

# A new species of *Anacaena* THOMSON, 1859 from Madagascar (Coleoptera: Hydrophilidae)

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## Abstract

A new species, *Anacaena schoenleithneri* sp.n. (Coleoptera: Hydrophilidae) is described from Madagascar. Habitus, aedeagus, and other morphological details are illustrated. A key to the species of *Anacaena* from Madagascar is presented.

**Key words:** Coleoptera, Hydrophilidae, *Anacaena*, new species, taxonomy, Afrotropical Region, Madagascar.

## Introduction

The wide-spread hydrophilid genus *Anacaena* THOMSON, 1859 currently comprises 19 species in the Afrotropical Region (HANSEN 1999, HEBAUER 1999, KOMAREK 2004, 2005, KOMAREK & BEUTEL 2007, BILTON & KOMAREK 2016), 11 of which are known from Madagascar. A twelfth species from Madagascar is described below.

## Material and methods

Male genitalia were dissected, placed in concentrated lactic acid and examined about 24 hours later. The specimens were examined using a binocular Leica MZ 12.5 with diffuse and focused light sources, and a light microscope Olympus BX 41. Measurements were taken using a micrometric eyepiece and an analyzing modul of Leica LAS 4.10.0. Drawings were made using CorelDRAW X8. Photographs were taken with Leica MC 170 HD in combination with LAS 4.10.0 and processed with Zerene stacking software and Adobe Photoshop. Tables were prepared with CorelDRAW X8 and Adobe Photoshop. The morphological terminology is based on KOMAREK (2004). Within the label data, square brackets “[...]” are used for remarks by the author, a slash “/” indicates the change of line, backslash “\” the change of label.

## Abbreviations:

EI	elytral index = relation of greatest elytral length to greatest elytral width
MHNP	Muséum national d’Histoire naturelle, Paris, France (T. Deuve, A. Mantilleri)
NMW	Naturhistorisches Museum Wien, Austria

## Checklist of the Madagascan species of *Anacaena*

1. *Anacaena angulata* KOMAREK, 2004
2. *Anacaena brunnea* (HANSEN, 1999)
3. *Anacaena fallax* KOMAREK, 2004
4. *Anacaena foveata* (KOMAREK, 2005)
5. *Anacaena gracilipalpis* KOMAREK, 2004
6. *Anacaena lutea* KOMAREK, 2004
7. *Anacaena luticola* HEBAUER, 2002
8. *Anacaena mascarena* HEBAUER, 2002

9. *Anacaena parvicristata* KOMAREK, 2004
10. *Anacaena polita* KOMAREK, 2004
11. *Anacaena schoenleithneri* sp.n.
12. *Anacaena sucinea* KOMAREK, 2004

***Anacaena schoenleithneri* sp.n.**

TYPE LOCALITY: Madagascar, Toliara Province, Anosy Region, Andohahela National Park.

TYPE MATERIAL: **Holotype** ♂ (MHNP): “Andohahelo [= Andohahela] / 1800m R P. [= Renaud Paulian] \ INSTITUT / SCIENTIFIQUE / MADAGASCAR”; both labels are printed. **Paratypes**: 4 ♂♂, 5 ♀♀ (MHNP, NMW): all four males and one female have the same printed labels as the holotype; in the remaining four females the locality label is handwritten and the date (“1.54.” [January 1954]) is also added.

DIFFERENTIAL DIAGNOSIS: The new species shares serial elytral punctures, eight antennomeres, and very fine to obsolete pronotal punctation with *A. angulata*, *A. brunnea*, *A. foveata*, *A. lutea*, and *A. sucinea*; strongly reduced metafemoral pubescence with *A. angulata*, *A. brunnea*, *A. foveata* and *A. sucinea*; triangularly projecting anterior edge of mentum with *A. brunnea* and *A. foveata* (the latter two species were originally described as *Enigmata* HANSEN, 1999).

