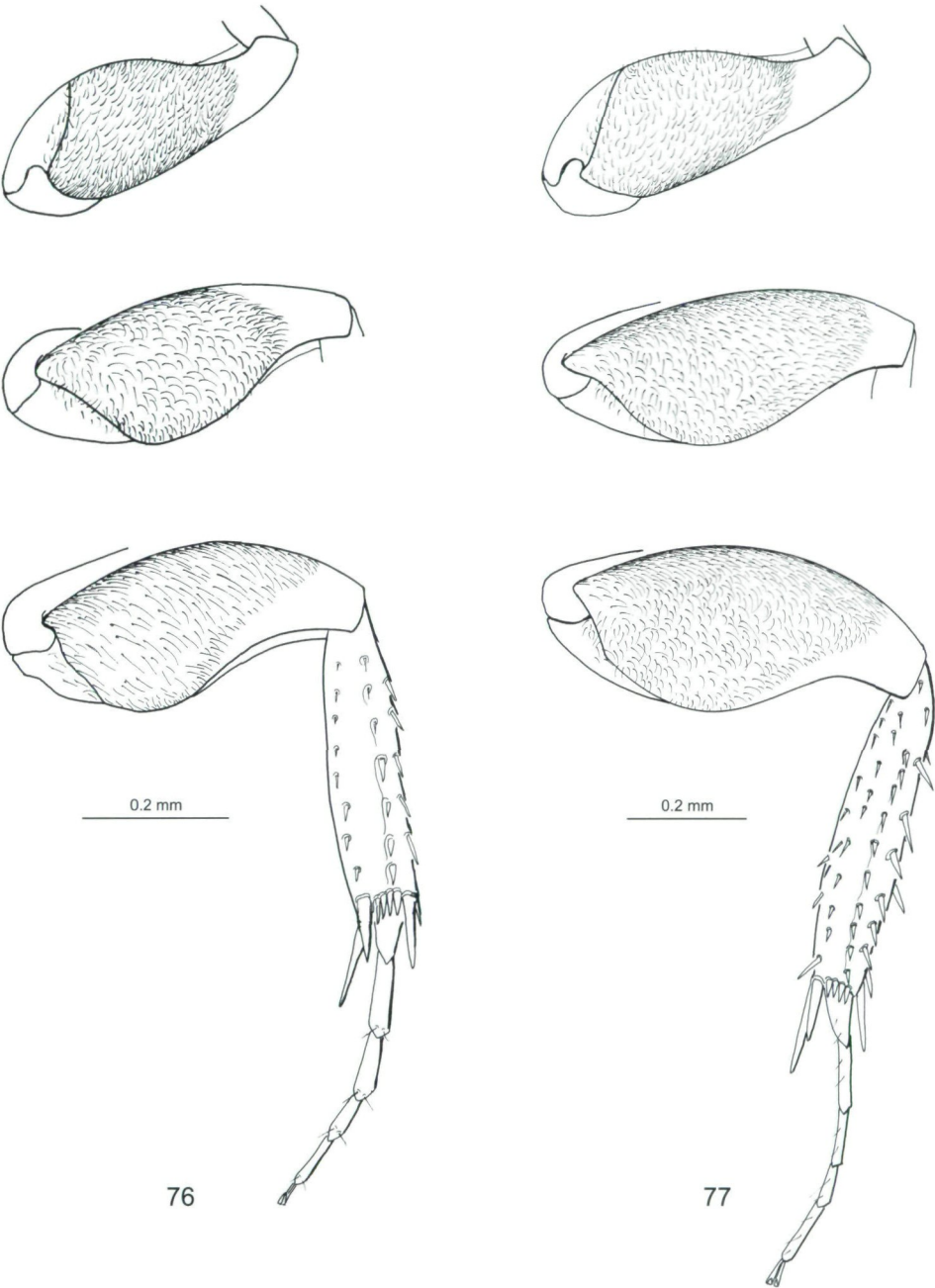
Figs. 70 - 71: Pro-, mesofemur, and hind leg, ventral face: 70) *Anacaena angulata*, 71) *A. capensis*.



