Dayao gen. n. of the subtribe Tyrina (Coleoptera, Staphylinidae, Pselaphinae) from South China

Zi-Wei Yin†, Li-Zhen Li‡, Mei-Jun Zhao§

Department of Biology, College of Life and Environmental Sciences, Shanghai Normal University, Shanghai, 200234, P. R. China

† urn:lsid:zoobank.org:author:C515106C-5782-4471-AE11-483B49606A67
‡ urn:lsid:zoobank.org:author:BBACC7AE-9B70-4536-ABBE-54183D2ABD45
§ urn:lsid:zoobank.org:author:FBE4FA1F-5BCF-405E-98C1-4F86894643EA

Corresponding author: Mei-Jun Zhao (mjzhao@shnu.edu.cn)

Citation: Yin ZW, Li LZ, Zhao MJ (2011) Dayao gen. n. of the subtribe Tyrina (Coleoptera, Staphylinidae, Pselaphinae) from South China. ZooKeys 141: 45–52. doi: 10.3897/zookeys.141.1948

Abstract

Dayao pengzhongi gen. et sp. n. is described and illustrated based on the material collected in Guangxi Province, South China. The genus is placed in the oriental ‘Pselaphodes complex’ of genera of the subtribe Tyrina and its taxonomic placement is discussed.

Keywords

Staphylinidae, Pselaphinae, Tyrina, new genus, new species, taxonomy, Dayao Mountain, Guangxi, South China

Introduction

According to the most recent catalog of the tribe Tyrini (Hlaváč and Chandler 2005), 13 genera of the subtribe Tyrina have been known from the Oriental region. Eight of 13 genera centered on the genus Pselaphodes Westwood grouped as the ‘Pselaphodes complex’ of genera (Hlaváč 2002: 283): Indophodes Hlaváč, Labomimus Sharp, Lasinus
Sharp, *Linan Hlaváč*, *Nomurainus* Hlaváč, *Paralasinus* Hlaváč & Nomura, *Pselaphodes* Westwood and *Taiwanophodes* Hlaváč. Determination of the generic placement within the group is usually based on the form of maxillary palpi, in the combination with the foveal pattern on the head, pronotum and thorax and the relative length of the scape.

Recently a small series of pselaphine was collected at Dayao Mountain in the Guangxi Province, South China. The pselaphines were identified as a member of the ‘*Pselaphodes* complex’ upon an examination of morphological characters, but eventually found not matching any current generic conception of a known genus. The aim of this paper is to describe the new genus and species in detail, provide illustrations of the diagnostic characters, and discuss its taxonomic placement.

**Material and methods**

All specimens were collected from the leaf litter of the forest floor by sifting. They were killed with ethyl acetate and then dried. Dissections were done in 75% ethanol. The genital organs and other dissected parts were mounted in Euparal (Chroma Gesellschaft Schmidt, Koengen, Germany) on plastic slides that were placed on the same pin as the specimen. Photos were taken by a Canon EOS 40D Camera mounted with an MP-E 65 mm Macro Photo Lens; line drawings were made using Adobe Illustrator CS2 based on the photos taken by a Canon G9 Camera mounted on an Olympus CX31 microscope.

A slash (/) is used to separate lines on the same label, and a double slash (//) is used to separate different labels on the same pin.

The following acronyms are used in the text:

- **AL** length of the abdomen;
- **AW** maximum width of the abdomen;
- **BL** length of the body (= HL + PL + EL + AL);
- **EL** length of the elytra, measured along sutural line;
- **EW** maximum width of the elytra;
- **HL** length of the head, measured from the anterior clypeal margin to the occipital constriction;
- **HW** width of the head across eyes;
- **PL** length of the pronotum along midline;
- **PW** maximum width of the pronotum;

**SHNU** Shanghai Normal University, Shanghai, P. R. China.

The type series are deposited in the Insect Collections of Shanghai Normal University, Shanghai, China (*SNUC*).

The terminology of foveal system follows Chandler (2001), except for using ‘ventrite’ instead of ‘sternite’.
Taxonomy

Dayao Yin, Li & Zhao, gen. n.
urn:lsid:zoobank.org:act:12861B3B-83EB-466C-BF28-FDE4F6F6C17B
http://species-id.net/wiki/Dayao
Figs 1–13

Type species. Dayao pengzhongi Yin, Li and Zhao, here designated. Gender masculine.

