One new species in the genus *Paleosepharia* Laboissiere (Coleoptera: Chrysomelidae: Galerucinae) from China

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Abstract: A new species, *Paleosepharia paraposticata* **sp. nov.**, is described and illustrated. A checklist and key to all known species of the genus *Paleosepharia* from China are provided.

Key words: Chrysomeloidea; taxonomy; key

凹翅萤叶甲属 *Paleosepharia* 一新种（鞘翅目：叶甲科：萤叶甲亚科）

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摘要：记述凹翅萤叶甲属 *Paleosepharia* 1 新种：伪核桃凹翅萤叶甲 *Paleosepharia paraposticata* **sp. nov.**，提供了新种的成虫外部形态及雄性外生殖器特征图，以及中国该属名录和分种检索表。

关键词：叶甲总科；分类；检索表

Introduction

The leaf-beetle genus *Paleosepharia* is one of the relatively large genera in Galerucinae (Coleoptera: Chrysomelidae). There are 84 species distributed in the Oriental and Palaearctic regions (Nie *et al.* 2017; Nguyen & Gómez-Zurita 2017; Romantsov 2018; Lee 2018). The genus *Paleosepharia* was established by Laboissière in 1936 with *Paleosepharia truncata*, 1936 from Cochinchina, Vietnam as the type species. Rizki *et al.* (2016) re-described the type specimens of *P. truncate* Laboissière, 1936 and illustrated the male genital characters for the first time. Gressitt & Kimoto (1963) transferred *Monolepta excavate* Chûjô, 1938 from Taiwan to *Paleosepharia.* Yang *et al*. (2015) recorded and compiled a key to 22 species of *Paleosepharia* distributed in China. Lee (2018) transferred 4 species of the genus *Monolepta* Chevrolat, 1836 from Taiwan to *Paleosepharia* Laboissière, 1936 [*P. amiana* (Chûjô, 1962), *P. formosana* (Chûjô, 1935), *P. nantouensis* (Kimoto, 1996) and *P. yasumatsui* (Kimoto, 1969)] and re-described *P. excavate* (Chûjô). Feng *et al*. (2025) described 2 species of *Paleosepharia*

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from China: *P. subrubra* Feng, Yang & Ge, 2025 and *P. emeiensis* Feng, Yang & Ge, 2025, firstly reported *P. truncata* Laboissière, 1936 from China, transferred 2 species of the genus *Monolepta* to *Paleosepharia* (*P. bicavipennis* Chen, 1942 and *P. quadricavata* Chen, 1976) and provided a key to the Chinese species of *Paleosepharia*. To date, 32 species of the genus *Paleosepharia* have been reported from China.

In this paper, we describe a new species in the genus *Paleosepharia*, collected from Sichuan and Chongqing, China. Meanwhile, we update the key of the genus *Paleosepharia* from China provided by Feng *et al.* (2025) with this new species.

Material and methods

The type specimens of this new species are deposited in the collections of the Entomological Museum, Northwest A&F University, Yangling, China.

The extraction of genitalia was performed under a MOTIC K SERIES stereomicroscope. The specimen was placed under the stereomicroscope with the ventral side facing up. The tip of a tweezers was inserted into the thoraco-abdominal joint; then, the entire abdomen was pried and removed. The whole abdomen was boiled in a 10% NaOH solution for about 5–7 min (the specific time depending on the ossification degree of the specimen). It was then taken out when the muscle had dissolved completely. The treated abdomen was rinsed in distilled water and placed in a clean petri dish with the ventral side facing up, followed by extraction of the external genitalia with tweezers. The abdomen and external genitalia were stored together in a micro-centrifuge tube with glycerin, and the centrifuge tube was pinned with the needle specimen on the same needle.

All photographs were taken using a Canon EOS R7 digital camera with an attached LAOWA 65 mm F2.8 lens for the habitus and LAOWA LW-FF 25 mm f/2.8 2.5–5.0X Ultra Macro lens for the genitals. Stacking of all images was done using Helicon Focus 7.6.1 software and the resulting output was retouched using Adobe Photoshop 2022.

