Faunitaxys

Revue de Faunistique, Taxonomie et Systématique morphologique et moléculaire

Volume 9
Numéro 27

Août 2021

ISSN : 2269 - 6016
Dépôt légal : Août 2021

Faunitaxys

Revue de Faunistique, Taxonomie et Systématique morphologique et moléculaire

ZooBank : http://zoobank.org/79A36B2E-F645-4F9A-AE2B-ED32CE6771CC

Directeur de la publication, rédacteur, conception graphique et PAO:
Lionel Delaunay

Cette revue ne peut pas être vendue
Elle est distribuée par échange aux institutions (version papier)
et sur simple demande aux particuliers (format PDF)
à l'adresse suivante:

AFCFF (Association française de Cartographie de la Faune et de la Flore)
28, rue Voltaire, F- 42100 Saint Etienne
E-mail: lionel.delaunay@free.fr

Elle est disponible librement au téléchargement à partir du site:
http://faunitaxys.fr/

La parution de *Faunitaxys* est apériodique

Faunitaxys est indexé dans / ***Faunitaxys*** is indexed in:
- Zoological Record
Articles and nomenclatural novelties are referenced by:
- ZooBank (http://zoobank.org)

Imprimée sur les presses de SPEED COPIE
6, rue Tréfilerie, F- 42100 Saint-Etienne

Imprimé le 27 août 2021

A new species of *Lucanus* Scopoli, 1763 (Coleoptera, Lucanidae) from Tibet, China

CHENG-ZHI BIAN (1) & ZHIHONG ZHAN (2, 3)

(1) 1-2, Xinghua Street, Beijing, China 102600
- https://orcid.org/0000-0002-4630-8567 - ZooBank: http://zoobank.org/3A12AF5C-8BFF-4182-B382-5EB5AC04E38C

(2) Department of Entomology, University of Wisconsin-Madison, U.S.A 53703
- https://orcid.org/0000-0002-2118-2689 - ZooBank: http://zoobank.org/9B15A2AB-772A-438B-BE3F-041A0001236E

(3) Corresponding author - zzhan8@wisc.edu

Keywords:

Coleoptera; Lucanidae; *Lucanus*; *shulini*; taxonomy; new species; Tibet; China.

Abstract. – A new species of Lucanidae is described from Tibet, China, *Lucanus shulini* **sp. nov.** (Coleoptera: Lucanidae: Lucaninae). Significant morphological characters of the new species are illustrated by color plates.

Bian C.-Z. & Zhan Z., 2021. – A new species of *Lucanus* Scopoli, 1763 (Coleoptera, Lucanidae) from Tibet, China. *Faunitaxys*, 9(27): 1 – 4.

ZooBank: http://zoobank.org/C47D0F7A-CB9A-44A6-AEFD-A1E17EF6D217

Introduction

Lucanus Scopoli (Coleoptera: Lucanidae) presents as the type genus of Lucanidae (Coleoptera) that members distributed in Nearctic, Oriental and Palearctic Regions. However, the highest biodiversity of this genus is in eastern Asia, and many species are difficult to identify because of similar morphological characteristics. For the fauna of China, Huang & Chen (2010, 2012, and 2017) listed around 55 species, and nearly 25% of this genus were reported from Tibet, China. In 2019, during our friend's scientific field trip to South Tibet, he found an interesting species of stag beetle and managed to collect some specimens. After receiving those specimens and comparing it with the allied species, we found that it is an undescribed species and decided to publish it. By letting the collector known and agreed, we decided to use the first author's grandfather, a soldier who once protected the border of China, for the name of this species. This new species, *Lucanus shulini*, shares a closer relationship with *Lucanus liupengyui* Huang & Chen, 2017. In this paper, we described the new species and compared it with the allied species. A checklist of *Lucanus* from Tibet, China is also included.

