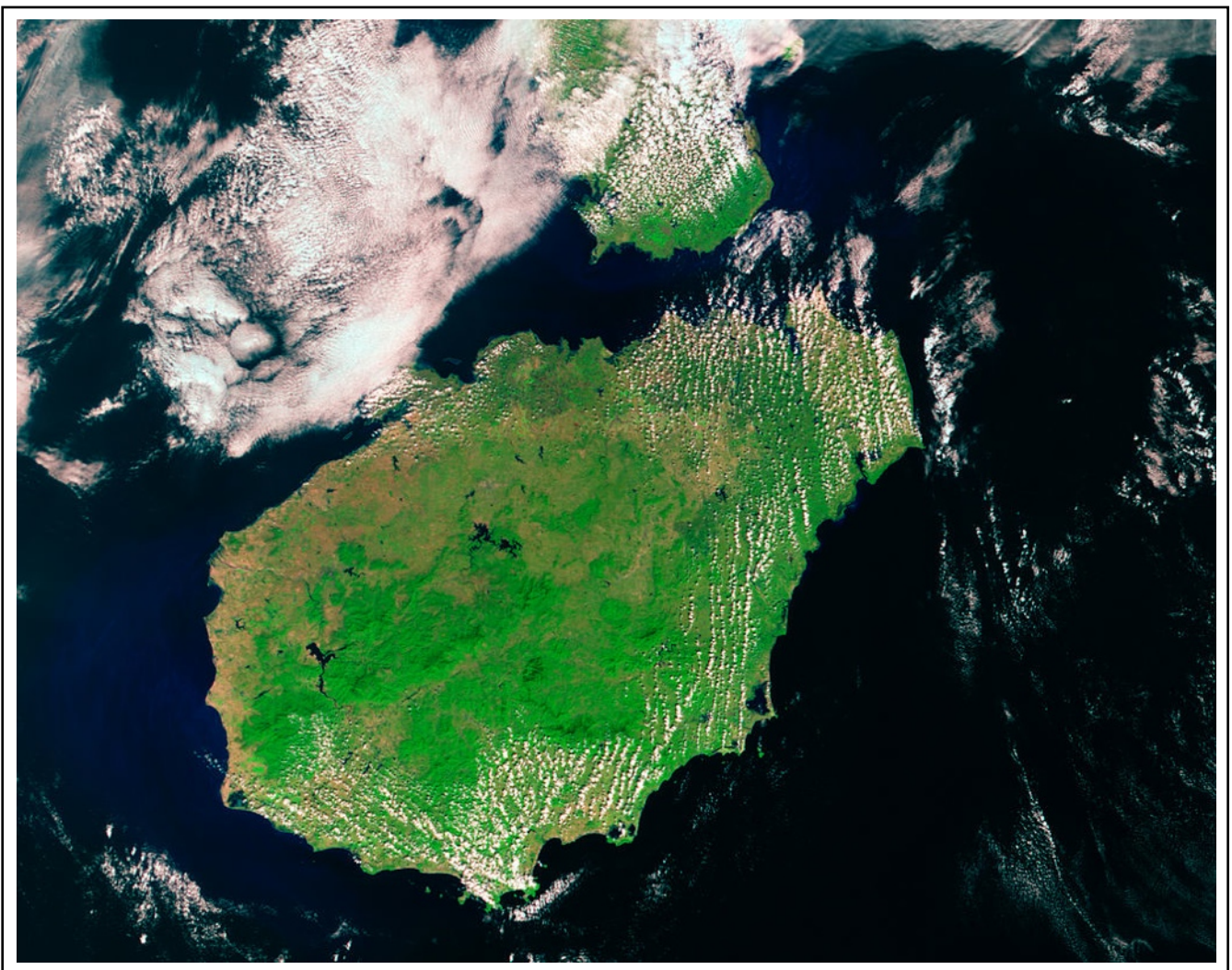


# Faunitaxys

*Revue de Faunistique, Taxonomie et Systématique  
morphologique et moléculaire*



Volume 9  
Numéro 18

Juin 2021

ISSN : 2269 - 6016  
Dépôt légal : Juin 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](mailto: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 10 juin 2021**

# On the genus *Cyphochilus* Waterhouse, 1867 from Hainan Island, China (Coleoptera: Scarabaeidae: Melolonthinae)

MING-ZHI ZHAO

College of Plant Protection, South China Agricultural University, Guangzhou, 510642, P. R. China. - [zhaomzhai@gmail.com](mailto:zhaomzhai@gmail.com)  
- ZooBank : <http://zoobank.org/4C58E8BF-E3AE-4246-BF20-DE92C6DBF1CE>

## Keywords:

Scarabaeoidea; *hlai*;  
Melolonthinae; taxonomy;  
Leucopholini; new species;  
*Cyphochilus*; description;  
*linpinchaoi*; parameres;  
*qiujianyueae*; aberration;  
*lixunae*; Hainan;  
*hainanensis*; China.  
*pseudopodicalis*;

**Abstract.** – The genus *Cyphochilus* Waterhouse, 1867 from Hainan Island of southern China is revised. *Cyphochilus linpinchaoi* sp. nov., *C. qiujianyueae* sp. nov., *C. lixunae* sp. nov., *C. hainanensis* sp. nov. and *C. pseudopodicalis* sp. nov. are described. The variability of *Cyphochilus hlai* Sabatinelli, 2021 is improved.

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

ZooBank: <http://zoobank.org/93941940-A2A3-437F-B16B-AE1C13F5F841>

## Introduction

The Oriental genus *Cyphochilus* Waterhouse, 1867 is easily characterized by the strongly asymmetric labrum among Lamellicornia. Sixteen taxa of genus *Cyphochilus* had been documented from China so far (Sabatinelli, 2020a, 2020b, 2020c; Sabatinelli & Pham, 2021). Hainan and Taiwan are the two largest islands situated along coast of China. Four endemic taxa were described from Taiwan Island, viz. *C. crataceus crataceus* (Nijijima & Matsumura, 1923), *C. crataceus taipeiensis* Kobayashi & Yu, 1993, *C. insulamus* Moser, 1918 and *C. unidentatus* Nomura, 1977. While, on Hainan Island, *C. hlai* Sabatinelli, 2021 is the only known endemic species. Zhang (2002) recorded both *C. farinosus* Waterhouse, 1867 and *C. apicalis* Waterhouse, 1867 from Hainan. Considering the high endemism in insular area like Taiwan Island, the occurrence of the two continental species in Hainan Island seems doubtful.

Several field works were conducted in Hainan in recent years. A large series of *Cyphochilus* was sent to the author for study. Among which, five new species were recognized and described herein.