Taxonomy

Genus *Paleosepharia* Laboissière

Paleosepharia Laboissière, 1936: 251.

Type species. *Paleosepharia truncata* Laboissière, 1936.

Diagnosis. Head partially hidden under pronotum, vertex with a median furrow, post antennal tubercle undeveloped; distinctly raised between antennae; antennae longer than half length of body, antennomere II shortest, antennomere III second shortest. Pronotum about equal in width to head, wider than long, bordered all around; disc not depressed with distinct punctures. Scutellum triangular. Elytra wider than pronotum; humeral not distinctly protruding; elytra nearly parallel-sided, apex truncate or rounded; disc with distinct punctures, male with one pair of depressions behind scutellum on the elytron, female normal; epipleurae wide at base, gradually narrowing towards apex or subapex. Leg slim, front coxal cavities closed; tibiae spined apically, hind tarsal segment I longer than sum of lengths of remaining segments; claws appendiculate. Last sternite of male trilobed.

The genus *Paleosepharia* is similar to some species of *Monolepta* Chevrolat and *Atrachya* Chevrolat. They can be distinguished by prothoracic coxal cavities, sexually dimorphic elytra and dorsally recurved aedeagus. In *Paleosepharia* and *Monolepta*, prothoracic coxal cavities are closed. Whereas in *Atrachya*, prothoracic coxal cavities are open (Lee 2020). In *Paleosepharia*, subscutellar bulges or incised ridges are on elytra in males only and aedeagus recurves dorsally. Whereas in *Monolepta*, subscutellar bulges or incised ridges are on elytra in both sexes and the aedeagus is recurved ventrally (Mohamedsaid 1996; Wagner 2007; Rizki *et al.* 2016; Lee 2018).

Distribution. Oriental and Palaearctic regions.

Checklist of species of the genus *Paleosepharia* from China

1. *P. amiana* (Chûjô, 1962) — China (Taiwan)
2. *P. basipennis* Gressitt & Kimoto, 1963 — China (Hainan, Guangxi)
3. *P. basituberculata* Chen & Jiang, 1984 — China (Yunnan)
4. *P. bicavipennis* (Chen, 1942) — China (Gansu, Shanxi, Shaanxi, Henan, Anhui, Zhejiang, Hubei, Jiangxi, Hunan, Guangxi, Guizhou, Yunnan)
5. *P. castanoceps* Chen & Jiang, 1984 — China (Yunnan)
6. *P. caudata* Chen & Jiang, 1984 — China (Yunnan)
7. *P. emeiensis* Feng, Yang & Ge, 2025 — China (Sichuan)
8. *P. excavata* (Chûjô, 1938) — China (Gansu, Shaanxi, Taiwan, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan, Zhejiang, Hubei, Hunan, Fujian, Jiangsu, Jiangxi)
9. *P. fasciata* Gressitt & Kimoto, 1963 — China (Guangdong)
10. *P. fulvicornis* Chen, 1942 — China (Zhejiang, Hubei, Hunan, Fujian, Guangdong, Hainan, Guangxi, Sichuan, Guizhou, Yunnan); Vietnam
11. *P. fusiformis* Chen & Jiang, 1984 — China (Yunnan)
12. *P. formosana* (Chûjô, 1935) — China (Taiwan)
13. *P. gongshana* Chen & Jiang, 1986 — China (Yunnan)
14. *P. humeralis* Chen & Jiang, 1984 — China (Yunnan)
15. *P. jiangae* Beenen, 2008 — China (Yunnan, Xizang)
16. *P. J-signata* Chen & Jiang, 1984 — China (Yunnan, Hubei)
17. *P. kolthoffi* Laboissière, 1938 — China (Shaanxi, Hubei, Jiangsu, Anhui, Zhejiang, Guizhou)
18. *P. lingulata* Chen & Jiang, 1984 — China (Yunnan)
19. *P. liquidambara* Gressitt & Kimoto, 1963 — China (Gansu, Jiangsu, Anhui, Zhejiang, Hubei, Jiangxi, Hunan, Fujian, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan)
20. *P. nantouensis* (Kimoto, 1996) — China (Taiwan)
21. *P. orbiculata* Chen & Jiang, 1984 — China (Yunnan)
22. *P. pallens* Chen, 1998 — China (Fujian)
23. *P. paraposticata* **sp. nov.** — China (Sichuan, Chongqing)
24. *P. posticata* Chen, 1942 — China (Shaanxi, Hebei, Hubei, Sichuan, Chongqing)
25. *P. quadricavata* (Chen *et al*., 1976) — China (Yunnan, Xizang); Nepal
26. *P. quercicola* Chen & Jiang, 1984 — China (Liaoning)