Materials and methods

The specimen was relaxed and softened in an HH-2 digital homoeothermic water bath at 44.4°C for 24 hours, then transferred to distilled water to clean, observe and dissect. To examine the genitalia, the abdomen was detached and treated with a 10% solution of potassium hydroxide for 12 hours, then transferred to distilled water to flush the remaining KOH and stop any further bleaching. After examination, the body parts were mounted on a glass slide with Euparal Mounting Medium for future studies. Habitus photographs were taken using a Canon macro photo lens 100mm on a Canon 5D Mark IV. Detailed photographs with transmitted light were performed using a Shanghai BM-SG12S microscope with a Canon 550D. The final deep-focus images were created with Zerene Stacker 1.04 stacking software. Adobe Photoshop 2020 was used for post-processing. The morphological terminology follows Holloway (2007) and Huang & Chen (2010, 2013, 2017).

The material examined for this study is deposited in the following collections:

– **CLJZ**: Collection of Lin-Jingzhi, Taipei
– **CZZH**: Collection of Zhan-Zhihong, Nanjing
– **NAU**: Nanjing Agricultural University, Nanjing

Results

Genus **Lucanus** Scopoli, 1763
(Vernacular name: 深山锹甲属)

***Lucanus shulini* sp. nov.**
(Vernacular name: 卞氏深山锹)

(Fig. 1-3, 7, 9, 11)

ZooBank: http://zoobank.org/0CE2AC6B-55B8-497F-B64F-7EFB2BEA7DD9

Holotype, ♂ (NAU), Linzhi 2100m, Tibet, China, IX. 2019. Zhang-Renzhi leg. [林芝市，西藏自治区].

Paratypes (**16** ex.)

– **7** ♂ & **8** ♀ (CZZH), same data as the holotype.
– **1** ♂ (CLJZ), same data as the holotype.

Description of the male

Dimensions *(mm)*.
– *Length*: 29.8-38.7 (incl. mandibles), 23.8-28.9 (excl mandibles).
– *Width*: 8.4-10.1 (at pronotum), 10.5-12.3 (at elytra).

Coloration. – Body moderately convex; brackish brown throughout except for antennae and palpi black, femola and tibiae yellowish brown with black edges, tarsi black; densely clothed with yellow hairs throughout.

Head. – Trapezoidal; upper surface densely covered with punctures; frontal ridge clearly and evenly risen upward at middle; lateral ear-shaped ridges roundly evenly expanded laterad and posteriad. – *Clypeus* triangular, lateral margins triangularly expanded at near base. – *Canthus* covering 2/5 of outer margin of eye. – *Mentum* nearly trapezoidal, anterior margin weakly emarginated, densely covered with punctures and long yellow hairs. – *Mandibles* roundly curved inward from base toward

apices, densely covered with punctures and covered with yellow hairs in basal 1/4, each with 2 inner teeth at apical 2/5 and with indistinct tooth at lower side before apex. – *Antennae* with 2nd-6th segment short and simply formed, 7-10th clavate with yellowish brown pubescence.

Pronotum. – Convex, widest at basal 2/5, weakly narrowed toward before and behind; anterior angles acute, posterior angles slightly rounded; upper surface densely covered with small punctures.

Scutellum. – Nearly semicircular, densely covered with punctures and yellow hairs.

Elytra. – Convex, shiny, 0.73 times as wide as long, surface densely covered with minute punctures and yellow hairs, humeral angles rounded.

Legs. – Rather short, protibiae each with 3 outer teeth and with outer apex divaricated, mesotibiae each with 3 sharp outer spines, metatibiae each with 1-2 sharp outer spines.

Genitalia (as photographed). – Basal piece trapezoidal in ventral view, 1.87 times as long as prameres; flagellum short, flattened in basal 2/5, apex weakly enlarged (Fig. 9).

Description of the female

Dimensions *(mm)*.
– *Length*: 27.9-30.7 (incl. mandibles), 24.9-24.3 (excl mandibles).
– *Width*: 10.5-10.9 (at pronotum), 11.5-12.0 (at elytra).

Coloration. – Body convex, black throughout, densely clothed with yellow hairs throughout.

