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A new species of *Coelometopon* Janssens from the Wild Coast of South Africa (Coleoptera: Hydraenidae)

Una nueva especie de *Coelometopon* Janssens de la Wild Coast de Sudáfrica (Coleoptera: Hydraenidae)

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ABSTRACT

Coelometopon riberiae **sp. nov.** is described from Mkambati Nature Reserve, on the Wild Coast Region of the Eastern Cape Province, South Africa. Notes are provided to distinguish the new species from other members of this strictly madicolous genus.

Key words: Coleoptera, Hydraenidae, *Coelometopon*, new species, South Africa, ecology.

RESUMEN

Se describe *Coelometopon riberiae* **sp. nov.** de la reserva natural de Mkambati, en la región de Wild Coast de la provincia de Eastern Cape, Sudáfrica. Se aportan datos para distinguir la nueva especie de otros miembros del género que es estrictamente madícola.

Palabras clave: Coleoptera, Hydraenidae, *Coelometopon*, nueva especie, Sudáfrica, ecología.

INTRODUCTION

Madicolous habitats (VAILLANT, 1956) support a specialised, and often poorly known water beetle fauna in many parts of the world, with many new species and even families having been discovered in recent years (e.g. RIBERA *et al.*, 2002; RIBERA & BILTON, 2007; SPANGLER &

STEINER, 2005; BALKE *et al.*, 2008; HÁJEK & FIKÁČEK, 2008; CLARKSON & SHORT, 2012; FIKÁČEK *et al.*, 2012). South Africa supports a diverse madicolous beetle fauna, particularly of Hydraenidae (e.g. PERKINS & BALFOUR-BROWNE, 1994; BILTON, 2014; 2015; 2016). *Coelometopon* Janssens, 1972 is a strictly madicolous hydraenid genus, restricted to southern and eastern Africa, most species being endemic to South Africa (PERKINS, 2005). Here *Coelometopon riberiae* **sp. nov.** is described, following our recent fieldwork in the Eastern Cape province. Comparative notes are provided which will allow the new species to be distinguished from its congeners, together with a brief description of the ecology of the new species.

MATERIALS AND METHODS

Beetles were collected by hand from wet rock faces. Specimens were studied using a Leica MZ8 stereomicroscope, with a Fluopac FP1 fluorescent illuminator. Habitus photographs were taken with a Canon EOS 600D camera fitted to a Leica Z6 Apo macroscope, fitted with a 2x objective lens. Specimens were illuminated using a Leica LED5000 HDI dome illuminator to avoid shadow.

Genitalia were mounted on glass slides in Kisser's glycerol gelatine (see RIEDEL, 2005) and imaged using an Olympus CX31 microscope with the same camera. All image stacks were produced by hand, and combined using Zerene Stacker software (www.zerene.com).

Exact label data are cited for specimens.

ABBREVIATIONS

AMG	Albany Museum, Grahamstown, South Africa
CDTB	Collection D.T. Bilton, Plymouth, UK
NMW	Naturhistorisches Museum Wien, Vienna, Austria
ISAM	South African Museum, Cape Town, South Africa
SANC	South African National Collection of Insects, Pretoria, South Africa
TMSA	Ditsong Museum (former Transvaal Museum), Pretoria, South Africa
TL	Total length (labrum to elytral apex)
EL	Elytral length
MW	Maximum width

TAXONOMY

Coelometopon riberae sp. nov.

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Type material: Holotype: ♂ “7/ix/2019 South Africa EC, Mkambati Nature Reserve, beside Horseshoe Falls on Mkambati River, wet rock face, D T Bilton leg.” (genitalia extracted and mounted on same card) and red holotype label (AMG).

Paratypes: 11 ♂, 14 ♀. Same data as holotype (AMG, CDTB, NMW, ISAM, SANC, TMSA). All with red paratype labels.

Description: Measurements: Holotype TL = 2.15 mm; EL = 1.40 mm; MW = 0.95 mm. Paratype males TL = 1.95–2.35 mm; EL = 1.30–1.75 mm; MW = 0.90–1.05 mm. Paratype females TL = 2.00–2.50 mm; EL = 1.35–1.60 mm; MW = 0.95–1.10 mm.