## Material and methods

Images for external characters and male genitalia were taken using a Canon EOS 760D camera in conjunction with a Tamron 90 mm f/2.8 1:1 Macro Lens and a Laowa 25 mm f/2.8 2.5-5X Ultra Macro Lens, respectively. Zerene Stacker (version 1.04) was used for stacking. All images were modified and arranged to plates in Adobe Photoshop CS5. Type series of species described in the current work were provided with one label “HOLOTYPE [or] PARATYPE *taxon name* det. Zhao Ming-Zhi 2021”.

Specimens studied in this article are deposited in the following public and private collections:

- MYNU: Insect Collection of Mianyang Normal University, Mianyang, China;
- SCAU: South China Agricultural University, Guangzhou, China;
- CLX: Xun Li's personal collection, Qingdao, China;
- CZBX: Bao-Xiang Zhan's personal collection, Guiyang, China;
- CZMZ: Ming-Zhi Zhao's personal collection, Zhuhai, China.

Abbreviations of measurements and ratios follow Sabatinelli, 2020a.

## *Cyphochilus linpinchaoi* sp. nov.

(Fig. 1P, 2F, 3D, 4G-I)

ZooBank : <http://zoobank.org/86CC7AC6-84EA-462A-91BF-9E922080A39C>

**Holotype**, ♂ (SCAU), Hainan, Ledong, Mt. Jianfengling, China, 2018.VIII.5, Pin-Chao Lin leg.

**Description of the holotype** (Fig. 1P, 2F, 3D, 4G-I)

**General appearance.** – Body shape elongated ovoid, broadened behind. BL: 17.5 mm, BW: 7.7 mm, BWX: 8.9 mm, at midpoint of elytra.

**Color.** – Integument dark reddish brown. Dorsal and ventral surface with pale yellowish brown scale, each emerging from a small punctures.

**Head.** – Clypeus subtrapezoidal, CW/L: 3.20, anterior margin reflected. F/O: 3.76, eyes prominent. Antennal club longer than antennomeres 2-7 combined, A2-7L/CL: 0.58, antennomere 7 with several long setae approximately equal to 1/3 of length of antennal club. Scale lance-shaped, dense, being thinner on clypeus and the inner margin of eye, being round and close behind eyes.

**Pronotum.** – PnW/L: 2.00. Anterior margin concave, posterior margin arched at middle. Anterior angle right-angled, posterior angle round. Lateral marginal line complete, other marginal lines absent. Scale lance-shaped, large, moderately dense, somewhat denser along longitudinal midline, being very dense in lateral portions and thus forming a vague band.

**Scutellum.** – Semicircular. Scale lance-shaped, dense.

**Elytra.** – Each elytron with two feebly convex costae. Scale lance-shaped, dense, being sparse and slender at lateral portion. Large, ovoid and lighter scale aggregated at humeral portions and thus forming a patch.

**Pygidium.** – Weakly convex, external margin arched. With dense, small and ovoid scale. Ventral surface with a few minute scale, with some recumbent long setae.

**Ventral thoracic surface.** – Prosternal process tubercular, posterior corner round in lateral view. Mesosternal process acute, MstL: 1.2 mm. With lance-shaped, sparse small scale, being denser at marginal portions. With dense, very long setae.

**Abdominal ventrites.** – With lance-shaped, dense small scale, being round at marginal portions. Medioapical portion of ventrite 6 glabrous.

**Legs.** – Protibia tridentate, apical and middle teeth large and protruding, proximal tooth indistinct. With scattered, lance-shaped small scale.

**Male genitalia.** – As Fig. 4G-I.

**Female.** – Unknown.



**Diagnosis.** – *Cyphochilus linpingchaoi* sp. nov. is closely related to *C. reichenbachi* Sabatinelli, 2020 because of the four appendices on parameres. It is, however, clearly different in shape.

**Remarks.** – *Cyphochilus linpingchaoi* sp. nov. is the first species of Section I (sensu Waterhouse, 1867) known from either an insular area or eastern part of China.

**Etymology.** – The specific epithet is dedicated to Mr. Pin-Chao Lin, who collected the unique specimen of this new species and generously provided material.

***Cyphochilus qiujianyueae* sp. nov.**

(Fig. 1E, 2B, 3C, 4D-F)

ZooBank : <http://zoobank.org/B84B6607-48BA-4477-A941-3C7FD3CEACAA>

**Holotype**, ♂ (MYNU), Hainan, Wuzhishan, China, 2014.V.18-21, Jian-Yue Qiu leg.

**Paratypes** (6 ♂)

– 3 ♂ (MYNU) & 1 ♂ (CZMZ), same data as holotype.

– 2 ♂ (CZMZ), Yunnan, Wenshan, Maguan, Gulinjing Town, 2020.V.2-4, Zheng Zhou leg.

**Description of the holotype** (Fig. 1E, 2B, 3C, 4D-F)

**General appearance.** – Body shape subcylindrical, somewhat compressed. BL: 26.2 mm, BW: 10.6 mm, BWX: 12.6 mm, at posterior third of elytra.

**Color.** – Integument dark reddish brown. Dorsal surface and pygidium with deep yellow scale, ventral surface and legs with pale yellow scale, each emerging from a small punctures.

**Head.** – Clypeus semicircular, CW/L: 2.68, anterior margin strongly reflected. F/O: 4.25, eyes convex. Antennal club longer than antennomeres 2-7 combined, A2-7L/CL: 0.52. Scale lance-shaped, very dense, being thinner at mouth parts.

**Pronotum.** – PnW/L: 1.68. Anterior margin concave, posterior margin arched at middle. Anterior angle round, posterior angle acute. Lateral marginal line complete, other marginal lines absent. Scale lance-shaped, very dense, being round in lateral portions.

**Scutellum.** – Semielliptical, sides concave in basal third. Scale lance-shaped, very dense.

**Elytra.** – Each elytron with five costae (including the sutural one), 4<sup>th</sup> and 5<sup>th</sup> weakly convex, others distinct. Scale lance-shaped, very dense.

**Pygidium.** – Triangular, convex, external margin protruding. Dorsal surface with very dense ovoid scale. Ventral surface broad, without scale, with dense, erect long setae.

**Ventral thoracic surface.** – Prosternal process tubercular, small. With dense ovoid scale and dense, very long setae.

**Abdominal ventrites.** – With very dense, ovoid scale, being quite small at lateral portions. Medioapical portion of ventrite 5 and medial portion of ventrite 6 without scale.