Head. – Small; upper surface densely covered with large punctures which are somewhat confluent; clypeus nearly semicircular, sparsely covered with punctures and yellow hairs. – *Canthus* evenly expanded laterally, covering 2/5 of outer margin of eye. – *Mentum* transversely quadrate, densely covered with large punctures which are somewhat confluent. – *Mandibles* short and robust. – *Antennae* small.

Pronotum. – Convex; widest at middle; lateral margins rounded, nearly straight in basal 2/5; anterior and posterior angles rounded; upper surface densely and shallowly covered with small punctures.

Scutellum. – Nearly semicircular, densely covered with small punctures.

Elytra. – Convex, shiny, surface densely covered with minute punctures and short yellow hairs, humeral angles rounded.

Legs. –Rather robust; protibiae expanded outward, each with 3 sharp outer teeth and with outer apex divaricated; mesotibiae each with 3 sharp outer sines; metatibiae each with 2 sharp outer spines.

Genitalia (as photographed). – Spermatheca slender, tip acute (Fig. 11).

Etymology. – This new species is named for the first author's grandfather, Mr. Bian-Shulin.

Differential Diagnosis. – This new species is similar to *Lucanus liupengyui* Huang & Chen, 2017 from Tibet, China, but differs from the latter in the following characters:

in male:

1) apical part of mandibles weakly curved inward, each with 2 inner teeth at apical 2/5 (strongly curved inward, each with large tooth at middle in the latter);
2) posterior margins of lateral ear-shaped ridges on head not risen upward (strongly risen upward in the latter);
3) elytra shiny;
4) tibiae robuster;
5) in male genitalia, basal piece narrower;

in female:

1) punctures of head larger;
2) punctures of pronotum and elytra clearer;
3) tibiae robuster;
4) mentum transversely quadrate, anterior margin straight (anterior margin rounded, weakly emarginated at middle in the latter);
5) in female genitalia, hemisternite slightly narrower, spermatheca slenderer whose tip acute.

Distribution. – Linzhi, Tibet, China.

Checklist of Lucanus Scopoli from Tibet, China

Lucanus atratus Hope, 1831
Lucanus mearesii Hope, 1842
Lucanus cantori Hope, 1842
Lucanus furcifer Arrow, 1950
Lucanus lunifer franciscae Lacroix, 1971
Lucanus imitator Boucher & Huang, 1991
Lucanus hayashii Nagai, 2000
Lucanus wemckeni Schenk, 2006
Lucanus fryi schepanskii Schenk, 2008
Lucanus nyishwini bretschneideri Schenk, 2008
Lucanus langi Huang, He & Shi 2011
Lucanus choui Huang & Chen, 2013
Lucanus liupengyui Huang & Chen, 2017
Lucanus shulini Bian & Zhan **sp**. **nov**.

Acknowledgments

We would like to express our sincere gratitude to Mr. Zhang-Renzhi (Dalian) for collecting the type specimens of the new species and approving us use the name of the species. We are obliged to Lin-Jingzhi (Taipei) for his help during the study. Our appreciation is also due to all young entomological scientists work in China and their contributions to the development of entomology. The first author also specifically wants to thank Miss. Wang-Xinyi for her support. This study was supported by the Mi Insect Taxonomy Studio (2021).

References

Fujita H., 2010. – The lucanid beetles of the world *Mushi-sya's Iconographic series of Insect* 6. 472pp., 248pls. Mushi-sha, Tokyo.

Huang H. & Chen C.-C., 2010. – *Stag beetles of china I.* 288pp. Formosa Ecological Company, Taiwan.

Huang H. & Chen C.-C., 2013. – *Stag beetles of china II.* 716pp. Formosa Ecological Company, Taiwan.

Huang H. & Chen C.-C., 2017. – *Stag beetles of china III.* 524pp. Formosa Ecological Company, Taiwan.

Résumé

Bian C.-Z. & Zhan Z., 2021. – Une nouvelle espèce du genre *Lucanus* Scopoli, 1763 (Coleoptera, Lucanidae) du Tibet, Chine. *Faunitaxys*, 9(27): 1 – 4.

