

## Descriptions of four new *Enoplotrupes* (Coleoptera: Geotrupidae) species from China

David KRÁL<sup>1)</sup>, Vladislav MALÝ<sup>2)</sup> & Jan SCHNEIDER<sup>3)</sup>

<sup>1)</sup>Charles University in Prague, Faculty of Science, Department of Zoology,  
Viničná 7, CZ-128 43 Praha 2, Czech Republic  
e-mail: kral@natur.cuni.cz

<sup>2)</sup>Podskalská 393/5, CZ-128 00 Praha 2, Czech Republic  
e-mail: entotera@login.cz

<sup>3)</sup>Husinecká 4, CZ-130 00 Praha 3, Czech Republic  
e-mail: nicr

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. The following four new species from China are described: *Enoplotrupes* (*Enoplotrupes*) *gaoligong* sp. nov. (Yunnan), *E. (E.) kubani* sp. nov. (Sichuan, Yunnan), *E. (E.) monachus* sp. nov. (Yunnan) and *E. (Gynoplotrupes) gansuensis* sp. nov. (Gansu). Described species are compared with similar and probably related species. Relevant diagnostic characters of the new species including external male genitalia are illustrated.

### INTRODUCTION

The genus *Enoplotrupes* P. H. Lucas, 1869 (redescribed by Boucomont (1905)) comprises 13 described species occurring in the transition zone between the Palaearctic and the Oriental zoogeographical regions (e.g., Boucomont 1905, 1912; Král et al. 2012; Löbl et al. 2006). The genus is classified in the tribe Enoplotrupini and is divided into three subgenera: the nominotypical subgenus, *Gynoplotrupes* R. Oberthür, 1883 and *Tyrannotrupes* Král, Malý & Schneider, 2012. Individual subgenera differ mainly in the shape of the fronto-clypeal and pronotal horns and external male genitalia (Boucomont 1905, Král et al. 2012, Zunino 1984). To date eight species of *Enoplotrupes* have been known from China. They are *Enoplotrupes* (*E.*) *barmanicus* Gestro, 1888 (Yunnan), *E. (E.) chaslii* (Fairmaire, 1886) (Fujian, Guizhou, Jiangxi and Zhejinag), *E. (E.) crassicornis* Boucomont, 1905 (Gansu, Hubei, Jiangxi and Sichuan), *E. (E.) largeteaui* R. Oberthür, 1883 (Guizhou, Jiangxi, Sichuan and Yunnan), *E. (E.) sinensis* P. H. Lucas, 1869 (Gansu, Hunan, Sichuan, Shaanxi and Yunnan), *E. (Gynoplotrupes) bieti bieti* R. Oberthür, 1883 (Sichuan, Shanxi, Yunnan and Xizang), *E. (G.) latus* Boucomont, 1909 (Sichuan and Yunnan) and *E. (G.) yunnanus* (Fairmaire, 1888) (Yunnan) (Král et al. 2012, Löbl et al. 2006). Our study of the further specimens from the collections below facilitated descriptions of four new species from the Chinese provinces of Gansu, Sichuan and Yunnan. The number of species in China stands now at 12.

## MATERIAL AND METHODS

The following acronyms identify the collections housing the material examined:

- AGCM Andre Gorodinski collection, Moscow, Russia;  
DKCP David Král collection (deposited in NMPC);  
EKCS Emil Kučera collection, Soběslav, Czech Republic;  
JSCP Jan Schneider collection, Praha, Czech Republic;  
NMPC National Museum, Praha, Czech Republic (Jiří Hájek);  
PFAC Patrick Florent Arnaud collection, France;  
RCCP Radek Červenka collection, Praha, Czech Republic;  
SJCP Stanislav Jákl collection, Praha, Czech Republic;  
VMCP Vladislav Malý collection, Praha, Czech Republic.

Material was examined with Olympus SZ61 and MBS-10 stereomicroscopes. Measurements were taken with an ocular grid. The habitus photographs were taken using a Canon MP-E 65mm/2.8 Macro lens with 5:1 optical magnification on bellows attached to a Canon EOS 550D. Partially focused images of the specimen were combined using Helicon Focus 3.20.2 Pro software.