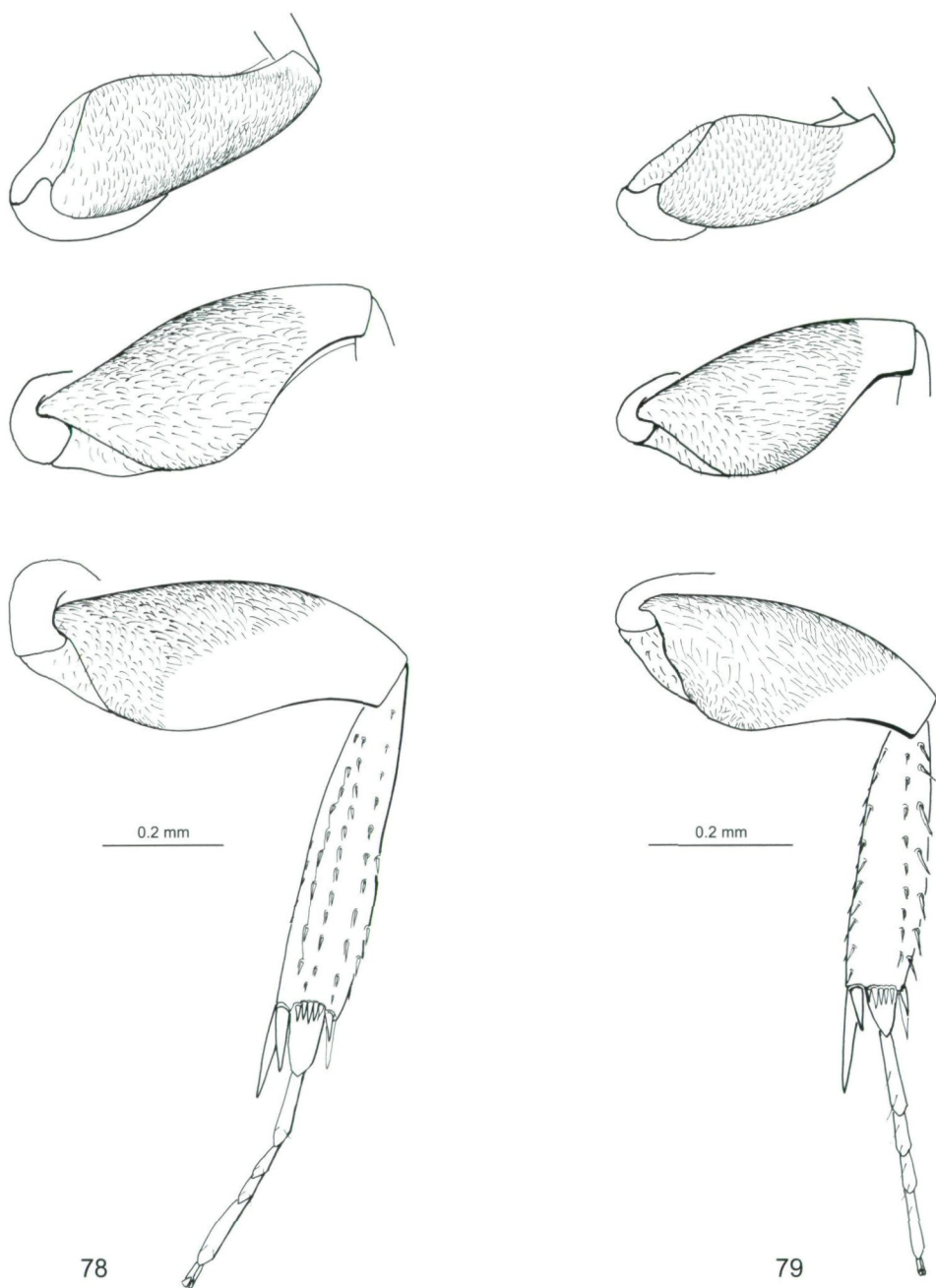
Figs. 72 - 73: Pro-, mesofemur, and hind leg, ventral face: 72) *A. fallax*, 73) *A. glabella*.