**Legs.** – Protibia bidentate, both teeth round at apices. With sparse, lance-shaped scale.

**Male genitalia.** – As Fig. 4D-F.

**Male paratypes.** – BL: 23.9-25.9 mm, BW: 9.4-10.4 mm, BWX: 11.4-12.5 mm. External and genital characters consistent.

**Female.** – Unknown.

**Diagnosis.** – *Cyphochilus qiujianyueae* sp. nov. is closely related to *C. backy* Sabatinelli, 2020 and *C. dongkinh* Sabatinelli, 2020. The shape of parameres allows a easy separation.

**Etymology.** – The specific epithet is dedicated to Dr. Jian-Yue Qiu, a Chinese Cetoniinae expert, who collected most of the type series of this new species.

***Cyphochilus hainanensis* sp. nov.**

(Fig. 1A-D, 2A, 3A-B, 4A-C, 5F-G)

ZooBank : <http://zoobank.org/9B37B165-F5BC-43A2-A060-FB55E151DDF5>

**Holotype**, ♂ (SCAU), Hainan, Wuzhishan, China, 18.906121 N, 109.678437 E, 709 m, 2021.IV.10–11, light trap, Xun Li & Bao-Xiang Zhan leg.

**Paratypes** (28 ♂ & 6 ♀)

– 19 ♂ & 2 ♀ (CZMZ), 2 ♂ (CLX), 2 ♂ (CZBX), same data as holotype.

– 1 ♂ (CZMZ), Hainan, Qiongzong, Diaoluoshan, Shipo Village, China, 230 m, 2021.IV.9-13, light trap, Zi-Xuan Yang leg.

– 4 ♂ & 3 ♀ (MYNU), Hainan, Wuzhishan, China, 2014.V.18-21, Jian-Yue Qiu leg.

– 1 ♀ (MYNU), Hainan, Limushan, China, 2016.IV.16, Jian-Yue Qiu leg.

**Description of the holotype** (Fig. 1A, 2A, 3A, 4A-C, 5G)

**General appearance.** – Body shape subcylindrical. BL: 27.5 mm, BW: 11.1 mm, BWX: 13.4 mm, at posterior third of elytra.

**Color.** – Integument of head, pronotum, scutellum and elytra dark brown, of other portions reddish brown. Dorsal surface and legs with white scale, distal declivity of elytra with yellow scale, pygidium and ventral surface with pale yellow scale, each emerging from a small punctures.

**Head.** – Clypeus semicircular, CW/L: 2.32, anterior margin strongly reflected. F/O: 3.71, eyes prominent. Antennal club longer than antennomeres 2-7 combined, A2-7L/CL: 0.55. Scale elliptical, very dense, being lance-shaped and thinner at mouth parts.

**Pronotum.** – PnW/L: 1.69. Anterior margin concave, posterior margin arched at middle. Anterior angle round, posterior angle acute. Lateral marginal line complete but indistinct, other marginal lines absent. Scale elliptical, very dense.

**Scutellum.** – Subtriangular, sides distinctly arched. Scale lance-shaped, very dense.

**Elytra.** – Each elytron with five costae (including the sutural one), 4<sup>th</sup> and 5<sup>th</sup> weakly convex, others distinct. Scale lance-shaped, very dense.

**Pygidium.** – Almost equilaterally triangular, convex, external margin protruding. Dorsal surface with very dense, round small scale. Ventral surface broad, with several round scale at sides, with dense, erect long setae, glabrous at central portions.

**Ventral thoracic surface.** – Prosternal process tubercular, small. With dense lance-shaped scale and dense, very long setae.

**Abdominal ventrites.** – With very dense, round small scale, being quite small at lateral portions. Medioapical portion of ventrite 5 and medial portion of ventrite 6 without scale.

**Legs.** – Protibia tridentate, the apical and middle teeth protruding but blunt at apices, the proximal tooth indistinct. With scattered, lance-shaped scale.

**Male genitalia.** – As Fig. 4A-C.

**Male paratypes** (Fig. 1B-C, 5F). – BL: 23.0-27.7 mm, BW: 9.6-11.4 mm, BWX: 11.9-13.9 mm. A2-7L/CL: 0.55-0.60. Scale of head, pronotum, scutellum and elytra varies from white to deep yellow, scale of distal declivity of elytra as well as abdomen varies from ochraceous to brown.

**Female paratypes** (Fig. 1D, 3B). – Generally similar to male. BL: 24.9-27.5 mm, BW: 10.4-11.6 mm, BWX: 12.9-14.2 mm. CW/L: 2.79, anterior margin of clypeus weakly reflected. Antennal club shorter than antennomeres 2-7 combined, A2-7L/CL: 1.21. F/O: 4.67, eyes small. Apical umbone of elytra less developed than in male. Pygidium semicircular, apex in ventral view strongly emarginated, with a short, emarginated apical protrusion in dorsal view. Ventrite 6 strongly sunken. Protibia wider, tarsi shorter than in male.

**Diagnosis.** – *Cyphochilus hainanensis* sp. nov. is closely related to *C. insulanus* Moser, 1918 but the male genitalia are



