

Taxonomic note on *Eupithecia cupressata* Pearsall (Lepidoptera: Geometridae: Eupitheciini)

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Abstract

The male of *Eupithecia cupressata* Pearsall is described, and illustrations of adults and genitalia of both sexes are provided.

Key words: California, *cupressata*, *Eupithecia*, Eupitheciini, Geometridae, *satyrata* species group, taxonomy

Introduction

The poorly known *Eupithecia cupressata* Pearsall was described from a single reared female. Although identified as a male in the original description (Pearsall, 1910), McDunnough (1949) subsequently dissected the type and found it to be a female. He illustrated the specimen with partial genitalia. Only two other specimens, both females, were known to McDunnough. Herein I describe the male of *cupressata* and provide photographs of the adults and genitalia of both sexes. The following abbreviations are used in the text: CNC, Canadian National Collection, Ottawa, Canada; The following abbreviations are used in the text: CNC, Canadian National Collection, Ottawa, Ontario, Canada; USNM, National Museum of Natural History, Washington, D.C., USA.

Eupithecia cupressata Pearsall

Holotype female: Deposited in USNM (Fig. 1), no paratypes.

Type data: Monterey [Monterey Co.], California, 5 December, 1892 (adult emerged).

McDunnough revision: 1949: fig 8A partial female genitalia; Plate 28, fig. 15 (female holotype).

Diagnosis. *Eupithecia cupressata* can be separated from other North American *Eupithecia* by its large size, medium brown dorsal forewing color (paler hindwing) with prominent dark brown discal spot, and generally reduced dorsal maculation. Worn specimens might be confused with those of *E. purpurissata* Grossbeck, a smaller purplish-brown species that flies in early spring only, while *cupressata* adults have been recorded from March through December. The holotype has faded with age and is slightly paler in color than fresh specimens.

Description. MALE (Fig. 2): *Forewing length* (base to apex): 12–14 mm. *Head and Body:* Labial palpi long (ca. 2X width of eye), porrect, broad, brown with white tips. Frons with dark brown scales, some white tipped. Head and thorax speckled with a mixture of gray and brown scales. Antennae weakly ciliate, brown and pale gray ringed, pedicel white with brown ring. Abdomen and legs speckled and broadly ringed with dark brown and whitish scales. *Wings:* Forewing medium brown speckled with whitish and darker brown scales along the veins, distinct oblong dark brown discal spot with lighter brown spots on either side along costa. Faint, poorly developed postmedial band (visible in fresh specimens); narrow dark brown terminal line; fringe with pale-tipped brownish-gray scales. Hindwing slightly paler than forewing; small discal spot present; some narrow diffuse bands (in fresh specimens); subterminal darker brown band with enlarged spot at anal angle; narrow dark brown terminal line; fringes as in forewing. Wings ventrally paler with clearly defined maculation. Forewing with reduced discal spot, distinct postmedial pale band with darker distal band tapering from costa to inner margin; dark brown terminal line; fringe as above. Hindwing paler with discal spot, terminal line and clearly defined antemedial, postmedial, and submarginal bands; fringe as above. *Genitalia* (Figs. 4–9) [2 dissections]: Hair pencils of abdominal segment IX weakly developed (not illustrated). Valve broad with even margins tapering smoothly to moderately rounded apex (Fig. 4); uncus (Fig. 9) a simple “beak” with decurved narrow pointed tip. Shape of ventral plate (eighth sternite) (Fig. 5) of abdominal segment VIII unique among the North American and European *Eupithecia*, tapering gently from base to apex, terminating in a narrow tip that hooks slightly leftward. Vesica (Figs. 6–8) armed with two apically situated, broadly triangular, dentate chitinous plates; a large twisted and contorted posterior plate; a small, weak, irregular chitinous lower lateral piece in the “nose” (Fig. 7).

FEMALE (Figs 1, 3): *Forewing length* (base to apex): 12–14 mm. Color and maculation similar to male in all respects. Pearsall (1910) provided a detailed description of the female holotype. *Genitalia* (Figs. 10–12) [2 dissections]: Papilla analis broadly oval and setose; apophyses thin, delicate, with anterior-to-posterior length ratio approximately 0.5; caudal spur enlarged slightly at origin, then thin with termination on laterocephalic edge of ventral plate; ostium bursae large with rounded-triangular thin chagreened

chitinous plate located dorsally above mouth; ductus bursae broad and short, colliculum broad and open. Corpus bursae ovoid, fundus with dense spinose patch, oblique irregular spinose ventral patch above fundus. Ductus seminalis originates from a tapered chitinous tube attached dorsally to corpus bursae just below colliculum and curves ventrad. As noted by McDunnough (1949), the bursa is very small relative to the abdominal size.

The genitalic slide prepared by McDunnough cannot be located despite searches at both the USNM and CNC. There is a note in the CNC collection stating that the slide is at the USNM, but Patricia Gentili-Poole could not find it, nor could it be found in Canada.