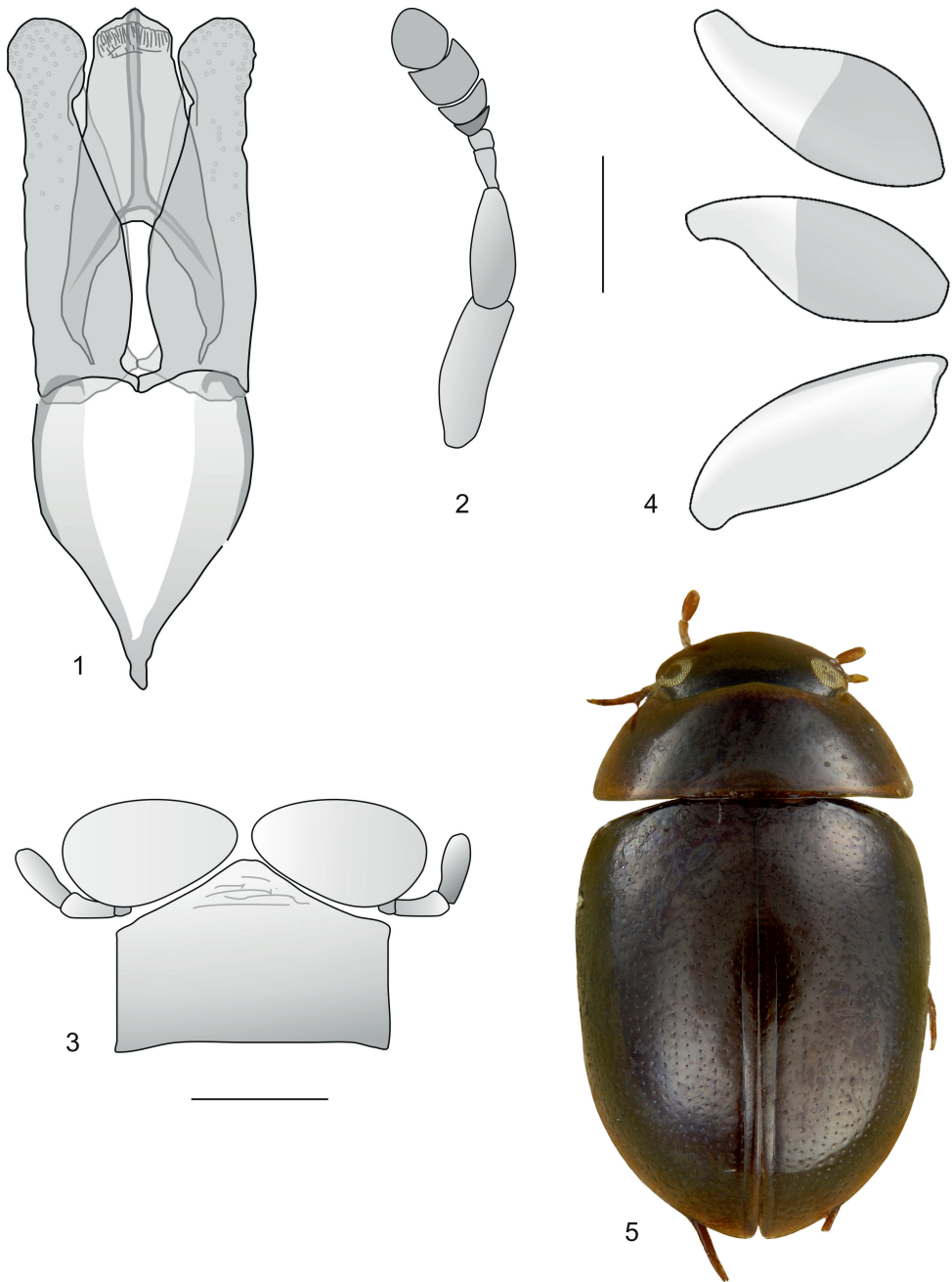
*Anacaena schoenleithneri* differs in black dorsal coloration of head, pronotum and elytra from *A. brunnea*, *A. lutea* and *A. sucinea*; in distinct anterior shortening of elytral stria from *A. brunnea* and *A. foveata*; in absence of angulate lateral projections of clypeus from *A. angulata*.

