

FIRST RECORD OF THE SUBGENUS *INDOMALTHINUS* (COLEOPTERA: CANTHARIDAE: *MALTHINUS*) EAST OF HIMALAYAS WITH DESCRIPTION OF A NEW SPECIES

S. V. Kazantsev^{1,2)}

1) Diplomatic Academy of the Ministry of Foreign Affairs of Russia, Ostozhenka 53/2, Moscow 119021, Russia. E-mail: kazantss@mail.ru

2) Insect Centre, Donetskaya 13–326, Moscow 109651, Russia.

Summary. A new species of malthinine soldier beetles, *Malthinus qinlingensis* sp. n., is described from the Qinling Mountains, Shaanxi, China. It was found to belong to the subgenus *Indomalthinus* Brancucci, 1978, and represents the first record of the subgenus east of the Himalayas. The nine previously known *Indomalthinus* species were reported only from the Himalayan or Sub-Himalayan regions of India (Arunachal Pradesh, Assam, Darjeeling, Himachal Pradesh, Punjab, Uttar Pradesh), Pakistan and Nepal. A checklist and a key to species of the subgenus *Indomalthinus* are provided.

Key words: beetles, Cantharidae, Malthininae, *Malthinus*, new species, key, China, Palaearctic region.

С. В. Казанцев. Первое указание подрода *Indomalthinus* (Coleoptera: Cantharidae: *Malthinus*) к востоку от Гималаев с описанием нового вида // Дальневосточный энтомолог. 2025. N 522. С. 22-28.

Резюме. Из гор Цинлинг, провинция Шэньси, Китай описан новый вид жуков-мягкотелок *Malthinus qinlingensis* sp. n. Новый вид относится к подроду *Indomalthinus* Brancucci, 1978 и является первым представителем подрода, обнаруженным восточнее Гималаев. Девять ранее описанных видов *Indomalthinus* отмечались только для гималайских и суб-гималайских провинций Индии (Аруначал Прадеш, Ассам, Дарджилинг, Химачал Прадеш, Пенджаб и Уттар Прадеш), Пакистана и Непала. Приведен список всех видов подрода *Indomalthinus* и предложена определительная таблица по самцам.

INTRODUCTION

The subgenus *Indomalthinus* Brancucci, 1978 was erected as a supraspecific taxon within *Malthinus* Latreille, 1806 for seven Himalayan species, four described as new and three previously referred to *Malthinus* s. str. and *Anolisus* Mulsant, 1862 (a synonym of *Malthacus* Kirby, 1837) (Wittmer & Brancucci, 1978). Six of them came from the Himalayan states of India, Arunachal Pradesh, Darjeeling, Himachal Pradesh, Punjab, Uttar Pradesh, as well as the

Sub-Himalayan Assam, and Nepal. Another two species were added to this subgenus 39 years later and also were found in the Himalayan provinces of India (Arunachal Pradesh) and Nepal (Gandaki) (Kopetz, 2015).

Between these two events when new taxa were introduced to the subgenus, two papers were published that established a synonym and a homonym, added data to the distribution of the subgenus, and presented description of female genitalia of most species (Brancucci, 1979, 1981).

An opportunity to study soldier beetles collected by Austrian entomologist Carolus Holzschuh during his expeditions to China allowed discovering in the material from the Qinling Mountains in Shaanxi a small series of specimens that could undoubtedly be attributed to *Malthinus* subg. *Indomalthinus*. The series turned out to represent a new species described below. A list of all species and an updated key to species of the subgenus *Indomalthinus* are provided also.

MATERIAL AND METHODS

The studied beetles were glued on cardboard plates. Before the examination, they were relaxed in water, then their detached abdomens were kept for several hours in 10% KOH at room temperature. The KOH treated aedeagi/female genitalia and terminal abdominal segments were then placed in microvials with glycerin for photographing.