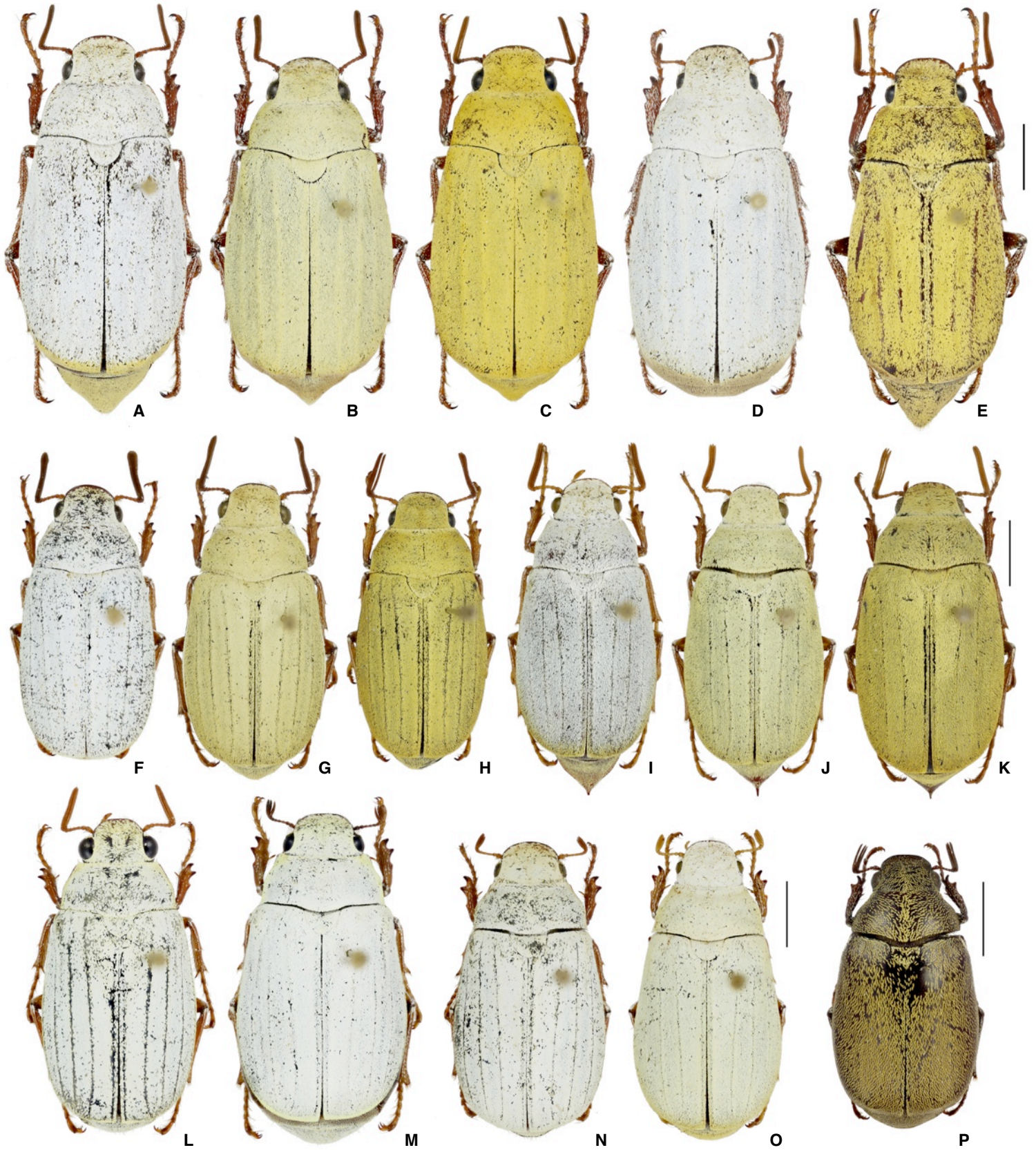


Fig. 1. Habitus of *Cyphochilus* species in dorsal view (Scale = 5 mm).

A-D) *C. hainanensis* sp. nov. E) *C. quijianyueae* sp. nov. F-H, N) *C. lixunae* sp. nov. I-K, O) *C. pseudopodicalis* sp. nov. L-M) *C. hlai* Sabatinelli, 2021. P) *C. linpinchaoi* sp. nov.

A-C, E, F-L, P) Male. D, M-O) Female. A, E, G, J, P) Holotypes. B-D, F, H-I, K, N-O) Paratypes.



quite different. The second upper tooth of right paramere is very large in the new species. Moreover, every part of the parameres is thicker than those in *C. insulanus*.

**Remarks.** – A male with clypeal aberration was captured together with the holotype. The clypeus is almost symmetric and strongly bulging (Fig. 5F).

**Etymology.** – The specific epithet is dedicated to the type locality.

***Cyphochilus lixunae* sp. nov.**

(Fig. 1F-H, 1N, 2D, 3G-H, 4M-O, 5C)

ZooBank : <http://zoobank.org/FA484659-8ACE-4F4E-B862-8FCBEFE30420>

**Holotype**, ♂ (MYNU), Hainan, Jianfengling, Mingfenggu, China, 2016.IV.17-20, Jian-Yue Qiu leg.

**Paratypes** (7 ♂ & 1 ♀)

– 2 ♂ & 1 ♀ (MYNU), Hainan, Wuzhishan, China, 2014.V.18-21, Jian-Yue Qiu leg.

– 5 ♂ (CZMZ), Hainan, Jianfengling, China, 18.707702 N, 108.880240 E, 945 m, 2021.IV.8–9, light trap, Xun Li & Bao-Xiang Zhan leg.

**Description of the holotype** (Fig. 1G, 2D, 3G, 4M-O)

**General appearance.** – Body shape subcylindrical. BL: 20.8 mm, BW: 9.2 mm, BWX: 10.6 mm, behind midpoint of elytra.

**Color.** – Integument dark brown, of legs reddish brown. Dorsal surface with yellow scale, lateral portion of pronotum and elytra (from humeral to apical part), as well as legs with ochraceous scale, pygidium and ventral surface with pale yellow scale, each emerging from a small punctures.

**Head.** – Clypeus semicircular, CW/L: 3.23, anterior margin weakly reflected. F/O: 3.86, eyes prominent. Antennal club longer than antennomeres 2-7 combined, A2-7L/CL: 0.42. Scale lance-shaped, very dense, being round and smaller along margin of eye, being sparse at mouth parts.

**Pronotum.** – PnW/L: 1.75. Anterior margin concave, posterior margin arched at middle. Anterior angle almost right angle, posterior angle blunt. Lateral marginal line complete but indistinct, other marginal lines absent. Lateral margin distinctly concave in anterior half. Scale lance-shaped, very dense, being broader in lateral portions.

**Scutellum.** – Subtriangular, sides distinctly arched. Scale lance-shaped, very dense.

**Elytra.** – Each elytron with five costae (including the sutural one), 4<sup>th</sup> and 5<sup>th</sup> weakly convex, others distinct. Scale lance-shaped, very dense.

**Pygidium.** – Subtriangular, convex, external margin round. Dorsal surface with very dense, lance-shaped scale.

**Ventral thoracic surface.** – Prosternal process small, posterior angle arched in lateral view. Ventral pro- and mesothoracic surface with dense lance-shaped scale, ventral metathoracic surface with scattered spiniform scale. Ventral thoracic surface excluding mesoventrite with dense long setae, rather long in metathoracic surface.