27. *P. subnigra* Gressitt & Kimoto, 1963 — China (Jiangxi)
28. *P. subrubra* Feng, Yang & Ge, 2025 — China (Fujian, Guangdong)
29. *P. tibialis* Chen & Jiang, 1984 — China (Guangxi)
30. *P. truncata* Laboissière, 1936 — China (Yunnan); Vietnam; Thailand; Laos
31. *P. truncatipennis* Chen & Jiang, 1984 — China (Jiangxi)
32. *P. verticalis* Chen & Jiang, 1984 — China (Yunnan)
33. *P. yasumatsui* (Kimoto,1969) — China (Taiwan)

***Paleosepharia paraposticata* sp. nov.** (Fig. 1)

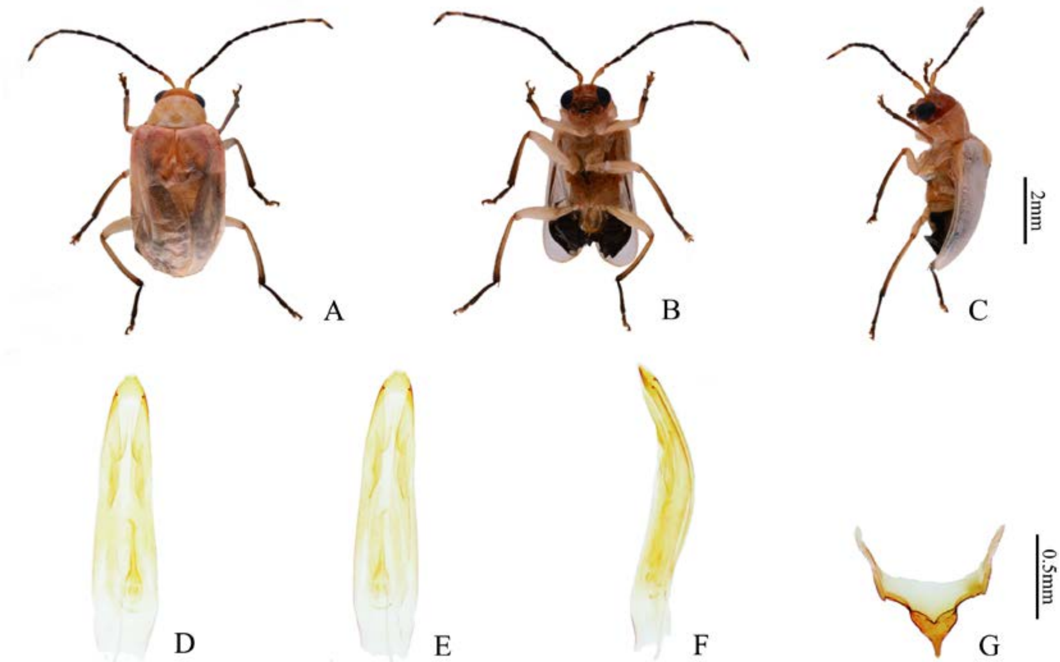

Figure 1. *Paleosepharia paraposticata* **sp. nov.** A–C. Habitus, dorsal, ventral and lateral views; D–F. Aedeagus, dorsal, ventral and lateral views; G. Male tergite VIII. Scale bars = 2 mm (A–C); 0.5 mm (D–G).

