

***Paulianesthes fouquei* sp. nov., the second species  
of the endemic genus from Madagascar  
(Coleoptera: Tenebrionidae: Tentyriini)<sup>1</sup>**

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**Abstract.** The tenebrionid tribe Tentyriini (without Epitragini) was known from Madagascar only from three endemic and so far monotypic genera (*Nothrocerus* Fairmaire, 1891, *Rhomaleus* Chatanay, 1915, and *Paulianesthes* Koch, 1962). New collections prove the presence of a second species of *Paulianesthes* in southwestern Madagascar, being described in the present paper. *Paulianesthes fouquei* sp. nov. was found by pitfall traps on sandy soil in a small piece of forest with grazing cattle and sheep.

**Key words.** Coleoptera, Tenebrionidae, Tentyriini, *Paulianesthes*, new species, taxonomy, description, ecology, biology, Madagascar

### Introduction

The tenebrionid tribe Tentyriini (without Epitragini) was known from Madagascar only from three endemic, and so far monotypic genera (*Nothrocerus* Fairmaire, 1891, *Rhomaleus* Chatanay, 1915, and *Paulianesthes* Koch, 1962), a species of a fourth genus (*Mesostena* Eschscholtz, 1831) was imported. See also the complete checklist of the Malagasy Tenebrionidae by SCHAWALLER (2010). The systematics of the Tentyriini from Madagascar is treated in detail by KOCH (1962), including also the description of the new genus and species *Paulianesthes amplipennis* Koch, 1962 from the southwestern province Toliara (Tuléar in French). New collecting in the same province of Madagascar prove the presence of a second species of *Paulianesthes*, being described in the present paper.

The specimens were sampled with about 30 other tenebrionid species in the framework of the transdisciplinary SuLaMa project (Sustainable Land management in south-western

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Madagascar) which was embedded in the SLM (Sustainable Land Management Programme) funded by the German Federal Ministry of Education and Research (BMBF). SuLaMa focused on a participatory research approach in the semi-arid Mahafaly Plateau area in southwestern Madagascar to support the resilience of local communities to shortages in food and water supply while at the same time preserving the unique biodiversity. In this context, invertebrate communities were sampled across land use types, and the effects of land use on invertebrate communities were analysed.

## Material and methods

Body length is the distance from the clypeus to the elytral apex with the head in its natural position. Label data are given verbatim. All specimens of the type series bear one printed red label: ‘HOLOTYPUS [PARATYPUS], *Paulianesthes fouquei* sp. nov., W. SCHAWALLER & R. FRICKE 2017’.

The photographs were taken with a Leica DFC320 digital camera on a Leica MZ16 APO microscope and subsequently processed with Auto-Montage (Syncroscopy) software.

The specimens studied are deposited in the following collections:

SMNS	Natural History Museum, Stuttgart, Germany;
TMSA	Ditsong National Museum of Natural History, Pretoria, South Africa.

## Taxonomy

### *Paulianesthes amplipennis* Koch, 1962

(Fig. 1)

**Type material examined.** HOLOTYPE: ♂, ‘SW Madagascar, Lac de Vintany, Itampola, v.1951’ (TMSA). PARATYPE: ♀ (labelled as allotype), SW Madagascar, Ampanihy Distr., Itampolo, i.1956, leg. C. Koch (TMSA).

**Additional material examined.** SW MADAGASCAR: AMBOVOMBE DISTR.: Marovato, i.1956, 1 ♀, C. Koch leg. (TMSA) (identification doubtful).

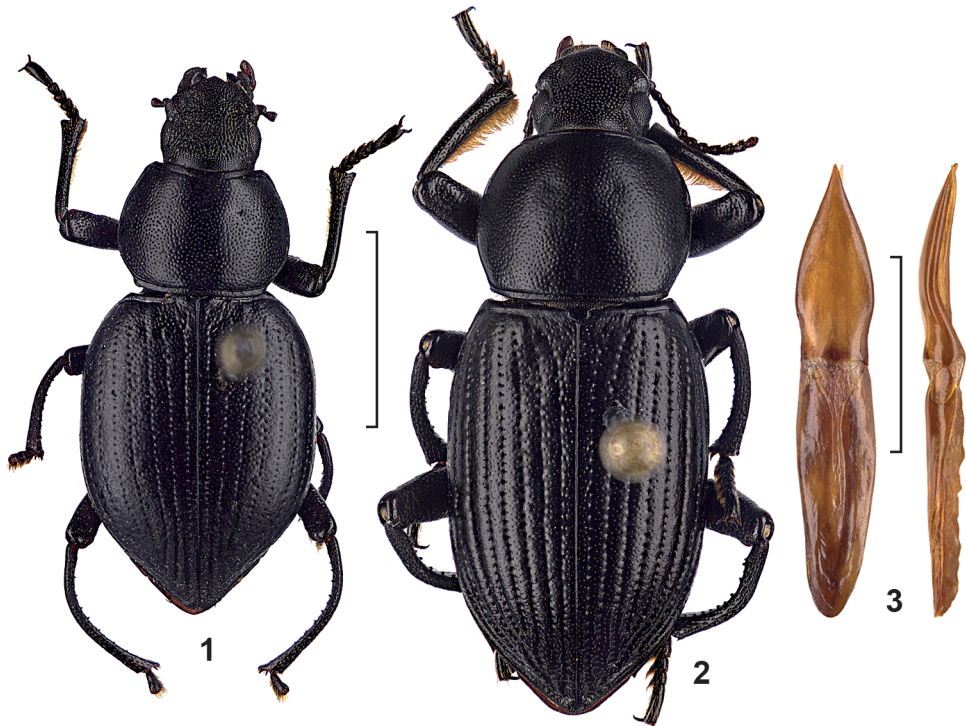
**Remarks.** KOCH (1962) mentioned, that the aedeagus of *P. amplipennis* is almost identical with that of *Rhomaleus scauroides* Chatanay, 1915, but did not describe or figure it. Unfortunately, the aedeagus is missing in the holotype. The antennae are broken in the holotype but described and figured by the author.

