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Enoplotrupes (*Enoplotrupes*) *apatani* sp. nov. (Coleoptera: Geotrupidae) from Arunachal Pradesh, India

David Král[1)], Stanislav Jákl[2)] & Hasaholalu Boregowda Manjunatha[3)]

[1)] Department of Zoology, Faculty of Science, Charles University, Viničná 7, CZ–128 43 Praha 2, Czech Republic; e-mail: kral@natur.cuni.cz
[2)] Ecological Centre, Orlov o.p.s., Sphingidae museum, Plzeňská 134, CZ–261 01 Příbram, Czech Republic; e-mail: stanley.jakl@seznam.cz
[3)] University of Mysore, Department of Studies in Sericulture Science, Mysore, Karnataka, 570 006 India; e-mail: manjunathahb@yahoo.com

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Abstract. *Enoplotrupes* (*Enoplotrupes*) *apatani* sp. nov. from Arunachal Pradesh, India, is described, diagnosed and illustrated. This new species is compared with the similar and probably closely related species *E.* (*E.*) *rhinoceros* Král, Malý et Schneider, 2012 and *E.* (*E.*) *tawangensis* Gupta, Chandra et Král, 2019. These three species are all characterized by the presence of a pronotal horn in the shape of a more or less short furca in females, but differ from one another, especially in the shape and sculpture on the pronotum and elytra.

Key words. Taxonomy, new species, Coleoptera, Scarabaeoidea, Geotrupidae, *Enoplotrupes*, India.

INTRODUCTION

Currently, the genus *Enoplotrupes* P. H. Lucas, 1869 includes 25 species. They are distributed in the transition zone between the Palearctic and Oriental regions, predominantly in mountainous areas in China, India, Myanmar, Thailand and Vietnam (e.g., Král et al. 2012, Nikolajev et al. 2016, Ochi et al. 2017, Gupta et al. 2019, Král et al. 2019). Previously, three species of *Enoplotrupes* were known from Arunachal Pradesh: *Enoplotrupes* (*Enoplotrupes*) *rhinoceros* Král, Malý et Schneider, 2012 (Along: Rapum; Myanmar), *E.* (*E.*) *tawangensis* Gupta, Chandra et Král, 2019 (Tawang; Bhutan) and *E.* (*Gynoplotrupes*) *mishmi* Král, Malý et Schneider, 2019 (Mishmi Hills, Delai Valley) (e.g. Nikolajev et al. 2016, Schoolmesters 2020). Recently another undescribed species was found in material of *Enoplotrupes* collected in the Pange-Tale National Reserve in Arunachal Pradesh, the formal description of which is presented below.

MATERIAL AND METHODS

Material was examined under an Olympus SZ61 stereomicroscope and measurements made using an ocular grid. Habitus photographs were taken using a Canon EF-S 60 mm f/2.8 Macro USM lens attached to a Canon EOS 70D camera. Partially focused images of each specimen were combined using Zerene Stacker (Zerene Systems LLC, Richland, USA). The following abbreviations identify the collections housing the material examined (curators are given in parentheses):

SMCR – Sphingidae Museum, Příbram, Czech Republic (Stanislav Jákl);
UOMI – University of Mysore, Mysore, Karnataka, India (Hasaholalu Boregowda Manjunatha).

Specimens of the newly described species are provided with printed red labels: "Enoplotrupes (Enoplotrupes) apatani sp. nov., HOLOTYPUS ♂ [or] ALLOTYPUS ♀ [or] PARATYPUS, ♂ [or] ♀, David Král & Stanislav Jákl det. 2020". Verbatim label data are cited for the type material, individual lines on every label are separated by a vertical bar ("|"). Information in quotation marks (" ") indicate the original spelling. Our remarks and additional comments are found in brackets ("[]"). Morphological terminology used in the description of adults mainly follows Král et al. (2012).

TAXONOMY

Enoplotrupes (*Enoplotrupes*) *apatani* sp. nov.

(Figs 1–8)

Type locality. India, Arunachal Pradesh, Pange-Tale National Reserve, Pange valley, 1800–2000 m a. s. l. (Fig. 8).

Type material (6 specimens)**. Holotype**, ♂ (UOMI), "NE INDIA, Arunachal | Pradesh, PANGE-TALE | NAT. RES., 1800–2000 m | Pange valley, 11.– |18. VI. 2018 St. Jákl leg.". **Paratypes**, 1 ♀ (allotype) (SMCR), 1 ♀ (UOMI) and 1 ♂, 2 ♀♀ (SMCR), same data as holotype.

Description of holotype (♂). Body (Figs. 1, 3, 4) broadly oval, strongly convex. Dorsal surface shiny dark blue with slight blackish tinge; labrum, antennae, fronto-clypeal horn, extremities

Figs. 1–4. *Enoplotrupes* (*E.*) *apatani* sp. nov. 1, 3, 4 – holotype (♂), 3 – allotype (♀). 1, 3 – habitus, dorsal view; 3 – head and pronotum, frontal view; 4 – same, left lateral view. Not to scale.