Un nouveau Lucanidae est décrit du Tibet, Chine : *Lucanus shulini* **n**. **sp**. (Coleoptera: Lucanidae: Lucaninae). Ses caractéristiques morphologiques sont représentées et comparées à celles de l'espèce la plus proche : *Lucanus liupengyui* Huang & Chen, 2017.

Mots clés. – Coleoptera, Lucanidae, *Lucanus*, *shulini*, taxonomie, nouvelle espèce, Tibet, Chine.

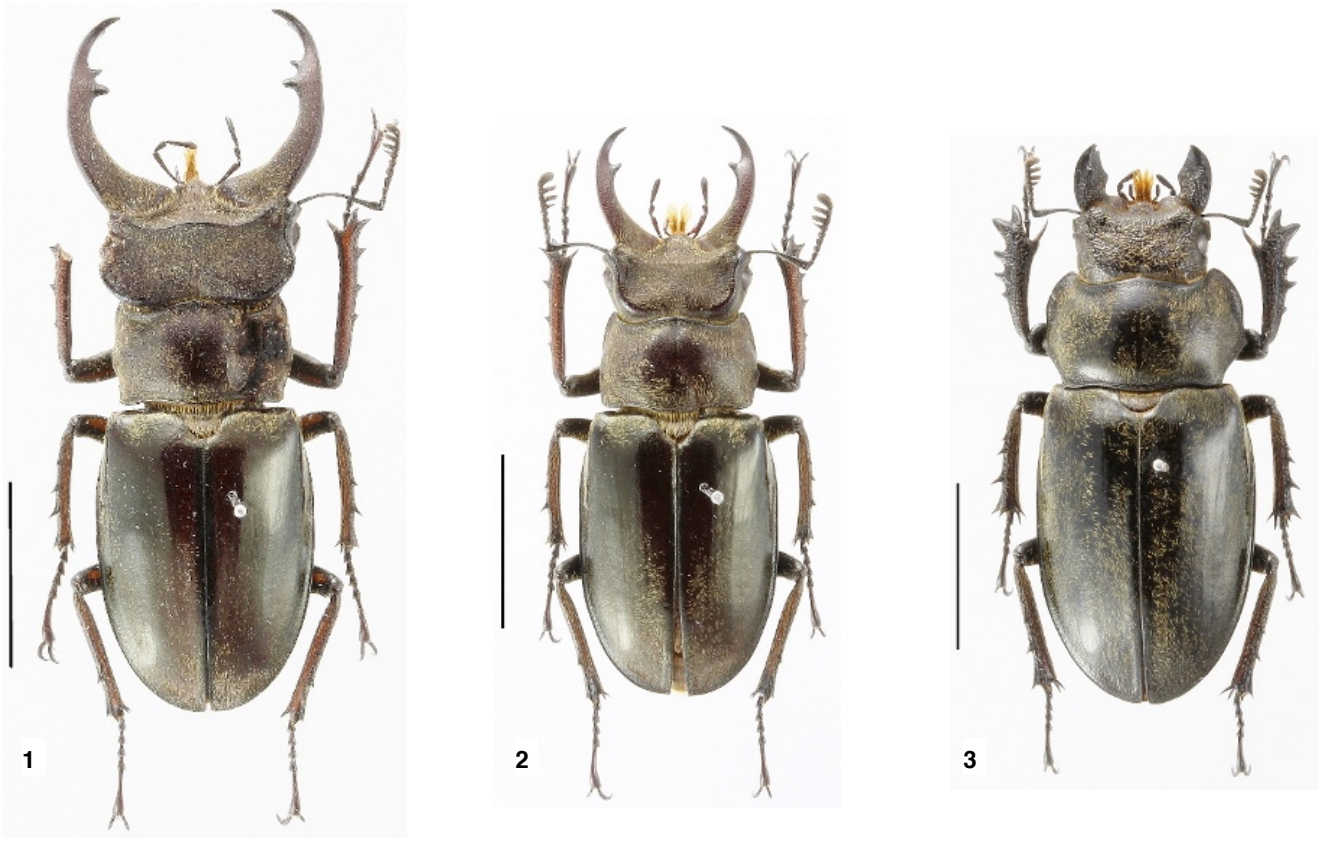

Fig. **1-3**. Habitus of *Lucanus shulini* **sp**. **nov**. (Scale = 10 mm).
1) Male, holotype. **2**) Male, paratype. **3**) Female, paratype.