Specimens of described species are provided with one red printed label “Name of a taxon sp. nov., HOLOTYPUS ♂ [or] ALLOTYPUS ♀ [or] PARATYPUS ♂ [or] ♀, David Král, Vladislav Malý & Jan Schneider det., followed by the year of identification”. Exact label data are cited for the type material, individual labels are indicated by a double slash (/), individual lines of every label by a single slash (/), [p] - preceding data within quotation marks are printed, [hw] - the same but handwritten. Our remarks and additional comments are found in brackets.

Morphological terminology largely follows Král et al. (2001, 2012).

## TAXONOMY

### *Enoplotrupes (Enoplotrupes) gaoligong* sp. nov.

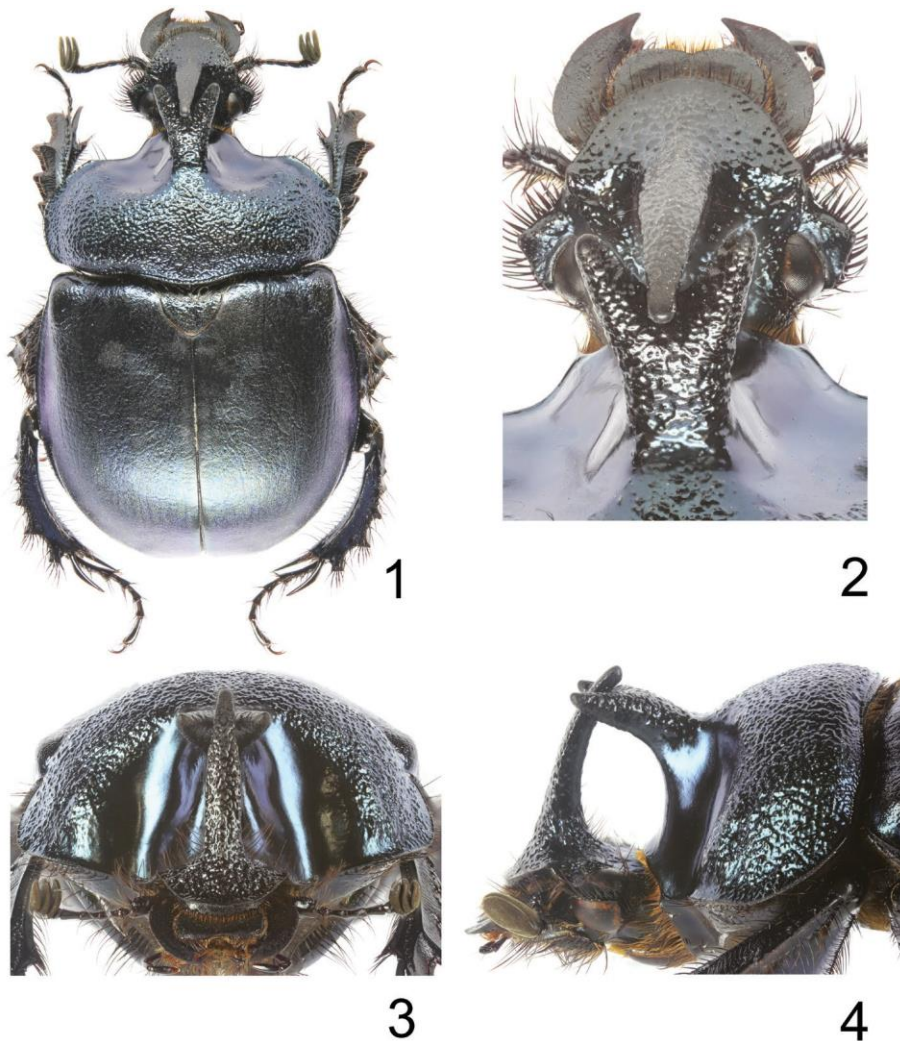
(Figs. 1-4, 17-19)

**Type locality.** China, Yunnan, Gaoligong mts., 24°57'N 98°45'E, 2200-2500 m a. s. l.

**Type material** (1 specimen). China, Yunnan: Holotype (♂) (DKCP): “YUNNAN 2200-2500 m / 24.57N 98.45E 8-16/5. / GAOLIGONG mts. / Vít Kubáň leg. 1995 [p]”.