Figs. 5–7. Parameres of *Enoplotrupes* (*E.*) *apatani* sp. nov. 5 – dorsal view; 6 – left lateral view; 7 – ventral view. Not to scale.

including mandibles and venter blackish; legs shiny dark blue ventrally; eyes light yellowish; macrosetation on head appendages, antennae and other parts of body, black.

Head (Figs. 1, 3 ,4). Labrum semi-circular, bilobed, anterior margin shallowly but distinctly emarginate, finely, broadly, irregularly serrate. Mandibles simple and regularly arcuate externally, with minute tooth apically. Clypeus ogival in shape, coarsely rugose, rugosities confluent, simple punctures missing; fronto-clypeal horn long, extending furca of pronotum horn apically, moderately curved backwards with an almost acuminate apex, considerably rugose (as on clypeus) anteriorly and with irregular more or less longitudinal streaks posteriorly, apex smooth; genal sutures distinct, straight and diverging posteriorly, excepting parallel anterior points extending distinctly outline of head; anterolateral angles of genae very pointed, points directed anterolaterally, genal surface very sparsely, irregularly, longitudinally wrinkled, without punctures mainly along genal suture; occiput glabrous; vertex with few punctures.

Pronotum (Figs. 1, 3, 4) shape an irregular hexagon, anterior angles absent, lateral margin angulate; smooth area either side of horn glabrous with slight concavity; pronotum and horn connected by a small longitudinal bridge, dorsal sculpture considerably coarsely, irregularly rugose to vermiculate, somewhat confluent. Horn strongly bifid, distinctly divergent apically, with distinctly rugose dorsal side, rugosities transversally confluent, ventral side smooth with two converging carinae.

Scutellum (Fig. 1) broadly triangulate in outline, broadly sinuate anteriorly, sides broadly rounded, surface impunctate, coarsely rugose.

Elytra (Figs. 1, 4) convex, with distinct impunctate humeral umbones, finely microsculptured, irregularly shaped micro-sculptured areas divided by fine, smooth, narrow, irregularly shaped furrows, confluent often in longitudinal rows resembling the striae on elytra.

Macropterous.

Legs. Femora unarmed, glabrous, impunctate, with two macrosetaceous transverse carinae. Prototibiae with six external teeth regularly diminishing basally; ventromedial edge unarmed, with 3–4 small teeth like projections on posterior region; meso- and metatibiae with three transverse external carinae, each with 3–4 long, robust macrosetae; exterior terminal calcar of mesotibia as long as mesotarsomeres 1–3 combined, inferior terminal calcar shorter than mesotarsomeres 1–2 combined; both terminal calcars of metatibiae equal in length and distinctly shorter then metatarsomeres 1–2 combined.

Aedeagus. Parameres of characteristic shape as in Figs. 5–7.

Variability of males. Fronto-clypeal horn in small specimens short, more or less straight; horn on pronotum less developed, with only a weak furca.

Sexual dimorphism. Females (Fig. 2) differ from males in following characters: fronto-clypeal and pronotal horns shorter, pronotal horn parallel-sided, furcate apically and anterior angles acuminate and angulate.

Measurements. Total body length 26–31 mm (holotype, ♂: 27 mm; allotype, ♀: 31 mm).

Differential diagnosis. The newly described species is classified in a nominotypical subgenus because the pronotal horn in males is slender, bifid or furcate apically, pronotum with transverse carina or furcate horn in females and microstriolate elytra (Král et al. 2012). *Enoplotrupes* (*Eno-*

Fig. 8. Type locality of *Enoplotrupes* (*E.*) *apatani* sp. nov., India, Arunachal Pradesh, Pange valley, June 2018.

plotrupes) *apatani* sp. nov. is similar and probably closely related to *E.* (*E.*) *rhinoceros* described from Myanmar (Kachin) and India (Arunachal Pradesh: Along, Rapum) and *E.* (*E.*) *tawangensis* because the pronotal horns in females are furcate. It differs from both of these species in the lateral margin of the pronotum in males being straight, considerably serrate and distinctly acute--angulate anteriorly (Figs. 1, 2). While in *E.* (*E.*) *rhinoceros* it is broadly rounded, not serrate and not angulate anteriorly (see Král et al. 2012: Fig. 1a) and in *E.* (*E.*) *tawangensis* it is broadly emarginate, almost not serrate and only very weakly obtuse-angulate anteriorly (see Gupta et al. 2019: Figs. 1a, 2a).

Collection of material. Specimens of newly described species were collected in one mountainous area in Pange Valley in the Pange-Tale National Reserve, in deciduous forest (Fig. 8). Excepting for one male and one female, all the specimens were caught by pit-fall traps baited with rotten freshwater fish. One female was found in a burrow under horse dung and one male crawling on the ground towards a trap approximately one meter away.

Distribution. So far known only from India, Arunachal Pradesh, Ziro district).

Etymology. The Apatani (= Tanw or Tanii) are a tribe of people living in the Ziro valley in the Lower Subansiri district of Arunachal Pradesh in India; noun in apposition.

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