Fig. **4-6**. Habitus of *Lucanus liupengyui* Huang & Chen, 2017 (from Tibet) (Scale = 10 mm).
4-5) Males. **6**) Female.

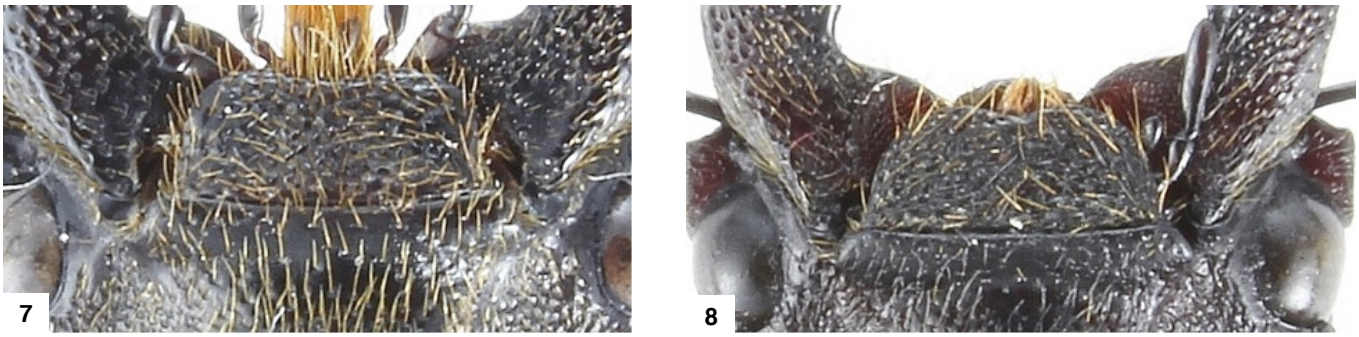

Fig. **7-8**. Mentum of female.
7) *Lucanus shulini* **sp**. **nov**. **8**) *Lucanus liupengyui* Huang & Chen, 2017.

Fig. **9-10**. Male genitalia (a: ventral view, b: lateral view) (Scale = 2 mm).
9) *Lucanus shulini* **sp**. **nov**. **10**) *Lucanus liupengyui* Huang & Chen, 2017.