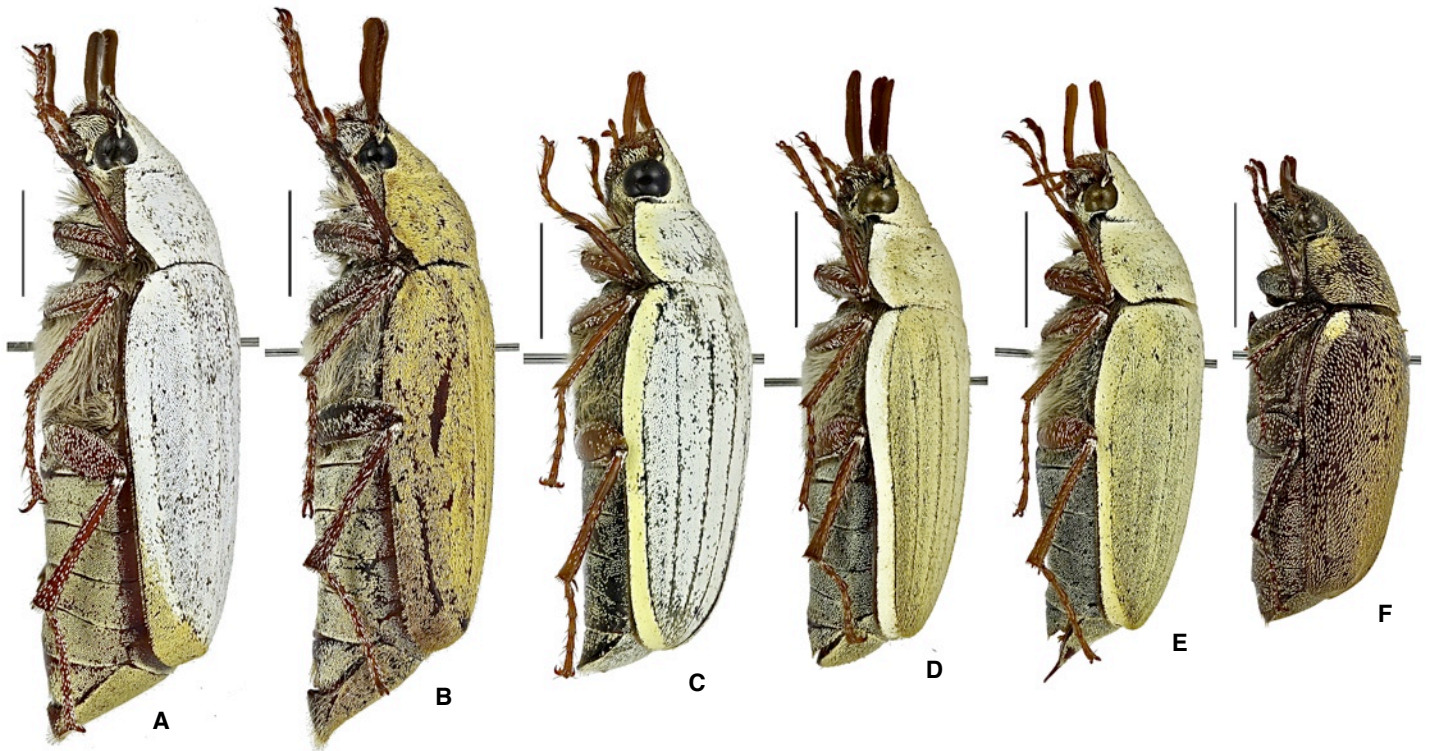
**Abdominal ventrites.** – With dense, lance-shaped scale, being smaller at lateral portions. Medioapical portion of ventrite 5 and narrow medial portion of ventrite 6 without scale.

**Legs.** – Protibia tridentate, all teeth protruding and acute at apices, the proximal tooth smaller. With scattered, spiniform scale.

**Male genitalia.** – As Fig. 4M-O.

**Male paratypes** (Fig. 1F, 1H). – BL: 19.6-20.4 mm, BW: 8.4-8.9 mm, BWX: 9.8-10.3 mm. Scale of dorsal surface varies from white to dark yellow, sometimes elliptical, scale of lateral portions of pronotum and elytra varies from white to ochraceous.

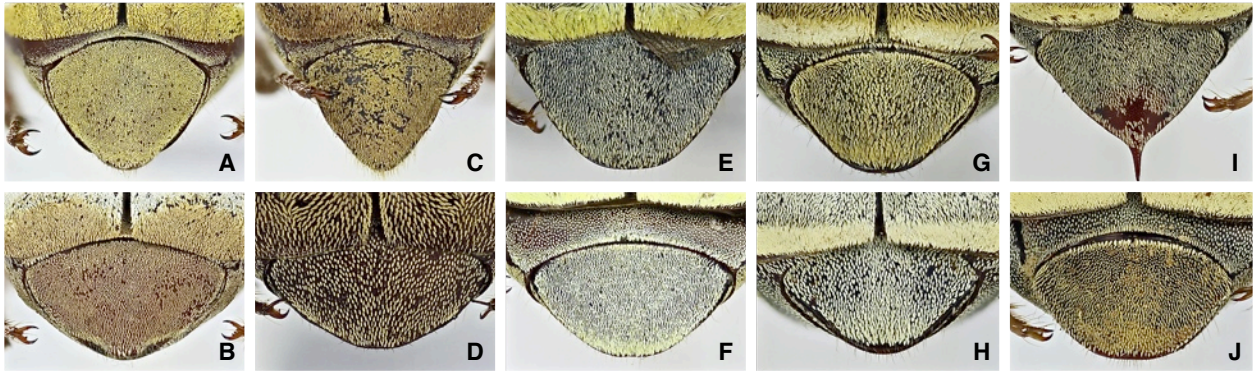
**Female paratype** (Fig. 1N, 2D, 3H, 5C). – Generally similar to male. Scale elliptical, on dorsal surface including pygidium white, on lateral portions of pronotum and elytra, as well as ventral surface ochraceous. BL: 21.3 mm, BW: 9.5 mm, BWX: 11.0 mm. Antennal club shorter than antennomeres 2-7 combined, A2-7L/CL: 1.34. F/O: 5.0, eyes small. PnW/L: 1.70. Scutellum semicircular. Pygidium wider, protarsal teeth larger than in male. Scale being sparse on medial portions of abdominal ventrites. Protibia wider, tarsi shorter than in male.



**Fig. 2.** Habitus of male of *Cyphochilus* species in lateral view (Scale = 5 mm).

A) *C. hainanensis* sp. nov., holotype. B) *C. qiujianyueae* sp. nov., holotype. C) *C. hlai* Sabatinelli, 2021. D) *C. lixunae* sp. nov., holotype. E) *C. pseudopodicalis* sp. nov., holotype. F) *C. linpinchaoi* sp. nov., holotype.





**Fig. 3.** Pygidium of *Cyphochilus* species (Not to scale).

A) *C. hainanensis* sp. nov., holotype. B) ditto, female paratype. C) *C. qiujianyueae* sp. nov., holotype. D) *C. linpinchaoi* sp. nov., holotype. E) *C. hlai* Sabatinelli, 2021, male. F) ditto, female. G) *C. lixunae* sp. nov., holotype. H) ditto, female paratype. I) *C. pseudopodicalis* sp. nov., holotype. J) ditto, female paratype.