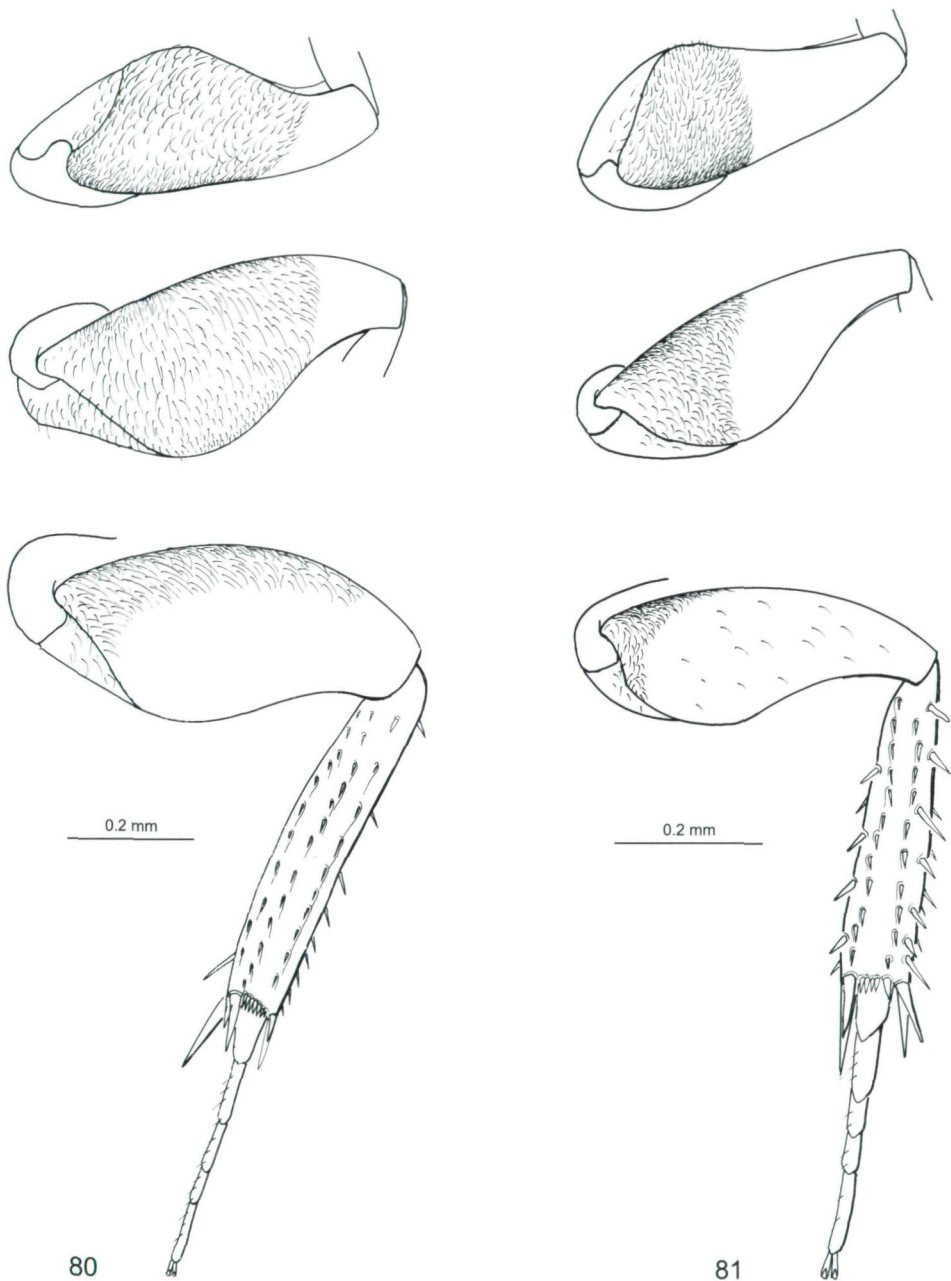
Figs. 74 - 75: Pro-, mesofemur, and hind leg, ventral face: 74) *A. glabriventris*, 75) *A. gracilipalpis*.



