

Description of a new species of *Disorygma* Förster (Hymenoptera: Figitidae: Eucoilinae) from China

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Abstract: In this paper, we report the genus *Disorygma* Förster, 1869 from China for the first time, and describe a new species *D. punctata* sp. nov. An illustrated key to *Disorygma* species is also provided.

Key words: Apocrita; Cynipoidea; parasitoids; taxonomy

中国合脊匙胸瘿蜂属一新种（膜翅目：环腹瘿蜂科：匙胸瘿蜂亚科）

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摘要：本文首次报道中国合脊匙胸瘿蜂属 1 新种，即，刻合脊匙胸瘿蜂 *D. punctata* sp. nov.。新种被描述，并提供该属种检索表。

关键词：细腰亚目；瘿蜂总科；寄生蜂；分类

Introduction

The subfamily Eucoilinae Thomson, 1862 is the largest and most common group in family Figitidae. The subfamily Eucoilinae includes nearly 1000 eucoiline species and at least 85 recognisable genera (Buffington 2009) that either have valid names or are currently being described. These genera are classified into six tribes: Diglyphosematini Belizin, 1961, Eucoilini Thomson, 1862, Ganaspini Belizin, 1961, Kleidotomini Hellén, 1960, Trichoplastini Kovalev, 1989, and Zaeucoilini Buffington, 2009 (Forshage & Nordlander 2008; Buffington 2009). All eucoilines are parasitoids of the first-instar larvae of cyclorrhaphous Diptera found in various microhabitats (Fontal-Cazalla 2002; Buffington and Ronquist 2006; Buffington *et al.* 2007). The eucoiline species fauna is poorly known in China. To date only 31 genera have been recorded, all from Taiwan, China (Hedicke 1913; Lin 1987, 1988). This paper is the first to report eucoiline species from China since 1988.

The genus *Disorygma* was originally described by Förster in 1869 (Förster, 1869), and Nordlander redescribed it in 1976. The genus includes four species: *D. curtum* (Giraud, 1860), *D. depile* (Giraud, 1860), *D. luteipes* (Kieffer, 1901), and *D. pacifica* (Beardsley, 1988). Species in the genus *Disorygma* are recognised from the Palearctic Regions: France, Germany, Greece, Spain, Sweden and United Kingdom (Buffington 2011). The species in this genus are parasitoids of Agromyzidae (Nordlander 1976). Herein, we report this genus from China and describe a new species, *D. punctata* sp. nov., and provide a key to *Disorygma* species.

Material and methods

Morphological terminology, including abbreviations, follows Weld (1952), Nordlander (1982), Quinlan (1986, 1988), Lin (1988), Ronquist & Nordlander (1989), Ronquist (1995), and Fontal-Cazalla *et al.* (2002).

Additional abbreviations used here include: F1–F11 – first and subsequent flagellomeres; post-ocellar distance (POL) – the distance between the inner margins of the posterior ocelli; ocellar-ocular distance (OOL) – the distance from the outer edge of the posterior ocellus to the inner margin of the compound eye; LOL – the distance between lateral and frontal ocelli.

Observations and measurements were made using a Leica M205C stereomicroscope (Wetzlar, Germany). Photos were taken by Phenom™ Pro Desktop scanning electron microscopy and Leica M205C stereomicroscope.

Specimens from this study are deposited in the Hymenoptera Collection of Zhejiang Agricultural and Forestry University, Lin'an, China.

Taxonomy

Disorygma Förster, 1869

Disorygma Förster, 1869: 346. Type species: *Disorygma divulgata* Förster.

Ectolyta Förster, 1869: 347. Type species: *Ectolyta incrassata* Förster.

Erisphagia Förster, 1869: 347. Type species: *Striatovertex depile* Giraud.

Diagnosis. Malar space moderately to strongly strigose, protuberance absent; pronotum large and forward-facing; notauli present, complete or incomplete, reduced to slight impressions; mesopleural carina simple; scutellum margined laterally and posteriorly, surface reticulate-rugose; scutellum plate from rounded to teardrop-shaped, ranging from covering most of disk to half of disk of scutellum; the lateral propodeal carinae fused along the dorsal margin of the nucha. *Disorygma* is similar to *Banacuniculus* Buffington, 2010 and *Sinatra* Buffington, 2010, but it can be separated from the latter by characters as follows: notauli more complete and hairy ring at the base of the metasoma absent (notauli faint and hairy ring complete in *Banacuniculus*); lateral pronotal carina absent (lateral pronotal carina present in *Sinatra*).