Measurement. Male. Length 5.6–5.7 mm, width 2.8–2.9 mm (Figs 1A–C).

Description. Body yellow. Antennae brown with antennomeres I–II and base of antennomeres IX–XI yellow, and apex of antennomere II yellowish brown; legs yellow, tibia apically and tarsus brown. Antennae filiform, 4/5 length of body; ratio of length of antennomeres I to XI 0.6 : 0.2 : 0.4 : 0.5 : 0.6 : 0.6 : 0.6 : 0.5 : 0.5 : 0.4 : 0.5; ratio of length to width from antennomere I to XI 3.8 : 2.8 : 3.5 : 6.2 : 7.6 : 7.0 : 6.1 : 6.5 : 5.6 : 5.4 : 6.4. Pronotum transverse, slightly less than 2× wide as long; front angles obtuse, back angles protrude posteriorly, each with one long seta; apical margin straight, lateral margins slightly wavy, basal margin slightly curved; disc evenly convex, with reticulate microsculpture and dense, minute punctures. Scutellum triangular, smooth, impunctate. Elytra parallel-sided, 1.55× longer than wide; raised near base, with one pair of deep longitudinal depressions and beveled apically behind scutellum, disc with dense punctures, diameter of puncture distinctly shorter than spacing between punctures; apex truncate; epipleurae narrower than 1/3 width of elytra, wide at anterior 1/3, gradually narrowing towards apex. Mesosternum, mesopleuron and metasternum with dense hairs. Middle and hind tibiae spined apically; hind tarsal segment I 2× as long as remainder combined length; claws appendiculate.

Aedeagus (Figs 1D–G) elongate, 4.3× longer than wide; nearly parallel-sided; apex obtuse, with one pair of brown spots on margin at apical 1/6; endophallus of aedeagus with one longitudinal sclerite, apex curved, basally widened; aedeagus constricts dorsally in lateral view; male tergite VIII heart-like near apex, narrowing apically.

Holotype. ♂, **China**, Sichuan, Qingchuan, Tangjiahe, Baixiongguan, 104°49'E, 32°57'N, 31-VII-2024, coll. Yun ZHANG. **Paratypes**. 1♂, Sichuan, Qingchuan, Tangjiahe, 930 m, 30-VII-2024, coll. Yun ZHANG; 1♂, Chongqing, Chengkou, 22-VII-2024, coll. Yun ZHANG & Jialing LIU.

Etymology. The specific epithet refers to the similarity of this new species to *Paleosepharia posticata* Chen.

Remarks. This new species is similar to *Paleosepharia posticata* Chen, but the new species has elytra, metapleura, metasternum and epipleurae yellow without black; endophallus of aedeagus has no complex spiculae.

Updated key to Chinese species of *Paleosepharia* (Based on Feng *et al*. 2025)

1. Elytra unicolored ………… 2
-. Elytra bicolor or tricolor ………… 7
2. Elytra black ………… *P. subnigra* Gressitt & Kimoto
-. Elytra yellow or yellow-brown or red or reddish-brown ………… 3
3. Head black ………… 4
-. Head yellow or yellow-brown ………… 5
4. Pronotum black, Elytra with comma-shaped deep concavity and cylindrical protrusions in male ………… *P. bicavipennis* (Chen)
-. Pronotum yellow, Elytra with a large, deep concavity near suture at basal 1/3 in male ………… *P. quadricavata* (Chen)
5. Metasternum black ………… *P. kolthoffi* Laboissière
-. Metasternum yellow ………… 6
6. Tibiae and tarsi black ………… *P. pallens* Chen, Wang & Yang
-. Tibiae apically and tarsi brown ………… *P. paraposticata* **sp. nov.**
7. Elytra bicolor ………… 8
-. Elytra tricolor ………… 32
8. Elytra with yellow and black ………… 9
-. Elytra with yellow and red or yellow-brown and reddish-brown ………… 28
9. Elytra without stripes or spots ………… 10
-. Elytra with stripes or spots ………… 19
10. Basal part of inner margin of epipleuron black ………… 11
-. Lateral margins of elytra black ………… 17
11. Basal margin of pronotum with a tongue-shaped process in male, slightly process in female ………… *P. lingulata* Chen & Jiang
-. Basal margin of pronotum without any process ………… 12