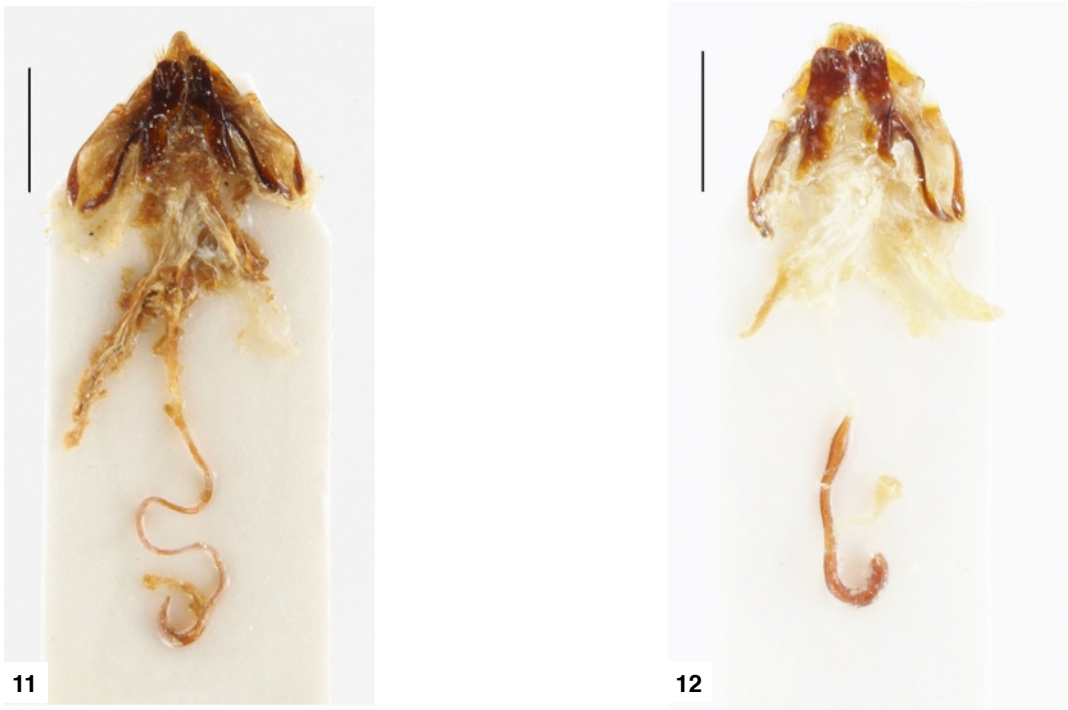

Fig. **11-12**. Female genitalia (Scale = 2 mm).
11) *Lucanus shulini* **sp**. **nov**. **12**) *Lucanus liupengyui* Huang & Chen, 2017.

Derniers articles publiés

Delahaye N., Komiya Z., Drumont A. & Shapovalov A., 2021. – A new species of the genus *Psalidosphryon* Komiya, 2001 from West Papua, Indonesia (Coleoptera, Cerambycidae, Prioninae). *Faunitaxys*, 9(6): 1 – 7.

Lin J.-Z. & Chou W.-I, 2021. – Description of a new species of the genus *Neolucanus* Thomson, 1862 from Taiwan, with new localities record of *N. taiwanus* (Coleoptera, Lucanidae). *Faunitaxys*, 9(7): 1 – 9.

Wang Y., Ehrmann R. & Borer M., 2021. – A new species in the praying mantis genus *Rhombomantis* Ehrmann & Borer (Mantodea: Mantidae) from Indochina. *Faunitaxys*, 9(8) : 1 – 23.

Devesa S., Lingafelter S. W. & Santos-Silva A., 2021. – New species of *Anelaphus* and *Poecilomallus* (Coleoptera, Cerambycidae, Cerambycinae, Elaphidiini) from Nicaragua. *Faunitaxys*, 9(9): 1 – 6.

Oremans P., Pyrcz T. & Zúbrik M., 2021. – Contribution à l'étude des *Euphaedra* de la République Centre Africaine et description d'une nouvelle espèce (Lepidoptera Nymphalidae). *Faunitaxys*, 9(10): 1 – 4.

Oremans P., 2021. – Une forme inédite de *Papilio Menestheus* de République de Côte d'Ivoire (Lepidoptera Papilionidae). *Faunitaxys*, 9(10): 5 – 6.

Ythier E., 2021. – Two new species of *Hadruroides* Pocock, 1893 from Peru and Ecuador (Scorpiones, Caraboctonidae). *Faunitaxys*, 9(11): 1 – 8.

Vives E., 2021. – *Hesperoleptura* nuevo subgénero de Lepturini de las Islas Canarias (Coleoptera, Cerambycidae, Lepturinae). Notes on Lepturinae (21). *Faunitaxys*, 9(12) : 1 – 3.

Lourenço W. R., 2021. – Une nouvelle espèce appartenant au genre *Buthus* Leach, 1815 (Scorpiones : Buthidae) collectée dans le Parc Naturel de la 'Serra da Estrela' au Centre du Portugal. *Faunitaxys*, 9(13) : 1 – 7.

Lourenço W. R. & Velten J., 2021. – One more new genus and species of scorpion from Early Cretaceous Burmese amber (Scorpiones: Protoischnuridae). *Faunitaxys*, 9(14): 1 – 5.

Théry T., 2021. – Description of *Eucurtiopsis marysae* **n**. **sp**., a singular species of Chlamydopsinae from the Philippines (Coleoptera, Histeridae). *Faunitaxys*, 9(15): 1 – 5.