**Fig. 4.** Male genitalia of *Cyphochilus* species (Scale = 2 mm).

A-C) *C. hainanensis* sp. nov., holotype. D-F) *C. qiujianyueae* sp. nov., holotype. G-I) *C. linpinchaoi* sp. nov., holotype. J-L) *C. pseudopodicalis* sp. nov., holotype. M-O) *C. lixunae* sp. nov., holotype. P-R) *C. hlai* Sabatinelli, 2021.

A, D, G, J, M, P) Left lateral view. B, E, H, K, N, Q) Dorsal view. C, F, I, L, O, R) Right lateral view.



**Diagnosis.** – *Cyphochilus lixunae* sp. nov. is most similar to *C. crataceus crataceus* (Nijjima & Matsumura, 1923) but the apex of paramere round in lateral view (acute in *C. crataceus crataceus*). *C. crataceus taipeiensis* Kobayashi & Yu, 1993, whose apical thorn of paramere strongly upright, might deserve a specific rank. However, no specimens are available for the author to support this hypothesis.

**Etymology.** – The specific epithet is dedicated to Ms. Xun Li, who collected part of the type series of this new species.

***Cyphochilus pseudopodicalis* sp. nov.**

(Fig. 1I–K, 1O, 2E, 3I–J, 4J–L, 5D–E)

ZooBank : <http://zoobank.org/D0CB7144-A49C-4182-9727-8263709379CF>

**Holotype**, ♂ (MYNU), Hainan, Limushan, China, 2016.IV.16, Jian-Yue Qiu leg.

**Paratypes** (9♂ & 4♀)

– 2♂ & 1♀ (MYNU), same data as holotype.

– 2♂ & 1♀ (CZMZ), Hainan, Ledong, Mt. Jianfengling (main peak), 960 m, China, 2020.IV.4–10, Pin-Chao Lin leg.

– 2♂ & 1♀ (CZMZ), Hainan, Jianfengling, 18.707702 N, 108.880240 E, 945 m, China, 2021.IV.8–9, light trap, Xun Li & Bao-Xiang Zhan leg.

– 2♂ (CZMZ) & 1♂ (CZBX), Hainan, Wuzhishan, 18.906121 N, 109.678437 E, 709 m, China, 2021.IV.10–11, light trap, Xun Li & Bao-Xiang Zhan leg.

– 1♀ (MYNU), Hainan, Diaoluoshan, China, 2014.V.23, Jian-Yue Qiu leg.

**Description of the holotype** (Fig. 1J, 2E, 3I, 4J–L)

**General appearance.** – Body shape subcylindrical. BL: 20.6 mm, BW: 8.6 mm, BWX: 10.3 mm, behind midpoint of elytra.

**Color.** – Integument dark brown, of legs reddish brown. Dorsal surface with yellow scale, scale darker above the distal declivity, pygidium and ventral surface with pale yellow scale, legs with white scale, each emerging from a small punctures.

**Head.** – Clypeus semicircular, CW/L: 3.45, anterior margin weakly reflected. F/O: 3.68, eyes prominent. Antennal club longer than antennomeres 2–7 combined, A2–7L/CL: 0.49. Scale lance-shaped, very dense, being round and smaller along margin of eye, being sparse at mouth parts.

**Pronotum.** – PnW/L: 1.85. Anterior margin concave, posterior margin arched at middle. Anterior angle almost right angle, slightly protruding, posterior angle blunt. Lateral marginal line complete but indistinct, other marginal lines absent. Lateral margin distinctly concave in anterior half. Scale lance-shaped, very dense.

**Scutellum.** – Semicircular. Scale lance-shaped, very dense.

**Elytra.** – Each elytron with five weakly convex costae (including the sutural one). Scale lance-shaped, stouter than those on head, pronotum and scutellum, very dense.

**Pygidium.** – Almost equilaterally triangular, convex, apex strongly protruding, forming a large and sharp thorn. Dorsal surface with very dense, spiniform scale.

**Ventral thoracic surface.** – Prosternal process small, triangular in lateral view. Ventral pro- and mesothoracic surface with dense lance-shaped scale, ventral metathoracic surface with scattered spiniform scale. Ventral thoracic surface with dense long setae, rather long in metathoracic surface.

**Abdominal ventrites.** – With dense, lance-shaped small scale. Narrow medial portion of ventrite 6 without scale.

**Legs.** – Protibia tridentate, all teeth protruding and acute at apices, the proximal tooth smaller. With scattered, spiniform scale.

**Male genitalia.** – As fig. 4J–L.

**Male paratypes** (Fig. 1I, 1K). – BL: 20.4–21.5 mm, BW: 8.6–9.4 mm, BWX: 10.3–11.0 mm. Scale of dorsal surface varies from white to

deep yellow, scale of lateral portions of pronotum and elytra varies from white to pale yellow.

**Female paratypes** (Fig. 1O, 3J, 5D–E). – Generally similar to male. Scale on dorsal surface varies from ochraceous to pale yellow. BL: 21.2–24.4 mm, BW: 9.0–10.4 mm, BWX: 10.9–12.1 mm. Antennal club shorter than antennomeres 2–7 combined, A2–7L/CL: 1.30. F/O: 5.0, eyes small. PnW/L: 1.54–1.70. Pygidium semicircular. Scale being sparse on medial portions of abdominal ventrites. Protibia wider, protarsal teeth larger than in male, the largest female has all teeth round at apices (Fig. 5E), tarsi shorter than in male.

**Diagnosis.** – *Cyphochilus pseudopodicalis* sp. nov. is closely allied to *C. podicalis* Moser, 1908, but the apical thorn of pygidium is much sharper and the apices of parameres are shorter.

**Etymology.** – The specific epithet indicates its similarity to *Cyphochilus podicalis* Moser, 1908.

***Cyphochilus hlai* Sabatinelli, 2021**

(Fig. 1L–M, 2C, 3E–F, 4P–R, 5A–B)

*Cyphochilus hlai* Sabatinelli, 2021 in Sabatinelli & Phạm 2021: 163 [type locality: Mt. Limushan of Hainan].

**Material examined** (115♂ & 3♀)

– 12♂ (CZMZ), Hainan, Ledong, Mt. Jianfengling (main peak), 960 m, China, 2020.IV.4–10, Pin-Chao Lin leg.

– 101♂ (CZMZ), Hainan, Wuzhishan, 18.906121 N, 109.678437 E, 709 m, China, 2021.IV.10–11, light trap, Xun Li & Bao-Xiang Zhan leg.

– 2♂ & 2♀ (MYNU), Hainan, Wuzhishan, China, 2014.V.18–21, Jian-Yue Qiu leg.

– 1♀ (MYNU), Hainan, Wuzhishan, Shuimanxiang Township, Xincun Village, 450 m, China, Hao Xu & Cheng-Qing Liao leg.