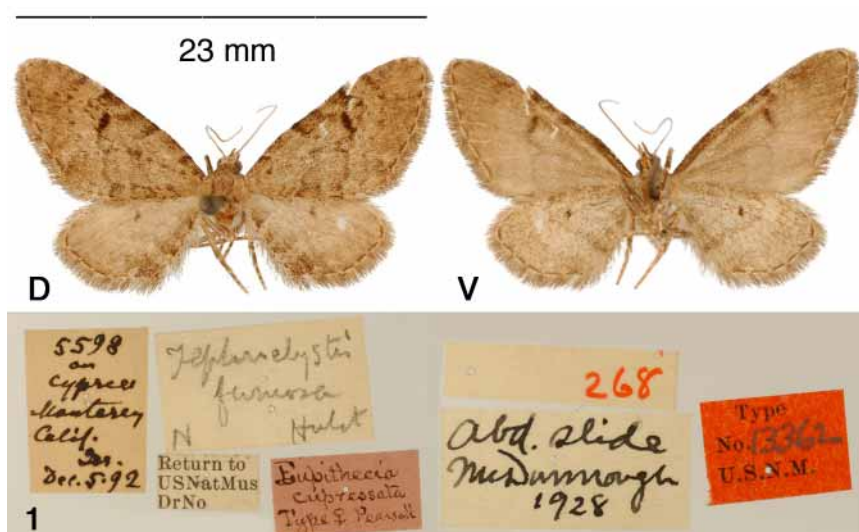
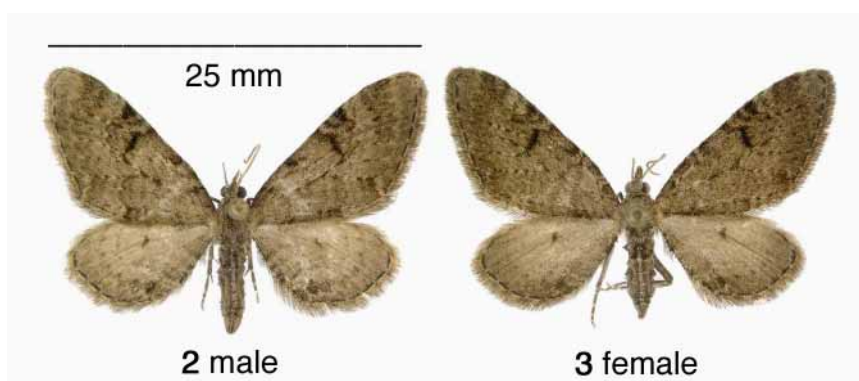


FIGURE 1. *Eupithecia cupressata* holotype: dorsal (D) and ventral (V) images, and pin labels. Composite of USNM photographs.



FIGURES 2–3. Adults of *Eupithecia cupressata*. 2, male, California, Alameda Co., Berkeley; 3, female, same data.

Material examined: 4m, 6f. CALIFORNIA, Alameda Co., Berkeley, 17.vi.1996 (1m), 21.iii.2000 (1m), 4.iv.1989 (1f), 12.ix.1998 (1f), 7.vii.1999 (1f), 13.iii.2000 (1f), all

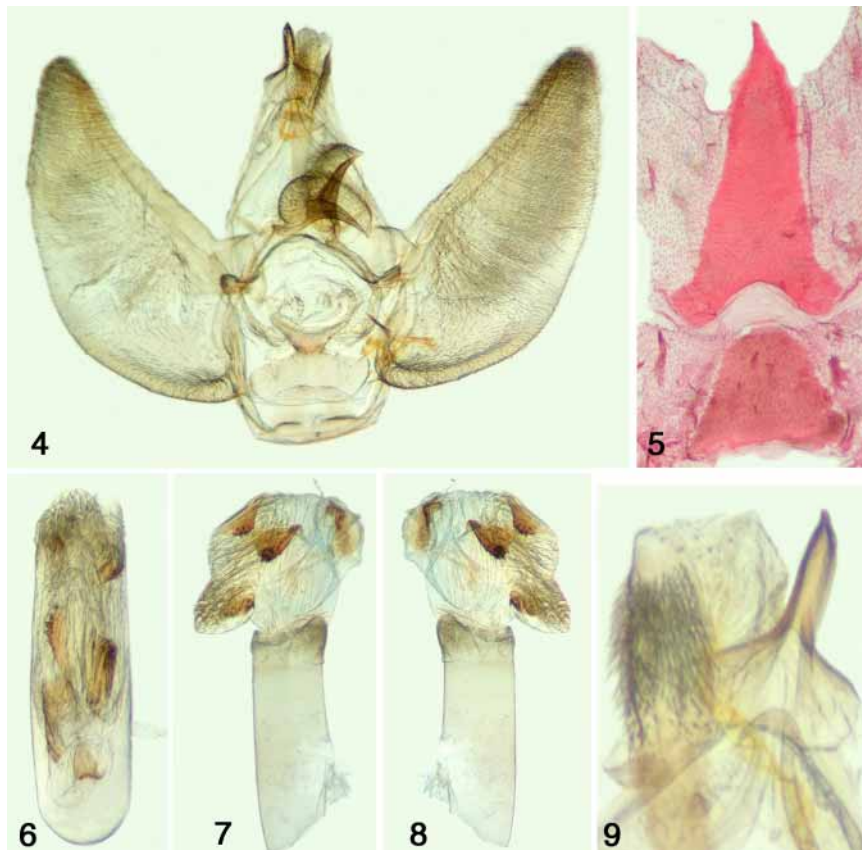
collected by J. A. Powell; Monterey Co., Carmel, 11.v.2001 (1m), 29.viii.1999 (1m), 10.x.2001 (1f), 6.vii.2002 (1f), all collected by F. P. Sala. All deposited in the author's collection.