**Description of holotype.** Colour of dorsal surface dark blue; labrum, extremities including mandibles black; fronto-clypeal and pronotal horn and genae blackish; macrosetation of head appendages including labrum blackish-brown, that of antennae and other parts of body black (Fig. 1). Ventral surface black, covered with dense, brownish macrosetation.

Head (Figs. 1-3). Labrum semicircular, bilobed, anterior margin shallowly emarginate, alutaceous, impunctate; mandibles simply regularly arcuate externally (without any tooth or sinuations). Clypeus ogival, coarsely rugose, rugosities confluent, simple punctures missing; fronto-clypeal horn long, weakly extending furca of pronotal horn apically, moderately



Figs. 1-4. *Enoplotrupes (E.) gaoligong* sp. nov., holotype (♂): 1- habitus, dorsal view; 2- head and pronotum, left lateral view; 3- same, frontal view, 4 - detail of pronotal horn, dorsal view). Not to scale.

curved backwards to almost acuminate apex, considerably rugose (as in clypeus) anteriorly, and with irregular more or less longitudinal streaks posteriorly; genal sutures distinct, straight and divergent posteriad, excepting parallel anterior points extending distinctly outline of head; anterolateral angles of genae considerably pointed, points directed anterolaterad, genal surface very sparsely, irregularly, longitudinally wrinkled, with simple punctures mainly along genal suture; occiput glabrous and alutaceous.

Pronotum (Figs. 1-3) of irregular hexagon in shape, anterior corners acute-angular, lateral margin broadly rounded, converging posteriad; smooth area laterally of horn glabrous and

shiny; longitudinal connection between pronotum and horn without ridge; dorsal sculpture considerably coarse, irregularly rugose to vermiculate, somewhat confluent. Horn with considerably stout base (Fig. 4), distinctly bifid, distinctly divergent apicad; with considerably rugose dorsal side, rugosities confluent transversally.

Scutellar plate broadly triangulate, broadly sinuate anteriorly, sides broadly rounded; surface shiny, considerably coarse, deeply rugose.

Elytra (Fig. 1) convex, with distinct humeral umbone; finely microsculptured, shagreened, microstriolate; large irregularly shaped microsculptured areas divided by very fine, smooth, narrow, irregularly shaped furrows, not confluent in longitudinal rows resembling rather elytron striae.

Macropterous.

Legs. Femora unarmed, glabrous, impunctate, with two macrosetaceous transversal carinae. Protibiae with six external teeth regularly diminishing basad; ventromedial edge unarmed; meso- and metatibiae with three transversal external carinae.

Abdominal ventrites scabrous, almost alutaceous.

Aedeagus. Parameres of characteristic shape as in Figs. 17-19.

**Sexual dimorphism.** Female unknown.

**Measurements.** Total body length of holotype 29 mm.

**Differential diagnosis.** The new species is classified in the nominotypical subgenus by having pronotal horn in male slender or stout, bifid or broadly furcate apically; in female pronotum with transversal carina or furcate horn; elytra shagreened, microstriolate, as a rule alutaceous or moderately shiny; colour of dorsum blackish, bluish, dark blue, often with weak brownish, greenish, cuprous or violet tinge (for details see also Král et al. 2012). *Enoplotrupes* (*E.*) *gaoligong* sp. nov. is similar and presumably closely related to *E.* (*E.*) *barmanicus* and *E.* (*E.*) *largeteaui* by approximately the same colour of dorsal surface and analogical shape of horns of head and pronotum. But it clearly differs mainly as follows:

- sculpture of pronotum considerably coarse, irregularly rugose (Figs. 1-2) (distinctly finer and less rugose in both compared species);
- base of pronotal horn stout (Fig. 4) (slender in both compared species);
- longitudinal ridge between pronotum and pronotal horn absent (Fig. 4) (present in both compared species);
- sculpture of scutellar plate considerably coarse, deeply rugose (Fig. 1) (distinctly finer, rugosities shallow in both compared species).

**Collecting circumstances.** A single specimen was collected in cow dung in a mixed forest together with *Phelotrupes* (*Phelotrupes*) *kubani* Král, Malý et Schneider, 2001 (Král et al. 2001).

**Distribution.** So far known only from the Gaoligong Mts. in central-west part of the Yunnan Province, China.

**Etymology.** Toponymic; derived from the area of origin of the new species, the Gaoligong Mts.; noun in apposition.

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