Figs. 76 - 77: Pro-, mesofemur, and hind leg, ventral face: 76) *Anacaena lutea*, 77) *A. luticola*.

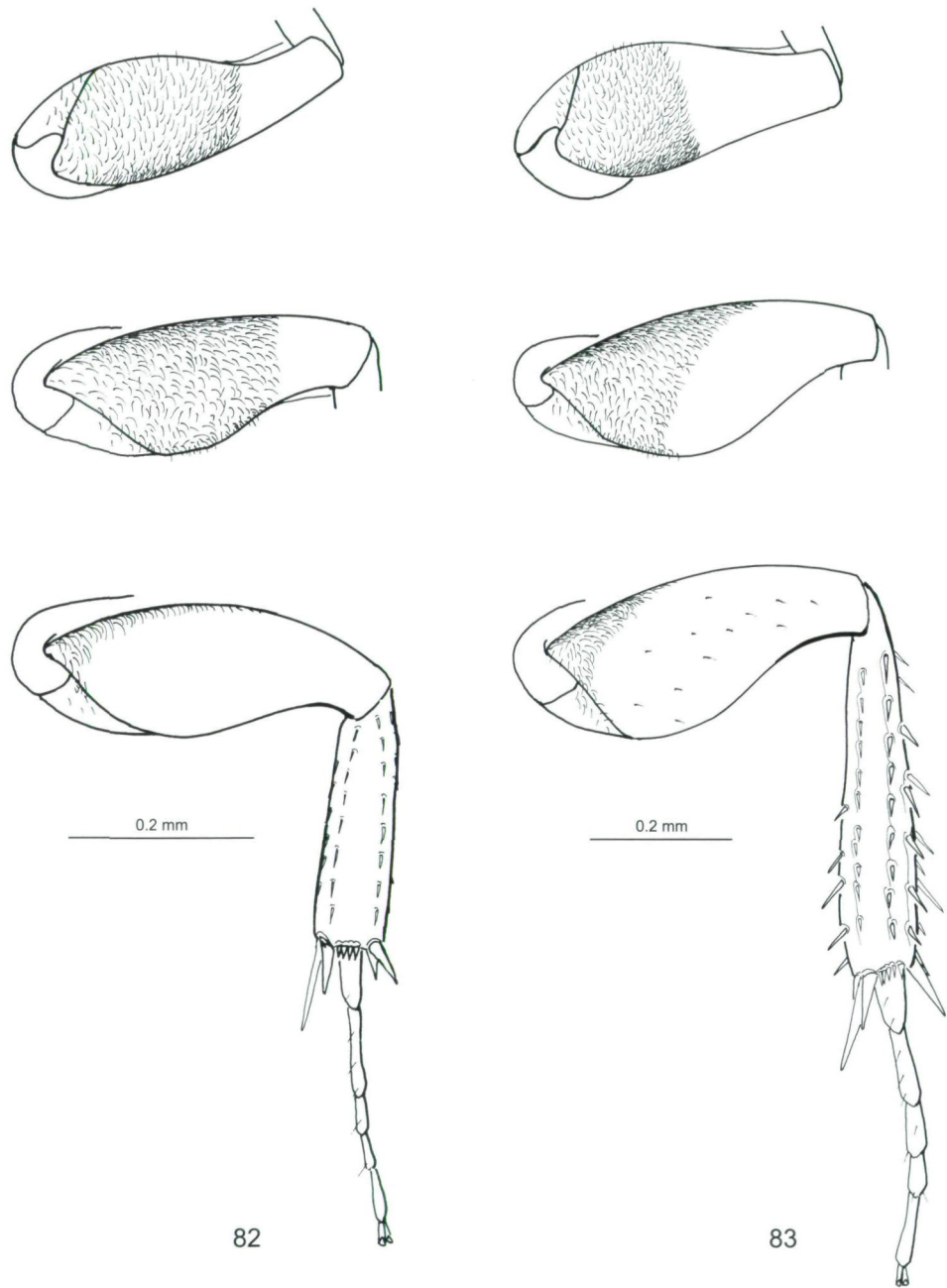


Figs. 78 - 79: Pro-, mesofemur, and hind leg, ventral