### *Paulianesthes fouquei* sp. nov.

(Figs 2–3)

**Type material.** HOLOTYPE: ♂, ‘SW Madagascar, littoral zone west of Tsimanampetsotsa NP, Efoetse, 14 m asl., 43.713441°/-24.05109499°, 13.–15.III.2013, pitfall traps, leg. R. Fricke’ (SMNS). PARATYPES: 5 ♀♀, same data as holotype (4 SMNS, 1 TMSA).

**Description.** Body length 13.0–13.5 mm. Dorsal and ventral side of body, as well as antennae and legs unicolourously black without metallic lustre, all surfaces shining. Head on frons with coarse but not confluent punctuation, punctures distinctly smaller but not sparser on clypeus, median lobe of epistome protruding in angle, similar in both sexes. The clypeal sutures forming distinct longitudinal impression extending backwards to ocular area. Labrum in both sexes



Figs 1–3. Dorsal view of the males and aedeagus of *Paulianesthes*. 1 – *P. amplipennis* Koch, 1962, holotype TMSA; 2 – *P. fouquei* sp. nov., holotype SMNS; 3 – *P. fouquei* sp. nov., aedeagus of holotype dorsal and lateral. Scale bars: 4.0 mm (1–2), 1.0 mm (3).

with long yellow setation. Eyes oval, slightly wider than geneae, not restricted by geneae or tempora; without subocular furrow. Antennae short, reaching middle of pronotum, third antennomere 1.5 times longer than second antennomere, antennomeres regularly becoming wider towards apex, without separated club, penultimate antennomere subtriangular, last antennomere smaller and oval. Pronotum convex, of similar shape in both sexes, widest in middle, lateral margins regularly flat in anterior part, becoming more and more convex towards posterior part, intervals with fine irregular punctuation, in posterior part additionally with small granules; without scutellar striolae; lateral margin visible from above only at shoulders and near apex; epipleura smooth without punctuation. Prosternum in males medially with small fovea bearing tuft of erect bristles, prosternal process compressed from sides but not

prominent. Ventriles regularly punctured in both sexes, last ventrite unbordered and without modification in males. Legs distinctly different in both sexes. Middle and posterior femora in males in basal part with weak tooth. Anterior tibiae in males fringed with long and dense yellow bristles, in females only with a few short and dark bristles; middle tibiae in males strongly curved, inner sides with a few distinct tubercles and with apical brush of long and yellow bristles, in females middle tibiae straight but also with apical brush of long and yellow bristles. Posterior tibiae in males also strongly curved, inner sides with a few distinct tubercles and with apical brush of long and yellow bristles, in females posterior tibiae straight but also with apical brush of long and yellow bristles. All tarsi in both sexes with long and dense yellow setation. Aedeagus as in Fig. 3.

**Comparative diagnosis.** *Paulianesthes fouquei* sp. nov. (Fig. 2) shares with *P. amplipennis* (Fig. 1) the general shape of the antennae, median lobe of epistome protruding in an angle, labrum in both sexes with long yellow setation, convex pronotum with broadly bordered basal margin, elytral base with a complete and broad marginal carina, prosternum in males medially with a small fovea bearing a tuft of erect bristles, prosternal process compressed from sides but not prominent, tarsi in both sexes with long and dense yellow setation, and strikingly modified male tibiae. *Paulianesthes fouquei* can be separated by a larger body size (10–11 mm in *P. amplipennis*), more elongate elytra, not confluent punctuation on frons, slightly convex elytral intervals, and by the existence of small granules on the posterior part of the elytra (completely flat elytral intervals without any granules in *P. amplipennis*), and by middle and posterior femora in males before middle with a weak tooth (only middle femur in males behind middle with a sharply pointed tooth in *P. amplipennis*). The aedeagi can not be compared, because aedeagus is unknown in *P. amplipennis* (see remarks under *P. amplipennis*).

**Etymology.** Named in honour of the late (1980–2016) René Fouquè (Liberec, Czech Republic), a friend and a specialist in the tenebrionid tribe Stenosini, who passed away tragically so early.

### Ecology and biology

According to KOCH (1962), specimens of *Paulianesthes amplipennis* were collected under calcareous stones in dry forest, in contrary to the arboreal habits of *Rhomaleus scauroides* under the bark of Filaos-trees (*Casuarina equisetifolia* L.). However, during the recent collecting *Rhomaleus* was found like *Paulianesthes* in pitfall traps, but never sympatrically. Thus, both taxa seem to be active on the ground and probably hide only passively under barks.

*Paulianesthes fouquei* sp. nov. was found by pitfall traps on sandy soil in a small piece of degraded forest or thicket with grazing cattle and sheep. The vegetation on the sampling site was sparse, with a canopy cover of estimated 10% for the tree stratum and 30% coverage for the shrub stratum. The ground was dominated by bare sandy soil (70%) with patches of leaf and wood litter (20%), while the herbaceous layer was only sporadically developed (5%). The plant species composition was characteristic for a thicket in the littoral zone of the southern Malagasy deciduous spiny forest on unconsolidated sands. Encountered tree and shrub species included *Didierea madagascariensis* Baill., *Gyrocarpus americanus* Jacq., *Azima tetracantha* Lam., *Croton geayi* Leandri, *Delonix floribunda* (Baill.) Capuron, and *Terminalia ulexoides* H. Perrier (40 plant species overall).

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## References

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