

**A weevil of the genus *Caulophilus* in Dominican amber  
(Coleoptera: Curculionidae)**

STEVEN R. DAVIS, MICHAEL S. ENGEL

Division of Entomology, Natural History Museum, and  
Department of Ecology & Evolutionary Biology,  
1345 Jayhawk Boulevard, Dyche Hall, University of Kansas,  
Lawrence, Kansas 66045-7163, United States

**ABSTRACT.** The remains of a new species of cossonine weevil (Cossoninae: Dryotribini) are described and figured from Early Miocene (Burdigalian) amber from the Dominican Republic. *Caulophilus ashei* sp. n. is distinguished from other species in the genus.

**KEY WORDS:** Polyphaga, Phytophaga, Tertiary, Curculionoidea, palaeontology, taxonomy.

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INTRODUCTION

Weevils of the cossonine genus *Caulophilus* WOLLASTON are familiar members of the tribe Dryotribini. The common European species, *Caulophilus oryzae* (GYLLENHAL) is widely known as the broadnose grain weevil and a frequent pest in agricultural systems. Adult females lay small, white eggs in soft or damaged grains (frequently damaged by the activity of other grain insects) which then hatch within a few days. The larvae feed on the softer portions of the grain before pupating and finally eclosing to an adult.

Herein we provide the description of the first fossil *Caulophilus*, the first fossil of the tribe Dryotribini, and the first cossonine in Dominican amber. Today the genus *Caulophilus* consists of 17 described species distributed in South and North America, Puerto Rico, Jamaica, Cuba, Hawaii, Seychelles, Madeira, and Europe, although some have become recently adventive in other regions (e.g., New Zealand). With the discovery of the species described herein the genus can now be documented from paleofauna of Hispaniola and is at least 19 million years old. The age and origin of Dominican amber has been reviewed by

GRIMALDI (1994), ITTURALDE-VINENT & MACPHEE (1996), and GRIMALDI & ENGEL (2005), while the general geological history of the Curculionidae has been summarized by GRATSHEV & ZHERIKHIN (2003).

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### SYSTEMATIC PALAEOLOGY

Family: Curculionidae LATREILLE 1802

Subfamily: Cossoninae SCHÖNHERR 1825

Tribe: Dryotribini LECONTE *In* LECONTE & HORN 1876

Genus: *Caulophilus* WOLLASTON 1854

### *Caulophilus ashei* sp. n.

(Figs 1–3)

### Diagnosis

The pronotal length and shape, in which the posterior widens relative the anterior, are characteristic. In addition, the rather abrupt, slight dilation of the apical half of the rostrum is notable of the new species.

### Description

Total body length (including rostrum) ca. 2.0 mm; maximal width ca. 0.48 mm; elytral length ca. 1.0 mm. Integument brown to light brown (as preserved; colour patterns, if ever present, are not preserved) (Figs 1–3). Compound eyes subcircular; interocular distance slightly less than width of rostrum in basal half in dorsal view. Rostrum of approximately equal width across its length although widening slightly apical half in dorsal view. Antennal scrobe at midlength of rostrum and shallow; scape just reaching margin of compound eye; base of funicle narrow, gradually enlarging to club. Vertex glabrous. Pronotum glabrous, length approximately slightly less than 1.5× width; anterior portion narrower than posterior portion; small, shallow punctures present, punctures separated by distance greater than or equal to puncture diameter; punctures fewer along posterior, medial half; median carina absent; lateral carina absent. Prosternum with shallow depression between procoxae. Elytra each with approximately seven striae; punctures of elytral striae small, separated by distance of approximately 3× puncture diameter; humeri subquadrate. Hind wings well developed (evidenced by hind wing extending from beneath elytra in paratype (Fig. 1). Procoxa enlarged relative to meso- and metacoxae; meso- and metatibiae

laterally expanded apically; apical tibial unci at outer angle, large, approximately equal in length to tarsomere IV; a smaller denticle present on opposite side of uncus on inner angle.

### Holotype

Holotype depicted in figures 2-3, AMNH DR-10-809, Early Miocene (Burdigalian) amber from the Dominican Republic, specific mine unknown. The holotype is in the amber fossil collection, Division of Invertebrate Zoology, American Museum of Natural History, New York.

### Paratypes

One paratype depicted in figure 1, AMNH DR-10-568, Early Miocene (Burdigalian) amber from the La Toca mine of the Dominican Republic; a second paratype is AMNH DR-15-272, from an unspecified mine. The paratypes are in the same collection as the holotype.



**Figs 1-3.** *Caulophilus ashei* sp. n. 1 – dorsal aspect of paratype (AMNH DR-10-568), 2 – dorsal aspect of holotype (AMNH DR-10-809), 3 – ventral aspect of holotype (AMNH DR-10-809).

### Etymology

The specific epithet is a patronymic honouring the late Prof. Dr. James S. ASHE (1947–2005), colleague and eminent coleopterist.

### Comments

This species is confidently placed in the extant genus *Caulophilus* based on the distance separating the procoxae, the distance of the procoxae from the posterior margin of the prosternum, the insertion of the antennae at mid-length along the rostrum, and the slight apical expansion of the meso- and metatibiae. The rostrum, although more or less equal in width, expands slightly along the apical half and can be particularly confused with the genera *Cossonus* and *Elassoptes*. This expansion is more pronounced in *Elassoptes* and *Cossonus*, however, and the antennal scrobe is partially visible in dorsal view, whereas in *Caulophilus* the scrobe is not visible in dorsal aspect.

Other diagnostic features of *Caulophilus* exhibited by the fossil include: length less than 5.0 mm; body subcylindrical and dorsoventrally compressed; integument brown to light brown and glabrous; antennal insertion at approximately mid-length of rostrum; antennae geniculate, composed of seven funicular articles; elytra approximately 2x length of pronotum or slightly less; procoxae separated by slightly less than diameter of an individual coxa, situated distantly from posterior margin of prosternum, separated from margin by approximately a coxal diameter; tarsi tetramerous.

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