face: 78) *Anacaena mascarena*, 79) *A. parvicristata*.



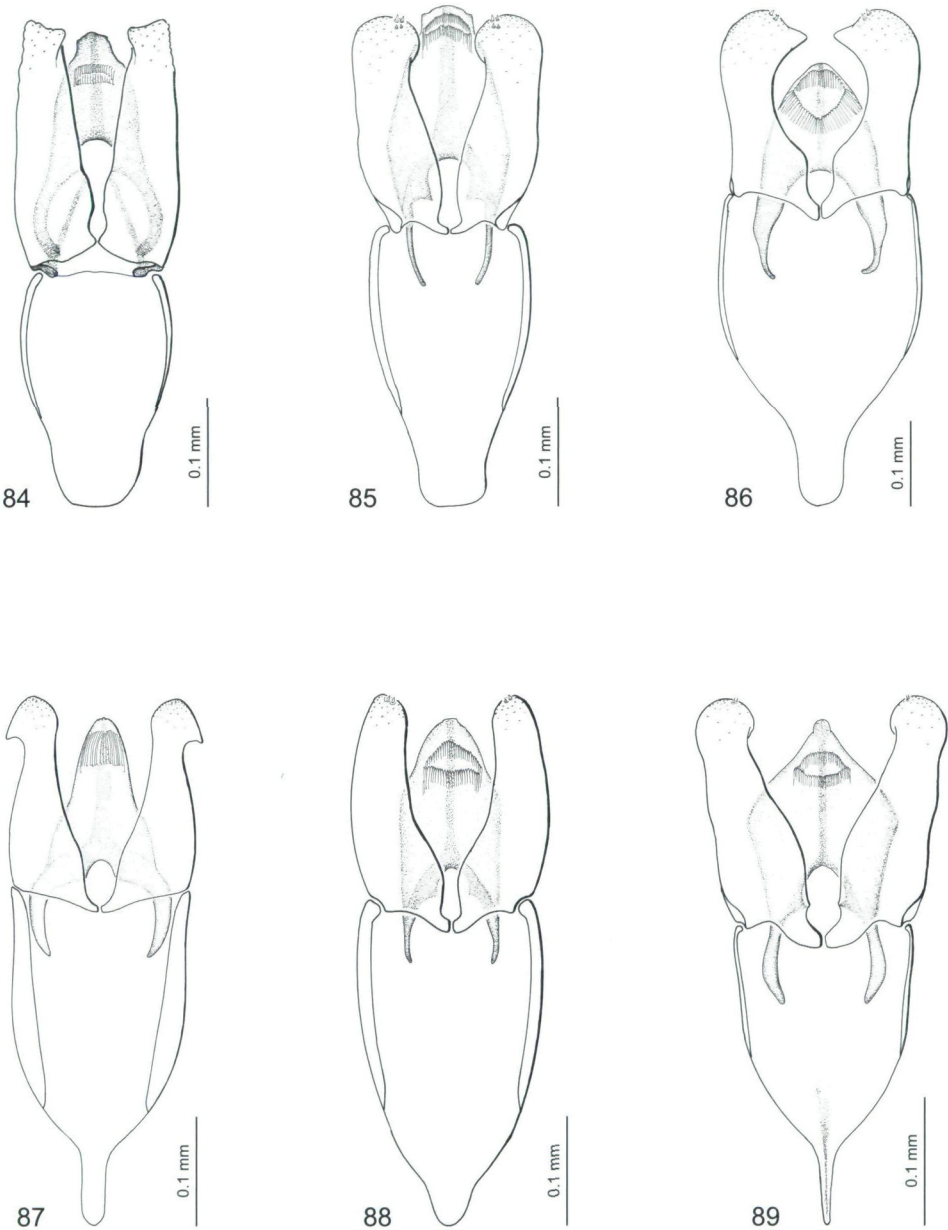
Figs. 80 - 81: Pro-, mesofemur, and hind leg, ventral face: 80) *Anacaena polita*, 81) *A. reducta*.