Cumming R. T. & Le Tirant S., 2021. – Review of the Cretaceous †Archaeatropidae and †Empheriidae and description of a new genus and species from Burmese amber (Psocoptera). *Faunitaxys*, 9(16): 1 – 11.

Lourenço W. R., 2021. – Further comments on the elements of the family Palaeoburmesebuthidae Lourenço, 2015 with description of a new species of *Spinoburmesebuthus* Lourenço, 2017 from Early Cretaceous Burmite amber (Scorpiones). *Faunitaxys*, 9(17): 1 – 6.

Zhao M. -Z., 2021. – On the genus *Cyphochilus* Waterhouse, 1867 from Hainan Island, China (Coleoptera: Scarabaeidae: Melolonthinae). *Faunitaxys*, 9(18): 1 – 8.

Cliquennois N., 2021. – Description d'*Achrioptera hugeli*, nouvelle espèce de phasme de la Grande Comore (Phasmatodea, Achriopteridae). *Faunitaxys*, 9(19) : 1 – 7.

Lassalle B. & Roux P., 2021. – Contribution à la connaissance des *Pheropsophus* africains (Coleoptera, Caraboidea, Brachinidae). *Faunitaxys*, 9(20) : 1 – 12.

Ythier E., Sadine S. E., Haddadi M. H. & Lourenço W. R., 2021. – A new species of *Buthus* Leach, 1815 from Algeria (Scorpiones: Buthidae) and an interesting new case of vicariance. *Faunitaxys*, 9(21): 1 – 9.

Zhang Y. & Barclay M. V. L., 2021. – A remarkable new species of Prioninae (Coleoptera: Cerambycidae) from Guadalcanal, Solomon Islands. *Faunitaxys*, 9(22): 1 – 5.

Qi Z.-H., 2021. – *Lucanus moae* **sp**. **nov**., a new species from Sichuan, China (Coleoptera: Lucanidae: Lucaninae). *Faunitaxys*, 9(23): 1 – 7.

Chen Z.-T., 2021. – Checklist and key to the earwig genera from China (Dermaptera). *Faunitaxys*, 9(24): 1 – 8.

Ythier E., 2021. – The southwesternmost scorpion species in Europe: *Buthus gabani* **sp**. **n**. from Cape St. Vincent, Algarve, Portugal (Scorpiones: Buthidae). *Faunitaxys*, 9(25): 1 – 6.

Gomy Y., 2021. – Une anthropoductie accidentelle possible évitée à Madagascar (Coleoptera : Histeridae) (Huitième contribution à la connaissance des Histeridae de Madagascar). *Faunitaxys*, 9(26) : 1 – 3.

Faunitaxys est échangée avec les revues suivantes (« print versions ») :

– Annali del Museo Civico di Storia Naturale G. Doria (Italie)
– Boletín de la Asociación española de Entomología (Espagne)
– Boletín de la Sociedad Andaluza de Entomología (Espagne)
– Bollettino del Museo di Storia Naturale di Venezia (Italie)
– Bulletin de la Société linnéenne de Lyon (France)
– Bulletin of Insectology (Italie)
– Heteropterus Rev. Entomol. (Espagne)
– Israel Journal of Entomology (Israel)
– Klapalekiana (République Tchèque)
– Koleopterologische Rundschau (Allemagne)
– Memorie del Museo Civico di Storia Naturale di Verona (Italie)
– Nova Supplementa Entomologica (Allemagne)
– Proceedings of the Entomological Society of Washington (USA)
– Revue suisse de Zoologie (Suisse)
– Spixiana (Allemagne)
– Stuttgarter Beiträge zur Naturkunde A, Biologie (Allemagne)
– Zoosystematica Rossica (Russie)

Faunitaxys

Volume 9, Numéro 27, Août 2021

SOMMAIRE

CONTENTS

Illustration de la couverture : View of Linzhi City, Tibet, China. Alt. 2100 m. Habitat of *Lucanus shulini* **sp**. **nov**.

Publié par l'Association Française de Cartographie de la Faune et de la Flore (AFCFF)