MSP-1 zoom stereoscopic dissecting microscope with 8–80 times magnification range was used for examination of diagnostic characters. Photographs were taken with a Canon EOS 6D camera and Canon MP-E 65 mm lens and processed with Zerene Stacker and Adobe Photoshop software.

The terminology used for female terminalia and genitals follows Brancucci (1979).

TAXONOMY

Family Cantharidae Imhoff, 1856 (1815)

Subfamily Malthininae Kiesenwetter, 1852

Tribe Malthininae Kiesenwetter, 1852

Genus *Malthinus* Latreille, 1805

Subgenus *Indomalthinus* Brancucci, 1978

Malthinus subg. *Indomalthinus* Brancucci, 1978: 305.

Type species: *Malthinus* (*Indomalthinus*) *bhaktai* Brancucci, 1978 by original designation.

***Malthinus* (*Indomalthinus*) *qinlingensis* Kazantsev, sp. n.**

<https://zoobank.org/NomenclaturalActs/B6EC5F80-659E-4323-A410-A00B13F5B1D7>

Figs 1–6

TYPE MATERIAL. Holotype – ♂: **China**: “C China: Shaanxi, Qinling Mts, 6 km E Xunyangba, 1000–1300 m, 23.V–13.VI 2000, C. Holzschuh leg.” (Insect Center, Moscow); Paratypes: 1 ♂ and 2 ♀, same labels (Insect Center, Moscow).

DESCRIPTION. MALE. Testaceous; head behind antennal insertions, antennae, except antennomeres 1–2, broad pronotal median stripe, tibiae medially and tarsi dark brown (Fig. 1).

Head transverse, without eyes about as wide as pronotum. Eyes small, spherical, interocular distance ca 2.3 times greater than eye diameter in dorsal view. Vertex densely and finely punctuate. Ultimate maxillary and labial palpomeres narrow, noticeably longer than wide. Antennae filiform, attaining to elytral three fourths; antennomere 3 ca 1.3 times longer than pedicel (antennomere 2) and subequal in length to antennomere 4; antennal pubescence moderately long and sub-erect (Fig. 1).



Figs 1, 2. *Malthinus (Indomalthinus) qinlingensis* Kazantsev, **sp. n.**, general view: 1 – holotype male; 2 – paratype, female.

Pronotum transverse, ca 1.1 times wider than long, gradually widened anteriorly, laterally concave near posterior and anterior angles, anteriorly convex, posteriorly slightly medially concave; with distinct discal ribs forming elongate median areole in anterior half and transverse rectangular areole in posterior third.

Elytra elongate, ca. 3.3 times longer than wide at humeri, parallel-sided, completely covering abdomen and folded wings; elytral punctures arranged in inconspicuous rows, more noticeable near suture; elytral pubescence uniform, short and sub-erect. Scutellum narrowing distally, broadly rounded at apex.

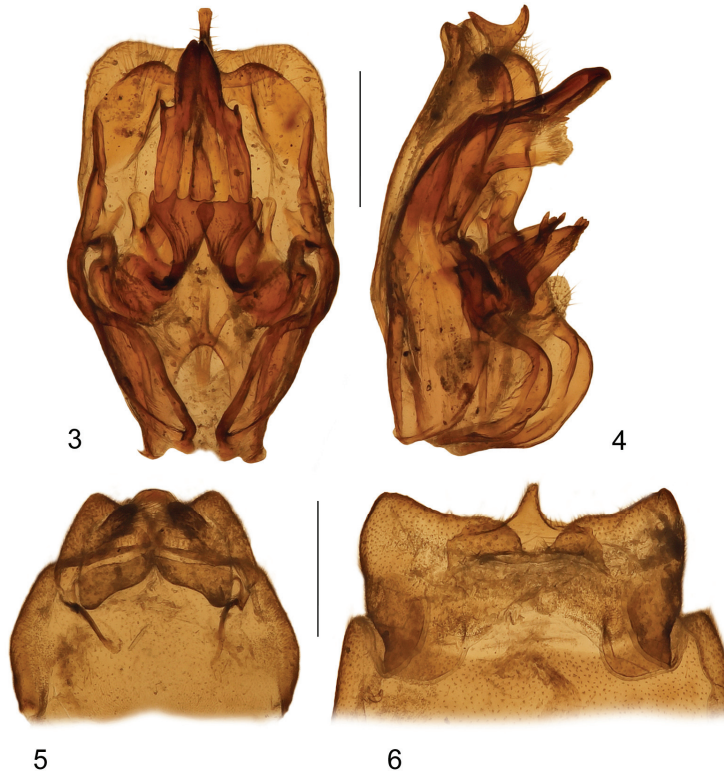
Legs long and slender; femurs and tibiae straight and narrow, subequal in length; posterior trochanter small, elongate; hind coxae small, transverse, without distal process; hind tarsomeres length ratio: 4.4 : 2 : 1 ; 1 ; 1.6 (Fig. 1).