Biology. The female holotype, from Monterey, California, was reared on cypress (*Cupressus macrocarpa* Gord.; Cupressaceae). Another larval host, possibly redwood (*Sequoia sempervirens* Endl.), must be used in Alameda Co., since cypress does not grow where Powell collected the Berkeley specimens (*pers. comm.*).

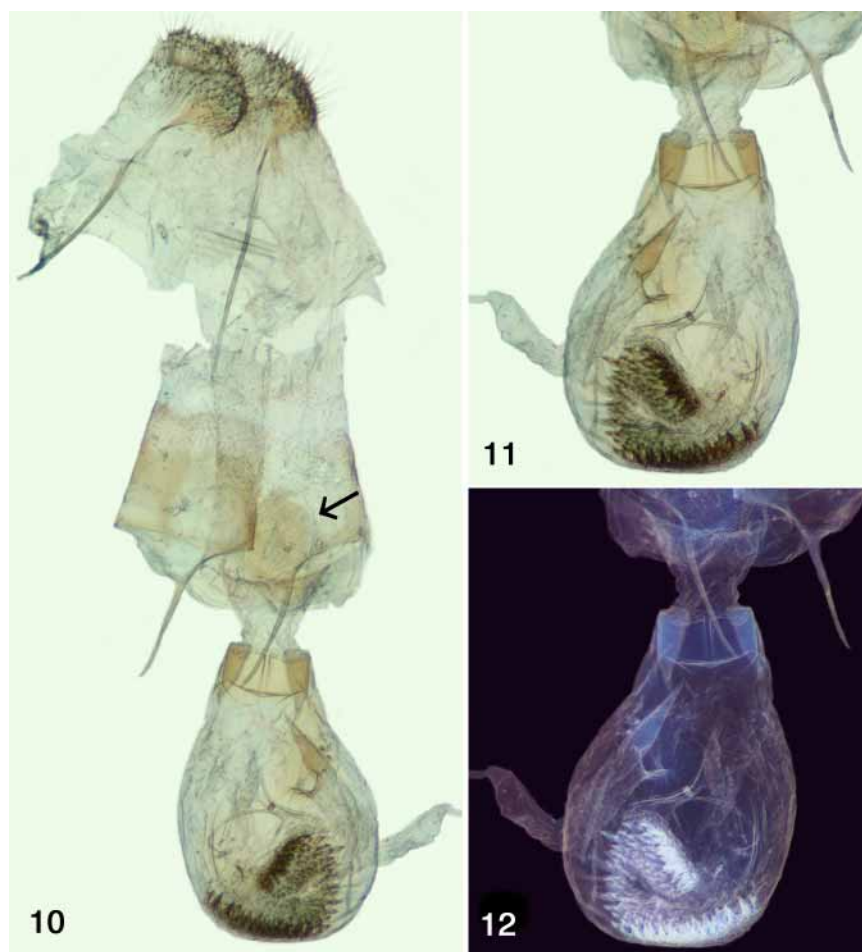
Flight period. Apparently March to December.

Distribution. Known from Alameda, Mendocino, and Monterey counties in central coastal California.

Discussion. Bolte (1990) tentatively placed *cupressata* in his *Eupithecia satyrata* species group, consisting of: *intricata taylorata* Swett, *satyrata dodata* Taylor, *absinthiata* (Clerck), *nimbicolor* (Hulst), *strattonata* Packard, *uinta* Rindge, and *albigrisata* Pearsall. He characterized the group (pp. 71–73) based upon similar features of the genitalia. The male genitalia of *cupressata* are consistent with other members of the group.



FIGURES 4–9. Male genital structures of *E. cupressata*. 4, genitalia with aedeagus removed; 5, 7th and 8th (top) abdominal sternites; 6, aedeagus; 7–8, lateral views of everted vesica; 9, oblique dorsal view of uncus and adjacent structures.



FIGURES 10–12. Female genital structures of *E. cupressata*. 10, ventral view of entire genitalia (arrow points to shagreened plate); 11 dorsal view of bursa copulatrix; 12, image-inverted view of same to enhance structural features.

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