12. Metathorax reddish-brown ········· 13
-. Mesothorax black ········· 14
13. Abdomen yellow, body length 6.8–8.2 mm ········· *P. truncata* Laboissière
-. Abdomen red, body length 4.5 mm ········· *P. truncatipennis* Chen & Jiang
14. Scutellum black, elytra with spindle-shaped depressions in male ········· *P. fusiformis* Chen & Jiang
-. Scutellum yellow ········· 15
15. Elytra with oval depressions in male ········· *P. orbiculata* Chen & Jiang
-. Elytra with hook-shaped depressions in male ········· 16
16. Aedeagus robust, 3.1 times longer than wide, and apical protrusions nipple-shaped ········· *P. emeiensis* Feng, Yang & Ge
-. Aedeagus slender, 4 times longer than wide, apex without large protrusions ········· *P. fulvicornis* Chen
17. Vertex black, the depression extending from the scutellum to the middle of the elytra in male ········· *P. verticalis* Chen & Jiang
-. Vertex yellow or yellow-brown ········· 18
18. Apical 1/2 of suture black ········· *P. basituberculata* Chen & Jiang
-. Basal 1/2 of suture black ········· *P. caudata* Chen & Jiang
19. Elytra with black stripes ········· 20
-. Elytra with yellow stripes or spots ········· 27
20. Elytra with one black stripe ········· 21
-. Elytra with two black stripes ········· 25
21. Elytral transverse stripe before middle disc ········· *P. amiana* (Chûjô)
-. Elytral transverse stripe after middle disc ········· 22
22. Elytral stripe at apex ········· 23
-. Elytral stripe subapical ········· *P. liquidambara* Gressitt& Kimoto
23. Lateral margins of elytra black ········· *P. posticata* Chen
-. Lateral margins of elytra yellow ········· 24
24. Antennal segment 5 longer than 4, postscutellar depressions straight in male ········· *P. quercicola* Chen & Jiang
-. Antennal segment 5 as long as 4, postscutellar depressions “J”-shaped ········· *P. J-signata* Chen & Jiang
25. Elytral anterior transverse black bands connected ········· 26
-. Elytra without anterior transverse black band near the suture ········· *P. yasumatsui* (Kimoto)
26. Elytra with slender transverse black bands and weakly margined ········· *P. excavata* (Chûjô)
-. Elytra with broad transverse black bands and distinctly margined ········· *P. formosana* (Chûjô)
27. Elytra black; with one pair of curved yellow stripes ········· *P. nantouensis* (Kimoto)
-. Elytra black; each elytron with a yellow spot ········· *P. fasciata* Gressitt & Kimoto
28. Elytra red, each elytron with a yellow spot ········· *P. gongshana* Chen & Jiang
-. Elytra yellow or yellow-brown, and only a little red ········· 29
29. Humeral angle red ········· 30
-. Humeral angle yellow ········· 31
30. Basal and apical l/10 of elytra red, outside tibia blackish-brown, elytra without depression ········· *P. basipennis* Gressitt & Kimoto
-. Basal 1/3 of elytral epipleuron red; tibia brown, elytra with slender depression in mela ········· *P. humeralis* Chen & Jiang
31. Elytra with a red stripe after middle disc ········· *P. jiangae* Beenen
-. Elytra without stripe, and basal part of inner margin of epipleuron red ········· *P. tibialis* Chen & Jiang

32. Elytra red at basal and apical l/10, without spot ··································· *P. castanoceps* Chen & Jiang
-. Elytra red at base, each elytron with two white spots ····························*P. subrubra* Feng, Yang & Ge

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