Ultimate ventrite large, elongate, oval, feebly emarginate medially at apex; ultimate tergite transverse, gradually narrowing and rounded distally.

Aedeagus elongate, sub-rectangular in distal two thirds, with short robust laterophyses, just attaining to the middle, crossed and moose horns-shaped distally, sub-quadrate ventral plate, and elongate and strongly curved in lateral view median piece, split at apex and provided with lateral teeth before distal third and crescent-shaped (in lateral view) distal process (Figs 3, 4).

Body length (from head to apices of elytra): 5.2–5.4 mm; width (at humeri): 1.2–1.3 mm.

FEMALE. Similar to male, but larger (body length: 6.6–7.4 mm; width: 1.6–1.7 mm), with relatively shorter antennae and elytra; head below and laterally behind eyes testaceous (Fig. 2). Ultimate ventrite transverse, conspicuously emarginate medially, with distally acute median process, attached proximally to the inner side of the ventrite; ultimate tergite trapezoidal, triangularly incised at distal margin; proximal part of coxites horizontal, transverse, medially little produced, distal part relatively short, oval; paraprocts straight at sides, triangular at apices; proctiger transverse, almost truncate at apex (Figs 5, 6).



Figs 3–6. *Malthinus (Indomalthinus) qinlingensis* Kazantsev, **sp. n.**: 3 – aedeagus, ventral view, holotype, male; 4 – aedeagus, lateral view, holotype, male; 5 – ultimate tergite with genitalia, paratype, female; 6 – ultimate sternite, paratype, female. Scale bars 0.5 mm.

DIAGNOSIS. *Malthinus (Indomalthinus) qinlingensis* **sp. n.** differs from all known species of the subgenus by the sub-quadrated ventral plate of the aedeagus and distally widening, moose horns-shaped laterophyses (Figs 3, 4); it may also be distinguished from *M. (I.) dirangensis* Kopetz, 2015, the only other *Indomalthinus* with crossed at apices laterophyses of the aedeagus, by the bicoloured pronotum, dark at disc and testaceous at sides (Figs 1, 2). By the structure of the female ultimate ventrite (sternite 8), with distally acute median process (Fig. 6), *M. (I.) qinlingensis* **sp. n.** resembles *M. (I.) tantricus* Brancucci, 1978 from Darjeeling, easily distinguishable by the testaceous anteriorly head and bicoloured pronotum, as well as by the details of the aedeagus.

BIOLOGY. Unknown.
 DISTRIBUTION. Shaanxi, China.
 ETYMOLOGY. The new species is named after the mountains where the new species was collected.