**Remarks.** – Examined material from Wuzhishan and Jianfengling has deeper concavity on the left paramere (Fig. 4P–R) compared to the holotype. But there are no structural differences. This species is sympatric with *Cyphochilus lixunae* sp. nov. and *C. pseudopodicalis* sp. nov. in Wuzhishan and Jianfengling. Those medium-sized females of the three species appear to be quite similar at first glance. The female of *C. hlai* has more prominent eyes (F/O: 4.1). The female of *C. lixunae* and *C. pseudopodicalis* can be separated by the space between middle and proximal protarsal teeth (Fig. 5C–E).

**Acknowledgments**

The author is grateful to Mr. Pin-Chao Lin, Mrs. Xun Li, Mr. Bao-Xiang Zhan (all SCAU), Dr. Jian-Yue Qiu, Dr. Hao Xu (both MYNU), Mr. Zheng Zhou (Sichuan Agricultural University) and Mr. Zi-Xuan Yang (Hainan University) for donation or loan of valuable specimens and their continued supports.

**References**

- Kobayashi H. & Yu C.K., 1993. – Notes on the genus *Cyphochilus* from Taiwan (Coleoptera, Scarabaeidae). *Chinese Journal of Entomology*, 13: 347–353.
- Sabatinelli G., 2020a. – Taxonomic notes on the genus *Cyphochilus* Waterhouse, 1867 (Coleoptera, Scarabaeoidea, Melolonthinae) with description of 10 new species. *Revue suisse de Zoologie*, 127(1): 157–181.
- Sabatinelli G., 2020b. – Taxonomic notes on the genus *Cyphochilus* Waterhouse, 1867 (Coleoptera, Scarabaeoidea, Melolonthinae) (part 2) with description of nine new species and a new subspecies. *Munis Entomology and Zoology Journal*, 15(2): 301–318.



Sabatinelli G., 2020c. – Taxonomic notes on the genus *Cyphochilus* (Coleoptera, Scarabaeoidea, Melolonthinae) (part 3) with description of three new species from Indochina. *Acta Societatis Zoologicae Bohemicae*, 84: 51-65.

Sabatinelli G. & Phạm P., 2021. – Taxonomic notes on the genus *Cyphochilus* (Coleoptera: Scarabaeoidea: Melolonthinae) (part 4) with description of eight new species from Indochina and China. *Revue suisse de Zoologie*, 128(1): 157-172.

Waterhouse C.O., 1867. – On some new lamellicorn beetles belonging to the family Melolonthidae. *The Entomologist's Monthly Magazine*, 4: 141-146.

Zhang Y.W., 2002. – Scarabaeoidea. In: Huang F.S. (Ed.), *Forest Insects of Hainan*. Science Press, Beijing, pp. 327–336 [in Chinese, English descriptions for new taxa].

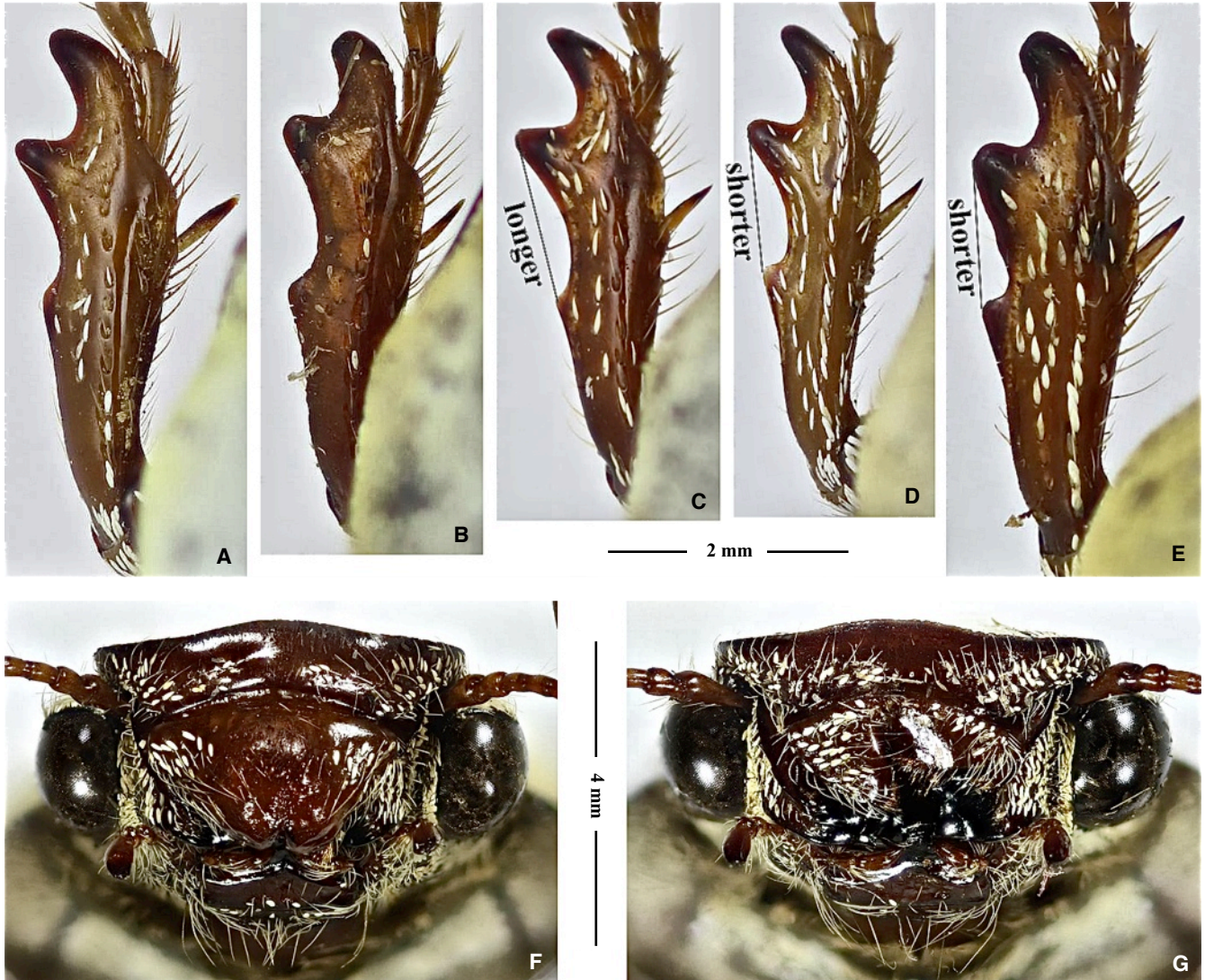


Fig. 5. Detailed characters of *Cyphochilus* species.