Key to the species of *Disorygma*

1. Notauli distinctly impressed, complete, reaching the pronotum (Fig. 1c); lateral portion of pronotal plate punctuated (Fig. 1b)..... *D. punctata* sp. nov.
- . Notauli indistinctly impressed, visible only in the anterior part 1/3–1/2 or the posterior part 1/3–1/2 of the

- mesoscutum; lateral portion of pronotal plate without punctures..... 2
2. Notauli complete, indistinctly impressed, visible only in the posterior part 1/3–1/2 of the mesoscutum, the anterior part completely absent, punctuated..... 3
- . Notauli visible only in the anterior part 1/3–1/2 of the mesoscutum, the posterior part completely absent, smooth..... 4
3. Scutellar plate drop-shaped with a round pit; scutellar disc with radiating ridges; mesopleura weakly strigose under mesopleural carina; notauli indistinctly impressed..... *D. depile* Giraud
- . Scutellar plate rounded with an oval pit; scutellar disc reticulate rugose; mesopleura smooth and shiny under mesopleural carina; notauli visible only in the posterior part 1/3–1/2 of the mesoscutum.....
..... *D. curtum* Giraud
4. The posterior margin of scutellum with short median longitudinal carina; head triangular in anterior view; face with hairs..... *D. pacifica* Beardsley
- . The posterior margin of scutellum reticulate rugose; head rounded in anterior view; face smooth.....
..... *D. luteipes* Kieffer

***Disorygma punctata* sp. nov.** (Figs. 1, 2)

Holotype. ♀, China, Zhejiang, Qingliangfeng, Qianqingtang, X-2012, Guo Rui, Malaise trap. **Paratypes.** 3♀, Henan, Jigongshan: 1♀, 10-VII-1997, Xuexin CHEN, sweep net; Zhejiang, Qingliangfeng, Qianqingtang: 2♀, X-2012, Rui GUO, Malaise trap.

Etymology. This new species is named using the Latin “*punctata*” referring to the pronotal plate condensed punctuation.

Diagnosis. This new species, *D. punctata* sp. nov., is similar to *D. depile*, but it can be separated from the latter by characters as follows: lateral portion of pronotal plate punctuated (Fig. 1b); scutellar plate triangular (Fig. 1e); scutellar disc reticulate-rugose (Fig. 1e); notauli complete, distinctly impressed, reaching the pronotum (Fig. 1c) (lateral portion of pronotal plate without punctures; scutellar plate drop-shaped; scutellar disc with radiating ridges; notauli indistinctly impressed in *D. depile*).

Description. Female. Body length 1.96 mm, forewing 2.07 mm. Male unknown.

Color. Head black; clypeus and its adjacent areas brown; margin of mandibles brown; antennae blackish brown; mesosoma black; scutellar disc black; center of scutellar plate black, rim of plate brown; metasoma black. Wings hyaline, veins yellowish.

Head (Figs. 1a, b). Head transverse in anterior view, with sparse setae, lower face with short setae. Frons, vertex and gena with sparse setae. Head about 0.92 times as long as wide in anterior view and as wide as mesosoma. Gena convex and genal carina absent, not broadened behind eye. Upper margin of clypeus is marked by the anterior tentorial pits. Malar space striate on both sides of the ridge, protuberances absent, about 0.49 times as long as height of compound eye; Head about 0.46 times as broad as wide in dorsal view. LOL : POL : OOL about 0.13 : 0.23 : 0.26. Eye about 1.59 times as high as wide. Occiput concave medially, with short setae. In lateral view, frons and face convex.

Antenna (Fig. 2g). Antenna 13-segmented, pedicel nearly 1.20 times as long as broad; F1 1.20 times as long as F2, 2.21 times as long as pedicel; F11 is the longest flagellomere, 1.71 times as long as F10; ratio of scapus, pedicel and F1–F11 as follows: 12 : 7 : 15 : 12 : 12 : 12 : 13 : 13 : 14 : 12 : 12 : 21; segments 4–13 with rhinaria.

Mesosoma (Figs. 1c–e). Mesosoma as long as high in lateral view, with few setae. In anterior view, pronotal plate wide and vertical, with long pubescence along the dorsal margin,

anterior weakly narrower than posterior, median bridge narrow, rounded dorsally, pronotal foveae open; in lateral view, both lateral portion of pronotal plate with condensed punctate and short setae, lateral carina absent. Mesoscutum about 0.82 times as long as wide. Notauli complete, distinctly impressed, reaching the pronotum, punctuated, with setae, only slightly convergent on the posterior part 1/3. Anterior parallel line absent. Parapsidal line present, with punctate and setae. Mesopleuron smooth. Dorsal and ventral borders of mesopleural triangle rounded. Mesopleural carina complete, simple. Upper portion with short striations. Lateral bar of scutellum short and smooth, posterior rounded, reaching to 0.38 times length of scutellum. Anterior fovea oval, smooth and deep. Disc of scutellum reticulate-rugose; about 1.12 times as long as wide; posterior margin rounded, lateral ridge rounded, laterodorsal and posterior projections absent. Scutellar plate about 1.63 times as long as wide; not reaching to posterior margin of disc; triangle, lateral margin gradually widening, sharp anteriorly and rounded posteriorly; surface with a circular fovea posterocentral, sides and upper of fovea punctuated, rim of plate translucent. Metanotum entirely concealed under scutellum. Metapleuron strongly elevated in the median area, posterior margin irregularly elevated. Anteroventral cavity semicircular, with short setae. Metapleural corner setose. Propodeum short, with setae; submedian ridge rather parallel on the anterior part, convergent slightly on the posterior part 1/2, median area with few setae; propodeal carinae distinct.