A LIST OF *MALTHINUS* (*INDOMALTHINUS*) SPECIES

albidipennis Pic, 1907: 172. India (Himachal Pradesh, Uttar Pradesh), Pakistan (Khyber Pakhtunkhwa), Nepal. = *duplolineatus* Champion, 1926: 209 (synonymy established by Brancucci, 1979).
bengalensis Brancucci, 1978: 314. India (Darjeeling).
bhaktai Brancucci, 1978: 312. India (Sikkim, Darjeeling).
coxalis Brancucci, 1978: 316. India (Assam).
dirangensis Kopetz, 2015: 395. India (Arunachal Pradesh).
ganesh Brancucci, 1981: 54. India (Himachal Pradesh, Kashmir, Uttar Pradesh). = *multinotatus* Pic, 1929: 75 (*Anolisus*) (homonymy established by Brancucci, 1981).
qinlingensis **sp. n.** China (Shaanxi).
spissicornis Champion, 1926: 208. India (Uttar Pradesh).
sprecheri Kopetz, 2015: 395. Nepal (Gandaki).
tantricus Brancucci, 1978: 316. India (Darjeeling).

A KEY TO *MALTHINUS* (*INDOMALTHINUS*) SPECIES BASED ON MALES

1. Apices of laterophyses of aedeagus crossed 2
 – Laterophyses of aedeagus, if present, not crossed at apices 3
2. Pronotum uniformly yellow. Ventral plate of aedeagus oval; laterophyses distally narrowing, acute *M. (I.) dirangensis*
 – Pronotum bicoloured, dark at disc and testaceous at sides. Ventral plate of aedeagus subquadrate; laterophyses distally widening, moose horns-shaped *M. (I.) qinlingensis* **sp. n.**
3. Head and pronotum uniformly testaceous or brownish, without spots 4
 – Head or pronotum, or both, with one or several, sometimes considerably reduced spots 6
4. Large, at least 6 mm in length. Antennae thick, antennomere 2 at most 1.5 times longer than wide. Laterophyses of aedeagus distally split *M. (I.) spissicornis*
 – Smaller, at most 5.3 mm in length. Antennae thin, antennomere 2 at least 2.5 times longer than wide 5
5. Elytra light. Median piece of aedeagus with small, curved, S-shaped process *M. (I.) sprecheri*
 – Elytra dark. Median piece of aedeagus with wider flat lamella *M. (I.) albidipennis*
6. Anterior part of head black; pronotum uniformly testaceous; elytra dark brown. Laterophyses of aedeagus widely apart *M. (I.) tantricus*
 – Head and pronotum with black spots. Laterophyses of aedeagus close together or missing 7
7. Head and pronotum with lateral black stripes; pronotal stripe sometimes divided into 4 spots. Laterophyses of aedeagus missing; median piece elongated and lamellar *M. (I.) ganesh*
 – Head and pronotum with one, sometimes considerably reduced black spot on the disc. Laterophyses of aedeagus elongated and distally acute 8

8. Male hind coxae not extended distally into a process *M. (I.) bengalensis*
 – Male hind coxae extended distally into a narrow process 9
 9. Male hind coxal processes parallel-sided *M. (I.) bhaktai*
 – Male hind coxal processes diverging outwardly *M. (I.) coxalis*

DISCUSSION

The distribution pattern of *Malthinus* subg. *Indomalthinus* with species found in isolated pockets in the Himalayan or Sub-Himalayan regions of India, Pakistan and Nepal, in the western part of its distribution area, and in the mountains of Central China in its eastern part, but not elsewhere, is not that infrequently come across. A similar case was observed, eg, in the lycid genus *Helcophorus* Fairmaire, 1891 (Kazantsev, 2015), with, perhaps, one notable exception: *Helcophorus* species have been reported from mountains of northern Indochina and Yunnan as well [its occurrence in Baltic amber mentioned in the paper was later rejected (Motyka *et al.*, 2023)]. Given that the presence of *Malthinus* subg. *Indomalthinus* in northern Indochina and Yunnan cannot be ruled out and may be confirmed by future research, it seems probable that assumptions made on the history of *Helcophorus* may also be referred, with certain exemptions, to *Indomalthinus*. It seems thus plausible to presume that *Indomalthinus* had already been around by the time India completed its collision with the future Himalayas some 40 mya (Hu *et al.*, 2016). The relatively limited variation of external morphology of the extant *Indomalthinus* species throughout their vast distribution area suggests that the refugia where they have survived are characterised by conditions not significantly different from those millions of years ago.