A-B) Protibia of *C. hlai* Sabatinelli, 2021, females. C) *C. lixunae* sp. nov., female paratype. D-E) *C. pseudopodicalis* sp. nov., female paratypes. F) *C. hainanensis* sp. nov., male paratype, head in frontal view showing clypeal aberration. G) *C. hainanensis* sp. nov., holotype, head in frontal view.

## Résumé

Zhao M. -Z., 2021. – A propos du genre *Cyphochilus* Waterhouse, 1867 dans l'île d'Hainan, Chine (Coleoptera: Scarabaeidae: Melolonthinae). *Faunitaxys*, 9(18): 1 – 8.

Les espèces du genre *Cyphochilus* Waterhouse, 1867 de l'île d'Hainan (sud de la Chine) sont révisées. *Cyphochilus linpinchaoi* sp. nov., *C. qiujianyueae* sp. nov., *C. lixunae* sp. nov., *C. hainanensis* sp. nov. et *C. pseudopodicalis* sp. nov. sont décrites. La variabilité de *Cyphochilus hlai* Sabatinelli, 2021 est étudiée.

Mots-clés. – Scarabaeoidea, Melolonthinae, Leucopholini, *Cyphochilus*, *linpinchaoi*, *qiujianyueae*, *lixunae*, *hainanensis*, *pseudopodicalis*, *hlai*, taxonomie, nouvelle espèce, description, paramères, aberration, Hainan, Chine.





Fig. 6. Natural habitat of *Cyphochilus* sp.

---

### Derniers articles publiés

- Gerstmeier R., 2020. – *Trogodendron bartolozzii*, a new species of Cleridae from Australia (Coleoptera: Cleridae: Clerinae). *Faunitaxys*, 8(12) : 1 – 2.
- Keith D., 2020. – Description d'espèces nouvelles du genre *Miridiba* Reitter, 1902 (Coleoptera: Scarabaeidae, Melolonthinae, Rhizotrogini). *Faunitaxys*, 8(13) : 1 – 5.
- Vives E., 2020. – Descripción de dos nuevos Lepturini del sudeste asiático (Coleoptera Cerambycidae). Notes on Lepturinae (20). *Faunitaxys*, 8(14) : 1 – 3.
- Théry T. & Sokolov A. V., 2020. – *Eucurtiopsis davaoensis* n. sp., a new Chlamydopsinae from Philippines (Coleoptera, Histeridae). *Faunitaxys*, 8(15) : 1 – 5.
- Bezark L. G. & Santos-Silva A., 2020. – Three new genera and three new species of American Cerambycidae (Coleoptera). *Faunitaxys*, 8(16) : 1 – 11.
- Devesa S. & Santos-Silva A., 2020. – A new species of *Pseudosparna* Mermudes & Monné, 2009 from Costa Rica (Coleoptera, Cerambycidae, Lamiinae). *Faunitaxys*, 8(17) : 1 – 5.
- Gomy Y., 2020. – Description de deux nouvelles espèces de *Cylistosoma* Lewis, 1905 de Madagascar (Coleoptera, Histeridae) (Septième contribution à la connaissance des Histeridae de Madagascar). *Faunitaxys*, 8(18) : 1 – 7.
- Porion T. & Audibert C., 2020. – Sur deux nouvelles espèces de Fulgoridae des Philippines (Hemiptera : Fulgoromorpha). *Faunitaxys*, 8(19) : 1 – 5.
- Bezark L. G., Santos-Silva A. & Devesa S., 2020. – New species of *Amphicnaeia* Bates, 1866, and key to species of the genus (Coleoptera, Cerambycidae, Lamiinae, Apomecynini). *Faunitaxys*, 8(20) : 1 – 13.
- Limoges R. & Le Tirant S., 2020. – Description d'une nouvelle espèce du genre *Eupholus* de Papouasie occidentale, Indonésie (Coleoptera, Curculionidae, Entiminae). *Faunitaxys*, 8(21) : 1 – 5.
- Gomy Y. & Tishechkin A., 2020. – Contribution à la connaissance des Histeridae de l'archipel du Vanuatu (Coleoptera). 3. *Faunitaxys*, 8(22) : 1 – 20.
- Huchet J-B., 2020. – Un nouveau *Phoberus* MacLeay, 1819, aptère du KwaZulu-Natal (Coleoptera : Scarabaeoidea : Trogidae). *Faunitaxys*, 8(23) : 1 – 5.
- Devesa S. & Santos-Silva A., 2021. – Description of two new species of Hemilophini (Coleoptera, Cerambycidae, Lamiinae). *Faunitaxys*, 9(1) : 1 – 6.
- Lin J.-Z., 2021. – Description of *Lucanus yulaoensis* sp. nov., a new species stag beetle from northern Taiwan (Coleoptera, Lucanidae). *Faunitaxys*, 9(2) : 1 – 5.
- Wappes J. E. & Santos-Silva A., 2021. – Descriptions, transference, notes and designation of lectotype in Rhinotragini (Coleoptera, Cerambycidae, Cerambycinae). *Faunitaxys*, 9(3) : 1 – 12.



- Gao H. R. & Liang L., 2021. – A new subspecies of *Trachythorax* Redtenbacher, 1908 (Phasmatodea: Necrosiinae) from Yunnan, China. *Faunitaxys*, 9(4): 1 – 5.
- Ythier E. & Dupré G., 2021. – Description of a new species of *Hottentotta* Birula, 1908, from the Democratic Republic of the Congo (Scorpiones, Buthidae). *Faunitaxys*, 9(5): 1 – 5.
- 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 *Hadruioides* 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 – 12.
- 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 Burmese amber (Scorpiones). *Faunitaxys*, 9(17): 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 *Hadruioides* 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 Burmese amber (Scorpiones). *Faunitaxys*, 9(17): 1 – 6.

### **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 (Israël)
- 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 18, Juin 2021*

## SOMMAIRE

A propos du genre *Cyphochilus* Waterhouse, 1867 dans l'île d'Hainan, Chine (Coleoptera: Scarabaeidae: Melolonthinae).

*Ming-Zhi Zhao* ..... 1 – 8

## CONTENTS

On the genus *Cyphochilus* Waterhouse, 1867 from Hainan Island, China (Coleoptera: Scarabaeidae: Melolonthinae).

*Ming-Zhi Zhao* ..... 1 – 8

**Illustration de la couverture** : Île d'Hainan, Chine (photo satellite).

Crédits photos:

@ **Ming-Zhi Zhao** : Fig. 1-5.

@ **Dr. Hao Xu** : Fig. 6.