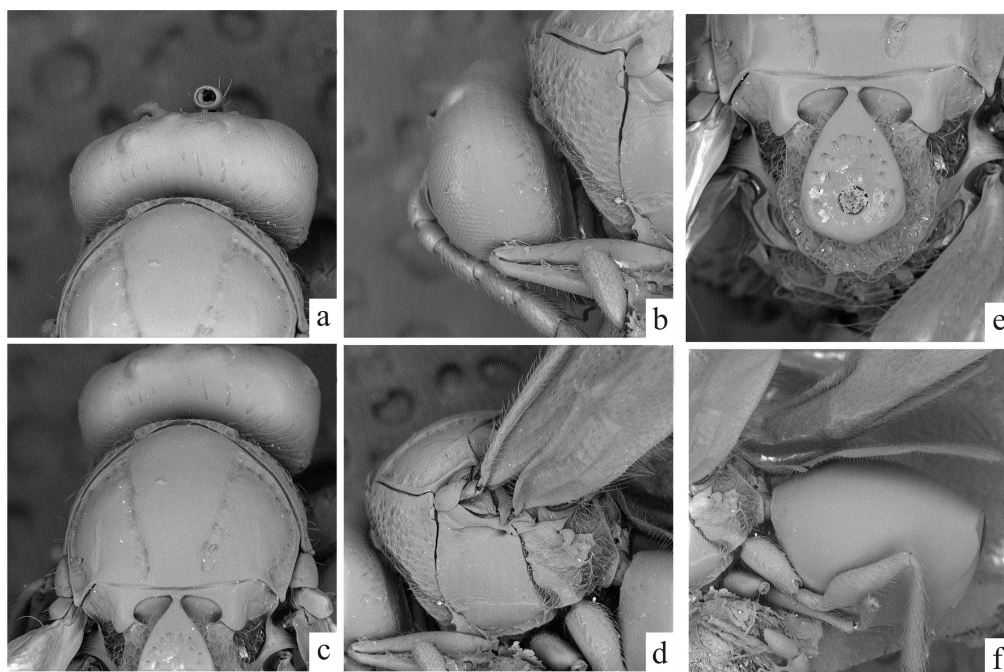


Figure 1. *Disorygma punctata* sp. nov., ♀. a. Head, dorsal view; b. Head, lateral view; c. Mesosoma, dorsal view; d. Mesosoma, lateral view; e. Scutellum, dorsal view; f. Metasoma, lateral view. Scale bars = 200 μ m (Figs. a–c); 300 μ m (Figs. d, f); 100 μ m (Fig. e).

Legs. Fore coxa variously setose; mid and hind coxa with anterior and posterior dorsoventral setal bands.

Wings (Fig. 2h). Forewing longer than body, surface with rather dense pubescences, margin with long dense cilia; radial cell of forewing 1.95 times as long as broad; R1 complete, pigmented along anterior margin of wing.

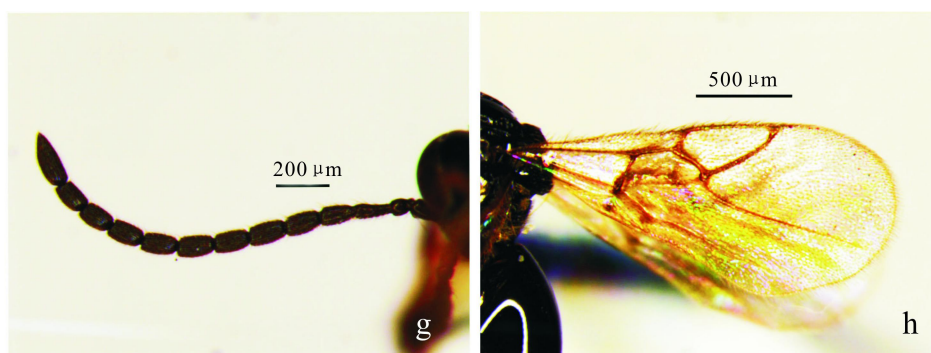


Figure 2. *Disorygma punctata* sp. nov., ♀. g. Antennae; h. Forewing.

Metasoma (Fig. 1f). Gastral petiole short. Metasoma shorter than head + mesosoma, ratio of dimensions about 0.81 : 0.49 : 0.64, smooth and shiny; base of tergite glabrous; 2nd metasomal tergite extending dorsally to all of metasoma; in lateral view, tergites 2, 3 visible, posterior 1/4 of tergite 2 finely punctate.

Male. Unknown.

Distribution. China (Henan, Zhejiang).

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