ACKNOWLEDGEMENTS

It is my pleasant duty to express gratitude to Mr C. Holzschuh (Villach, Austria) for the opportunity to study the generously donated Cantharidae material from China.

REFERENCES

- Brancucci, M. 1979. Notes complémentaires sur le sous-genre *Malthinus* (*Indomalthinus*) Brancucci (Coleoptera: Cantharidae). *Entomologische Arbeiten aus dem Museum G. Frey Tutzing bei München*, 28: 165–169.
- Brancucci, M., 1981. Dritter Beitrag zur Kenntnis der Untergattung *Malthinus* (*Indomalthinus*) (Col. Cantharidae). *Mitteilungen der Entomologischen Gesellschaft Basel*, 8: 54–55.
- Champion, G.C. 1926. Some Indian (and Tibetan) Coleoptera (20.). *The Entomologist's Monthly Magazine*, 62: 194–210.
- Hu, X., M., Garzanti, E., Wang, J., Huang, W., An, W. & Webb, A. 2016. The timing of India-Asia collision onset – Facts, theories, controversies. *Earth-Science Reviews*, 160: 264–299. DOI: 10.1016/j.earscirev.2016.07.014
- Kazantsev, S.V. 2015. New taxa of *Helcophorus* Fairmaire, 1891, with a key to species of the genus (Coleoptera: Lycidae). In: M. Hartmann & J. Weipert (eds.). *Biodiversität und Naturschutz im Himalaya. Band 5*. Erfurt: Verein der Freunde & Förderer des Naturkundemuseums Erfurt e.V.: 383–389.
- Kopetz, A. 2015. Zur Kenntnis der Gattungen *Malthinus* Latreille, 1806 und *Pakabsidia* Wittmer, 1978 (Insecta: Coleoptera: Cantharidae) im Himalaya. In: M. Hartmann & J. Weipert (eds.). *Biodiversität und Naturschutz im Himalaya. Band 5*. Erfurt: Verein der Freunde & Förderer des Naturkundemuseums Erfurt e.V.: 393–404.

- Latreille, P.A. 1805. *Genera Crustaceorum et Insectorum secundum ordinem naturalem in familias disposita, iconibus exemplisque plurimus explicata. V. 1.* Parisiis; Argentorati: Amand Koenig, XVIII + 302 pp + 16 pls.
- Motyka, M., Kazantsev, S.V., Kusy, D., Perkovsky, E.E., Yamamoto, Sh. & Bocak, L. 2023. Eocene aposematic patterns persist in modern European lycids despite the absence of co-mimics. *iScience*, 26, 106217. DOI: 10.1016/j.isci.2023.106217
- Pic, M. 1907. Diagnoses de Coléoptères asiatiques nouveaux. *L'Echange*, 23 (274): 171–174.
- Wittmer, W. & Brancucci, M. 1978. Zur Kenntnis der Malthinini der indo-malaiischen Region (Col. Cantharidae). *Entomologica Basiliensia*, 3: 297–319.

© **Far Eastern entomologist (Far East. entomol.)** Journal published since October 1994.

Editor-in-Chief: S.Yu. Storozhenko

Editorial Board: A.S. Lelej, S.A. Belokobylskij, M.G. Ponomarenko, V.A. Mutin, E.A. Beljaev, E.A. Makarchenko, A.V. Gorochoy, T.M. Tiunova, M.Yu. Proshchalykin, S.A. Shabalin, V.M. Loktionov

Address: Federal Scientific Center of the East Asia Terrestrial Biodiversity (former Institute of Biology and Soil Science), Far East Branch of the Russian Academy of Sciences, 690022, Vladivostok-22, Russia.

E-mail: storozhenko@biosoil.ru

web-site: <http://www.biosoil.ru/fee>