The new species differs from the very similar *A. foveata* (2.1–2.3 mm long) in larger size, absence of basal cavity on maxillary palpomere 2, and in the very different aedeagus (e.g., manubrium narrow, base of parameres less wide, apex of parameres inflated; median lobe shorter, apex reaching apex of parameres, basal apophyses not extending into phallobase, corona in apical position).

Serial elytral punctures are also present in *A. striata* (HANSEN, 1999), and *A. endroedyi* (HANSEN, 1999), both recorded from the Republic of South Africa and originally described as *Grodum* HANSEN, 1999. *Anacaena schoenleithneri* differs from the latter in eight antennomeres, absence of irregular ground punctures between serial elytral punctures, and in aedeagal features (e.g., inflated apex of parameres).

DESCRIPTION: Total length 2.5–3.0 mm, total width 1.5–1.7 mm, EI 1.3. Habitus (Fig. 5): distinctly convex dorsally, moderately wide, largest width approximately in midlength, elytra not attenuate apically.

Head: Labrum, clypeus and frons black, lateral margins of clypeus very indistinctly brightened. Ventral coloration of head largely dark brown. Ground punctures fine, distinctly impressed, spaces on average more than three times as wide as punctures, more dense on anterior margin of clypeus. Microsculpture absent. Clypeus very short anterior to eyes, anterior edge very slightly concave. Frontoclypeal suture very indistinct in lateral third, not visible mesally. Eyes small, not protruding, distinctly constricted anteriorly by clypeal margin, ventral portion smaller than dorsal portion. Antenna (Fig. 2) with eight antennomeres. Maxillary palpi stout, ca. 0.3 times as long as largest width of clypeus; palpomeres unicolored dark yellow, palpomere 2 distinctly inflated; lengths of palpomeres 2–4: 0.11 mm, 0.08 mm, 0.13 mm. Mentum (Fig. 3) flat with almost straight lateral margins, slightly impressed anteriorly, anterior edge triangularly projecting; ventral face not punctate, microsculpture absent. Labial palpi moderately slender, elongate, slightly longer than lateral edge of mentum.



Figs. 1–5: *Anacaena schoenleithneri*, holotype, 1) aedeagus, 2) antenna, 3) mentum, 4) pubescence of pro-, meso- and metafemur, 5) habitus. Scale bars: 0.1 mm.

Thorax: Pronotum black, with slightly brightened lateral margins. Ventrites dark brown. Pronotal ground punctures almost obsolete. Prosternum almost flat, carina absent. Elytra and scutellum black. Setae absent from lateral borders of pronotum and elytra. Weak callosity present at shoulders. Sutural stria present on slightly more than posterior half of elytra in dorsal view. Elytral punctures fine to moderately strong, distinctly impressed, with distinct serial arrangement in posterior three fourths, irregular punctures between series absent; punctures stronger in lateral than in mesal series; punctuation finer and irregularly distributed in anterior fourth. Microsculpture absent. Mesoventrite slightly convex, process absent. Hind wings well developed.

Legs dark yellowish brown. Procoxae without spine-like setae. Femoral pubescence (Fig. 4): Profemur pubescent on about proximal half with straight hairline, mesofemur on proximal half with slightly oblique hairline; metafemoral pubescence reduced to a narrow stripe at mesal half of anterior margin and to proximal portion, adjacent to metatrochanter. Metatibia with strong spines on lateral face. Distal spurs slender, longer mesal spur reaching to halflength of tarsomere 2. Metatarsus shorter than metatibia.

Abdominal ventrites dark brown, entirely pubescent, ventrite 5 not emarginate apically.

Aedeagus (Fig. 1): Length: 0.46–0.50 mm. Phallobase shorter than parameres, longer than wide, evenly narrowing to moderately long manubrium; borderline between unpigmented and pigmented part of ventral face of phallobase almost reaching manubrium. Parameres slender with sigmoidal margins; basal portion fused dorsally and ventrally, not extending into phallobase; apex evenly rounded, inflated. Median lobe wider than parameres, evenly narrowing to broadly rounded, blunt apex, reaching apex of parameres; corona in apical position; basal apophyses about as long as main piece of median lobe, without extension into phallobase.