Diagnosis. Head and pronotum finely punctate. Head with vertexal foveae small, lacking frontal foveae; maxillary palpi with apical three segments elongate, each basally pedunculate and strongly protrude laterally. Pronotum with median and lateral antebasal foveae, lacking antebasal sulcus. Median metaventral fovea absent. Abdomen with tergite IV longest.

Description. Length 2.95–2.99 mm. Head with narrow, long and prominent frontal rostrum, antennal tubercles faint; small vertexal foveae nude, with median carina between foveae; lacking postantennal notches and lateral postantennal pits; antennae with 11 antennomeres, antennal club formed by three enlarged apical antennomeres; maxillary palpi (Fig. 9) elongate, lateral projections of antennomeres II–IV each setose at their apices, fourth palpomeres with apical palpal cones; with lateral genal spines; gula flat, gular foveae close in median impression.

Pronotum with nude median and setose lateral antebasal foveae; lateral procoxal foveae present.

Each elytron with two basal foveae; discal stria extending from second basal fovea and exceeding elytral midpoint.

Thorax with median and lateral mesoventral foveae; lateral mesocoxal foveae present; lacking median metaventral fovea, metaventral apex broad and shallowly notched medially.

Legs with tarsomeres simple, third tarsomeres about 0.75 times as long as second tarsomeres.

Abdomen with tergite IV (visible tergite I) longer than V–VII combined; tergite IV with deep basal sulcus connecting basolateral foveae, lacking mediobasal fovea in sulcus; with long discal carinae; tergites V–VII each with basolateral foveae. Sternite IV largest, longer than V–VII combined, with deep basal sulcus densely covered by short setae.

Males with antennomeres IX, pronotum and protibiae modified. Aedeagus with median lobe asymmetric; parameres long and symmetric; dorsal diaphragm oval.

Distribution. A single species in known from Dayao Mountain, Guangxi Province, South China.

Comparative notes. Dayao is placed near the genera of Pselaphodex complex with simple, linear tarsomere II not strongly bilobed, only slightly extending beneath tarsomere III: Paralasinus Hlaváč & Nomura, Lasinus Sharp, Linan Hlaváč, Indophodes Hlaváč, Labomimus Sharp and Pselaphodes Westwood. Among these genera, Dayao can be readily separated from Paralasinus and Lasinus by the clearly
asymmetrical palpmere II–IV, which are simple in both genera. *Dayao* is separated from *Indophodes* and *Labomimus* by the lack of a frontal and a median metaventral fovea; from *Pselaphodes* by the lack of a frontal fovea, the indistinct pronotal lateral ante basal foveae and the longer scape. The lack of a median metaventral fovea, the pronotum being finely punctate and the basal carinae of the tergite IV being much longer separate *Dayao* from *Linan* in which the median metaventral fovea is present, the pronotum is roughly and densely punctate and the basal carinae are much shorter.

**Remarks.** The published key to the world genera of Tyrini (Hlaváč and Chandler 2005) may be modified as the following to accommodate the new genus:

18(16) Head with vertexal foveae indistinct, lacking frontal fovea; lacking median longitudinal sulcus on the pronotal disc

- Head with distinct setose vertexal and frontal foveae; pronotum with median longitudinal sulcus on the disc variably present

18a Head and pronotum rough punctate; median metaventral fovea present; discal carinae of tergite IV short or indistinct. (Northwestern Thailand; China: Yunnan, Zhejiang, Hainan, Anhui, Guizhou and Jiangxi Provinces) ........

- Head and pronotum finely punctate (Figs 4–5); median metaventral fovea absent (Fig. 6); long discal carinae of tergite IV distinct (Fig. 1). (China: Guangxi Province) .................*Dayao* Yin, Li & Zhao, gen. n.

**Etymology.** The generic name is taken from the collection site of the type series, Dayao Mountain.

*Dayao pengzhongi* Yin, Li & Zhao, sp. n.
[urn:lsid:zoobank.org:act:CA2D75C0-637D-439A-96A3-B0A9585E3601](http://species-id.net/wiki/Dayao_pengzhongi)
Figs 1–13

**Type material.** (1 ♂, 3 ♀♀). **Holotype:** ♂, labelled ‘CHINA: Guangxi Prov. / Lai bin City, Jinxiu County / Dayao Mt., 7 km / 1,200–1,400 m, 22.vii.2011 / Z. Peng leg. // [red label] HOLOTYPE / *Dayao pengzhongi* Yin et al. / SHNU Collections’. **Paratypes:** 3 ♀♀, same label data as holotype, except ‘23.vii.2011 / Z.W. Yin & J.Y. Hu leg.’, all bear the following label: ‘[yellow label] PARATYPE / *Dayao pengzhongi* Yin et al. / SHNU Collections’.