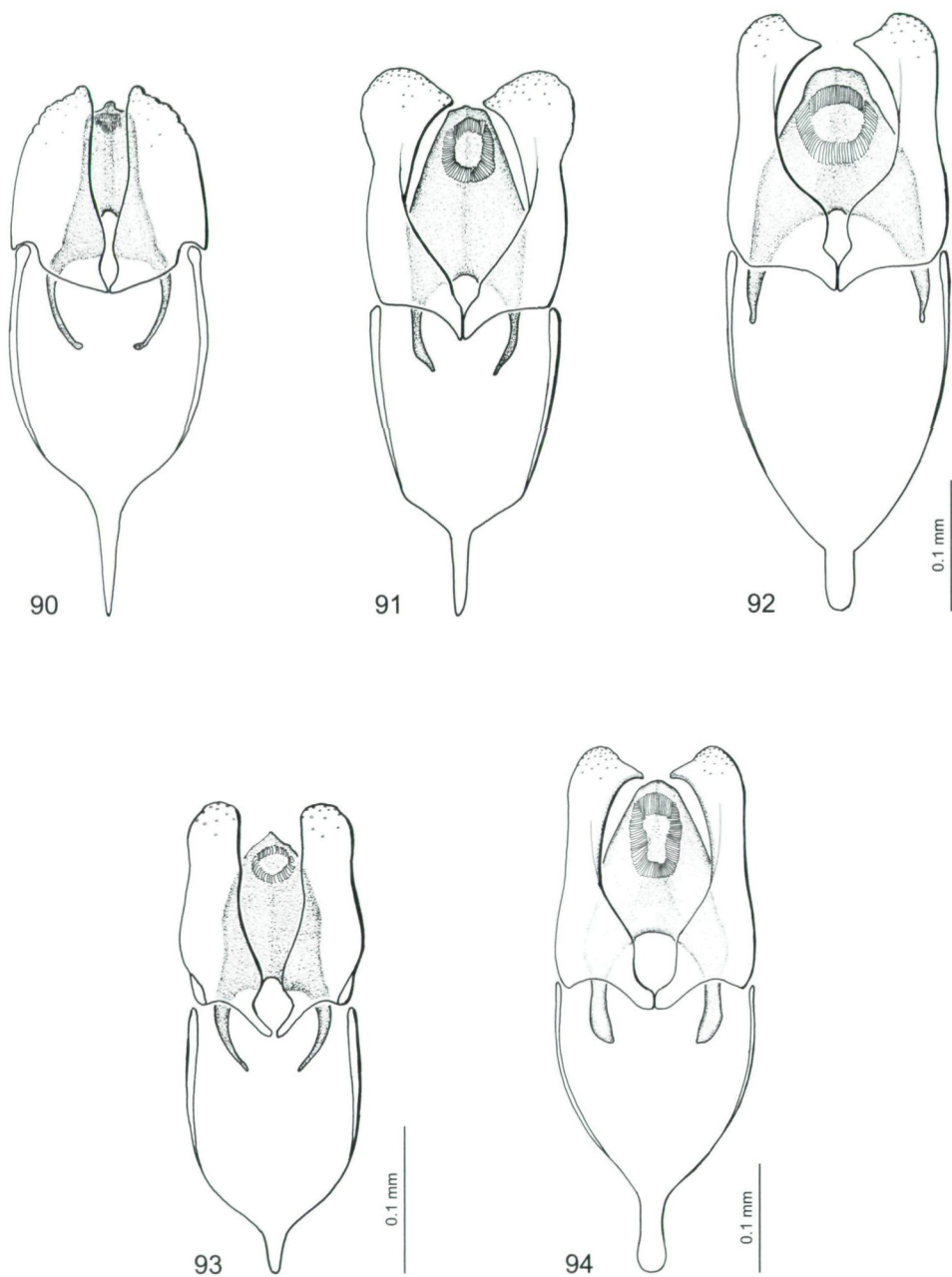


Figs. 82 - 83: Pro-, mesofemur, and hind leg, ventral face: 82) *Anacaena sucinea*, 83) *A. tenella*.

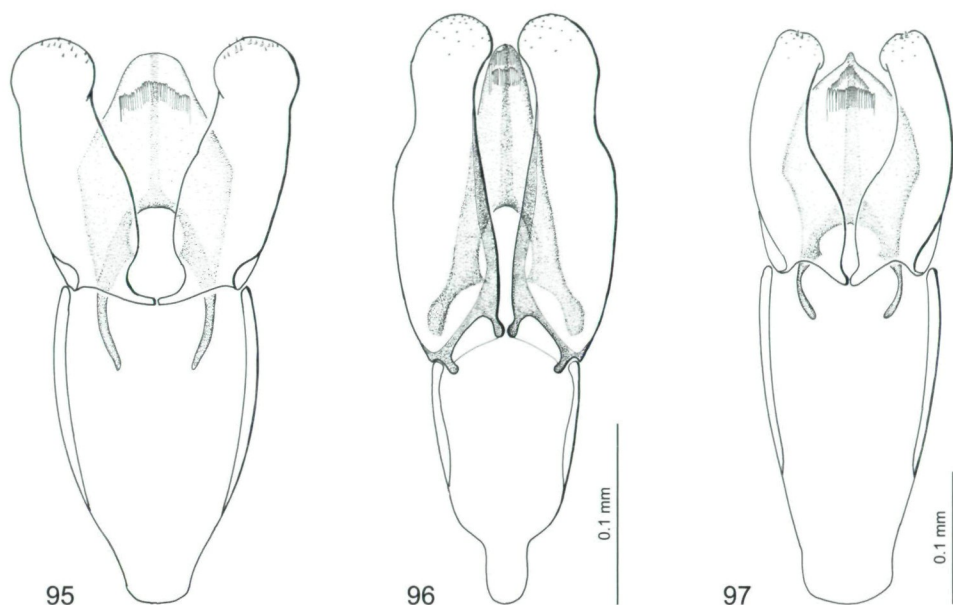




Figs. 84 - 89: Aedeagus: 84) *Anacaena angulata*, 85) *A. capensis*, 86) *A. fallax*, 87) *A. glabella*, 88) *A. glabriventris*, 89) *A. gracilipalpis*.



Figs. 90 - 94: Aedeagus: 90) *Anacaena lutea*, 91) *A. luticola*, 92) *A. mascarena*, 93) *A. parvicristata*, 94) *A. polita*.



Figs. 95 - 97: Aedeagus: 95) *Anacaena reducta*, 96) *A. sucinea*, 97) *A. tenella*.

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