DISTRIBUTION: Madagascar.

ETYMOLOGY: This species is named after Wolfgang Schönleithner †, formerly volunteer collaborator in the NMW, water beetle enthusiast and exceptionally likeable person (see pp. 303–308 in this volume), who has left us much too early.

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

- 1 Mentum triangularly projecting anteriorly; prementum very large; eight antennomeres; elytra with serial punctures; metafemur with strongly reduced pubescence ..... 2
- Anterior margin of mentum evenly rounded, with or without mesal emargination; prementum moderately sized; eight or nine antennomeres; elytra with or without serial punctures; metafemora with extended or with strongly reduced pubescence ..... 4
- 2 Body length 2.5–3.9 mm; maxillary palpomere 2 without basal cavity ..... 3
- Body length 2.1–2.3 mm; maxillary palpomere 2 with basal cavity ..... *foveata*
- 3 Dark reddish brown dorsally; sutural stria present in almost entire length; irregular ground punctures present between serial punctures; body length 3.9 mm ..... *brunnea*
- Black dorsally; sutural stria distinctly abbreviated anteriorly; without irregular punctures between serial punctures; body length 2.5–3.0 mm ..... *schoenleithneri*
- 4 Clypeus with angular lateral extension; femora without distinct hairline ..... *angulata*
- Clypeus without angular lateral extension; femora with distinct hairline ..... 5
- 5 Eight antennomeres; clypeus without distinct preocular patches; pronotum without darker central patch; mesoventrite with low horizontal ridge or flat ..... 6
- Nine antennomeres; clypeus with distinct or indistinct preocular patches; pronotum with or without darker central patch; mesoventrite with conspicuous mesal protuberance ..... 8

- 6 Maxillary palpomere 4 not infuscated, of same color as palpomeres 1–3; head light brown; pronotal punctures obsolete; elytral punctures seriate posteriorly; aedeagus: manubrium long, spine-like, apex of parameres narrowed ..... *lutea*
- Maxillary palpomere 4 partly or entirely infuscated; head brown or black; pronotal punctures obsolete to fine; elytral punctures subseriate or irregular posteriorly; aedeagus: manubrium moderately short, not spine-like, apex of parameres broadly rounded ..... 7
- 7 Mesoventrite with a low transverse ridge; metafemora pubescent on proximal two thirds; pronotal punctures very fine, almost obsolete; elytral punctures moderately coarse, irregular posteriorly; aedeagus: parameres without strong lateral indentation, basal lobe as long and as wide as parameres ..... *parvicristata*
- Mesoventrite flat, without ridge; metafemoral pubescence confined to extreme proximal portion; pronotal and elytral punctures fine to moderately coarse, with subserial arrangement posteriorly; aedeagus: parameres with strong lateral indentation, basal lobe smaller than parameres ..... *sucinea*
- 8 Head black; maxillary palpomere 4 partly or entirely infuscated; total body length 2.0–2.2 mm; apex of parameres without mesal extension ..... *gracilipalpis*
- Head brown; maxillary palpomere 4 yellowish like palpomeres 1–3 or infuscated; total body length 2.2–3.0 mm; apex of parameres with sharply pointed mesal extension ..... 9
- 9 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 ..... *polita*
- Clypeus with distinct yellow preocular patches; pronotum brown with darker central patch; pronotal punctures obsolete, fine, or coarse; metafemoral pubescence present on at least proximal half ..... 10
- 10 Lateral margin of clypeus not longer than diameter of eye; elytra without longitudinal stripes; elytral punctures very fine ..... *luticola*
- Lateral margin of clypeus longer than diameter of eye; elytra with longitudinal stripes; elytral punctures coarse ..... 11
- 11 Lateral margin of clypeus distinctly longer than diameter of eye, with distinct anterior angles; pronotal and elytral punctures equally coarse; metafemoral pubescence widely extended, with horizontal hairline ..... *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 restricted to proximal half, with oblique hairline ..... *mascarena*

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