**Description.** Male (Fig. 1). Length 2.95 mm (holotype). Head lengthily and bluntly triangular, HL 0.74 mm, HW 0.59 mm, with decumbent setae. Vertexal foveae located posterior to point level with posterior margin of eyes. Eyes prominent, each with about 35 facets. Antennae elongate (Fig. 2), scape longer than II–IV combined, II–IV each short, of same width, V–VIII each longer than II–IV, slightly narrower, of
Figures 1. Male habitus of *Dayao pengzhongi*, holotype. Scale: 1.0 mm.
same width, shortened distally, antennomeres of club (Fig. 8) of about same width, IX slightly expanded laterally at basal third, X shorter than IX and XI, XI longer than IX, with rounded apex. Pronotum (Fig. 4) as long as wide, PL 0.66 mm, PW 0.64 mm, with ‘Y’-shaped sulcus in anterior half, tufts of long golden setae at anterior margin of sulcus directed posteriorly. Elytra wider than long, EL 0.81 mm, EW 1.05 mm, lacking ridges. Venter (Fig. 6) with long metaventral process (Fig. 7) bent posteriorly near apex; metaventrals smooth, convex mediately in apical half, with dense long setae at lateral portions and sparse minute setae at middle. Legs long, pro- and mesofemora with distinct erect setae at ventral margins. Abdomen wider than long, AL 0.74 mm, AW 1.03 mm; discal carinae on tergite IV extending two-fifths of tergal length; tergite VIII transverse, narrowed apically in posterior half, with shallow median emargination, tergite IX (Fig. 10) semi-membranous, with apical portion strongly sclerotized; sternites VIII transverse. Aedeagus (Figs 11–13) length 0.48 mm.
Dayao gen. nov. of the subtribe Tyrina (Coleoptera, Staphylinidae, Pselaphinae)...

Figures 8–13. Details of Dayao pengzhongi. 8 male antennal club, enlarged 9 male left maxillary palpus 10 male sternite IX 11 aedeagus, in dorsal view 12 same, in lateral view 13 same, in ventral view. Scales: a = 0.3 mm, b–c = 0.1 mm, d–f = 0.2 mm.

Female. In general similar to male. Antennomere IX (Fig. 3) and pronotum (Fig. 5) unmodified, metaventrite lacking process, protibiae simple. BL 2.81–2.99 mm, HL 0.71–0.73 mm, HW 0.57–0.59 mm, PL 0.63–0.66 mm, PW 0.62–0.64 mm, EL 0.74–0.78 mm, EW 1.07–1.10 mm, AL 0.73–0.82 mm, AW 1.12–1.15 mm. Eyes each with about 30 facets.

Etymology. The specific name recognizes the efforts of Zhong Peng in collecting the male holotype.

Acknowledgment

The authors thank Peter Hlaváč (Košice, Slovakia) and Donald S. Chandler (Durham, U.S.A) for various advices during the present study. Peter Hlaváč and Roberto Poggi (Genova, Italy) critically read a previously version of the manuscript and provided helpful comments. The present study is financially supported by the National Natural
Science Foundation of China (No. 30870323) and Shanghai Natural Science Foundation (No. 10ZR1421600).

References

Chandler DS (2001) Biology, morphology, and systematics of the ant-like litter beetles of Australia (Coleoptera: Staphylinidae: Pselaphinae). Memoirs on Entomology International 15: 1–560.

Hlaváč P (2002) A taxonomic revision of the Tyrini of the Oriental region. II. Systematic study on the genus Pselaphodes and its allied genera (Coleoptera: Staphylinidae: Pselaphinae). Annales de la Société Entomologique de France (N. S.) 38(3): 283–297.

Hlaváč P, Chandler DS (2005) World catalog of the species of Tyrini with a key to the genera (Coleoptera: Staphylinidae: Pselaphinae). Folia Heyrovskyana 13(3): 81–143.