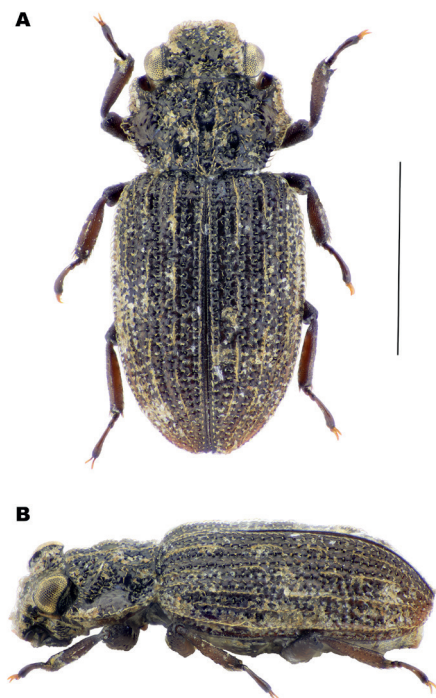


Fig. 1. Habitus of *Coelometopon riberae* sp. nov. Holotype: A) dorsal; B) lateral. Scale bar = 1 mm.

Fig. 1. Hábitus de *Coelometopon riberae* sp. nov. Holotipo: A) dorsal; B) lateral. Escala = 1 mm.

Dorsum (Fig. 1) dark brown to black, legs dark to reddish brown, tarsi and femoro-tibial junctions darker; claw paler. Maxillary palpi dark brown to black. Antennal club black, stem segments paler brown. Venter brown to dark brown. Head broadly triangular, broadest at hind margin of eyes and narrowing to labral apex. Eyes slightly raised, protruding, and occupying approximately 1/3 of side margin of head. Labrum transverse, with very shallow, semicircular apicomedian emargination. Anterior and lateral margins evenly rounded. Upper surface of labrum shining, devoid of microreticulation and with scattered tubercles and curved, decumbent setae, especially around anterior projections. Clypeus with front angles produced and front margin arcuate. Dorsal surface shining with sparse granules, each bearing curved setae. Frontoclypeal suture arcuate, distinctly impressed. Frons and vertex granulate, granules denser than on clypeus and larger in posterior half of vertex. Each granule bearing a short curved seta. Setae stouter and longer in front of and around interior margins of eyes. Small reddish-brown ocellus visible interior to each eye, in posterior part of vertex. Pronotum transverse, cordiform, broadest at middle. Sides acutely produced at widest part, narrowing strongly to protruding front angles, and weakly emarginated in front of and behind middle. Hind angles obtuse. Front margin broadly sinuate in middle half, then strongly curved forwards to front angles. Hind margin sinuate around acuminate middle. Central part strongly granulate, granules larger and denser in front half, where they are spaced approximately one granule's width apart. Granules sparser and almost absent on marginal sections. Each granule bearing a long curved yellowish seta. Median longitudinal furrow of disc shallow, somewhat interrupted in middle. Anterior and posterior admedian fovea shallow, anterior fovea opening anterolaterally. Anterior adlateral fovea shallow and broadly open laterally; posterior adlateral fovea deeper, opening laterally to pronotal margin. Dorsal surface of pronotum shining, without microreticulation. Elytra elongate, widest approximately in the middle, where pseudopileura formed from 8th interval is broadest. Sides almost parallel-sided behind this widest point, weakly narrowing to posterior 1/5, and then strongly rounded to conjointly weakly emarginated apex. Sides of elytra granulate, granules spaced ½–1 granule's width apart, and bearing long, curved, yellow setae. Elytra with some intervals bearing low costae, all costae with rows of long, golden setae. Costae most strongly raised on interval 2; less so on intervals 4 & 6. Second elytral interval costate in 3–4 sections. Interval 4 costate in 4–6 sections. Costae very low posteriorly, but row of setae reaching elytral apex. Interval 5 with setae at shoulder. Interval 6 with 3 weak costae. Interval 7 raised slightly throughout, with row of short, decumbent yellow setae. Intervals 1 and 3 flat with similar granules and setae. Mentum transverse, produced apicomediaally and with broad, shallow depression posteriorly either side of midline. Shining, with weak, transverse microreticulation and sparse medium punctures bearing decumbent white setae. Submentum triangular, shining, without microreticulation. Prosternum with low median ridge anterior to procoxae; dull, with scale-like vestiture. Pronotal hypomera broad, shining, with small, sparse granules. Elytral epipleura and pseudopipleura shining; pseudopipleura broad, especially around anterior 1/3, but continued to approximately 1/8 from apex. Mesoventrite shining, with microscopic scale-like vestiture; raised into small projection between mesocoxae. Metaventrite shining, with weak isodiametric microreticulation towards sides. With shallow elongately oval central depression occupying posterior half of ventrite. Area around and in front of depression with close, medium punctures, each bearing a long, white recumbent seta. Sides of shining part of metaventrite with sparse but very coarse punctures, bearing shorter, decumbent setae. Abdominal ventrite 1 with strong oblique carina behind each coxa. Abdominal ventrites 1–6 shining, with weak isodiametric microreticulation. Ventrites 1–5 with loose transverse rows of punctures bearing long whitish decumbent setae. Ventrite 6 with punctures and setae throughout. Aedeagus (Fig. 2) elongate, main piece nearly straight in ventral aspect; similar in lateral aspect; ridged process elongate, curved to left in ventral view; gonopore process curved strongly towards the apex in lateral view; membranous process very small, at base of gonopore process. Parameres reaching angular process, and with thickened, rounded apices bearing long bristles. Females slightly larger than males – see above. Venter more strongly reticulate; prosternum and mesosternum dull, the latter with a distinct

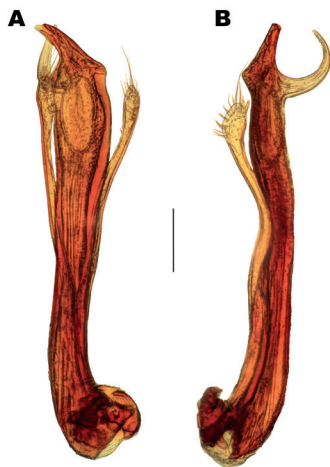


Fig. 2. Aedeagus of *Coleometopon riberiae* sp. nov. Holotype: A) ventral; B) lateral. Scale bar = 100 μ m.

Fig. 2. Edeago de *Coleometopon riberiae* sp. nov. Holotipo: A) ventral; B) lateral. Escala = 100 μ m.

central depression and lateral pits. Pseudepipleuron of elytral interval 8 broader than in males. Last ventrite with small but distinct apicomedian emargination and a flattened, triangular impression in centre. Last tergite strongly bilobed, each lobe bearing a group of 4–6 short, stout spines.

Variation: Some variation in colour across the type series, with some specimens appearing paler than the holotype due to tenerality. Dorsal setae, and granulation weaker on darker (older?) individuals, the pronotum in particular appearing to have large, shining, non-granulate areas posterolaterally on the disc.

Etymology: Named after our sadly departed friend and colleague, Ignacio Ribera, who contributed greatly to our knowledge of Hydraenidae and madicolous beetles.

Diagnosis: A member of the *endroedyi* group of *Coelometopon* (see PERKINS, 2005), with pronotal granulation sparse, especially laterally. Elytral interval 1 with longitudinal granule/setal row throughout its length; intervals 3 and 5 with granule/setal rows interrupted three times on disc; interval 7 with row of granules/setae interrupted once just behind middle; edge of interval 8 with unilinear row of granules. Aedeagus characteristic. The new species would key to *Coelometopon zulu* Perkins, 2005 in PERKINS (2005). It can be distinguished from *C. zulu* by the sparser granulation of the pronotum, especially laterally. The aedeagus of *C. riberiae* sp. nov. differs from *C. zulu* in the more elongate and pointed shape of the ridged process in lateral view as well as the different curvature of the main piece.

DISTRIBUTION

Known only from the type locality (Fig. 3), on wet rock faces beside Horseshoe Falls on the Mkambati River in Mkambati Nature Reserve, Eastern Cape, South Africa. Mkambati is on the Pondoland Wild Coast, whose sandstones and forested gorges support a high number of endemic taxa (VAN WYK & SMITH, 2001; MUCINA *et al.*, 2006), and is part of the Maputaland-Pondoland-Albany Global Biodiversity Hotspot (MITTERMEIER, *et al.* 2004). However, the fauna of the entire Wild Coast region remains poorly studied compared with other areas in southern Africa (PERERA, *et al.* 2011; HAMER & SLOTOW, 2017). Water bodies of the coastal conservation areas, like Mkambati Nature Reserve, have recently been shown to be important habitats for aquatic beetles (PERISSINOTTO *et al.*, 2016; BILTON, 2021).



Fig. 3. Type locality of *C. riberiae* sp. nov., beside Horseshoe Falls, Mkambati River, Eastern Cape, South Africa.

Fig. 3. Localidad tipo de *C. riberiae* sp. nov., próxima a Horseshoe Falls, Mkambati River, Eastern Cape, Sudáfrica.

ECOLOGY

Found on damp rock faces in the spray zone of Horseshoe Falls waterfall. Specimens were taken from damp areas of seepage beside the main falls, and were not present in wet areas beside the falls themselves. *C. riberiae* sp. nov. was the most abundant water beetle present at the site, occurring together with *Anacaena glabriventris* Komarek, 2004 and *Enochrus (Methydrus)* sp.

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