

Eucosma Hübner of the Contiguous United States and Canada (Lepidoptera: Tortricidae: Eucosmini)

by Donald J. Wright and Todd M. Gilligan

256 pages, 133 species accounts, 30 colored plates, 49 monochrome plates. Hardbound with dust jacket. ISBN 978-0-933003-16-3. Published in 2015 by the Wedge Entomological Research Foundation.

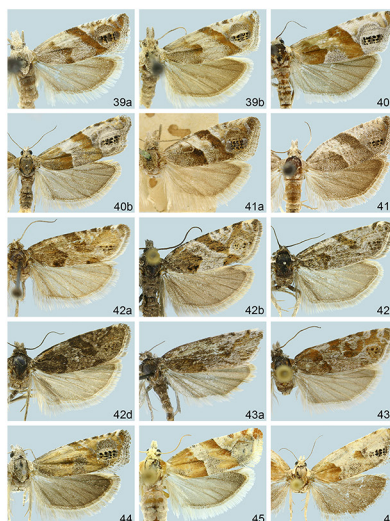
Eucosma Hübner is one of the largest genera in the Tortricidae, with more than 230 described species. It achieves its greatest species richness in the Nearctic, where members of the genus can be found in nearly every habitat, from the dunes of the Gulf Coast to the barren summits of the Rocky Mountains. This volume is the first comprehensive treatment of North American *Eucosma* to be published in more than 90 years. One hundred and thirty-three species are reviewed from the contiguous United States and Canada. Nine new species are described, nine new synonymies are proposed, 21 lectotypes are designated, and several unresolved species complexes are discussed. Diagnostic morphological features useful in species identification are emphasized and illustrated with 450 color adult images and 629 detailed genitalia drawings.

"This is a meticulously researched and beautifully illustrated guide to the moths of the tortricid genus *Eucosma* that occur in the lower 48 states and Canada. Taxonomic and nomenclatural problems are resolved, and details are provided to assist in the identification of all species. It is a must-have for those interested in the tortricid fauna of North America."

— John Brown
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The *circulana* group (species 1–15)

Nearctic *Eucosma*, as defined by Gilligan et al. (2014), includes fifteen species previously assigned to the genus by Heinrich (1923) due to the presence of a costal fold at the base of the male forewing. We treat these taxa as a loosely defined group based on that single forewing character and on overall similarity in genitalia. Most members of the group can be identified by forewing appearance. Shared genitalia characters include:

Male genitalia. Uncus weakly to moderately developed; valva with ventral emargination moderate to deep, ventral margin of neck narrowly flattened to deeply scooped-out; sacculus corner angulate; cucullus with dorsal and ventral lobes moderately to well developed, the ventral margin of the ventral lobe sometimes with one or more spiniform setae.

Female genitalia. Papillae anales moderately setose and, with the exception of *E. bilineata*, microtrichiate; lamella postvaginalis semi-rectangular in all but *E. purpuraria* and microtrichiate in all but *E. bilineata*; sternum 7 with narrowly rounded posterior lobes and concavely inflexed posterolateral margins; scaling of sternum 7 dense on posterior lobes and often on lateral extremities; ductus bursae encircled and usually contorted by sclerotized band/patch at juncture with ductus seminales.

The *circulana*-*gemellana*-*paragemellana* subgroup (species 1–3). These three species were reviewed by Gilligan and Wright (2013a). They are strikingly similar in forewing appearance and occur primarily on the Gulf and Atlantic coasts from east Texas to North Carolina. Subgroup characteristics include:

Forewing. Mean FWL: 6.4–9.3 mm; AR: 2.66–2.78; distal one-half of dorsal surface golden yellow, with large circular ocelloid region edged by arclike segments of metallic-gray striae; ocellus with two longitudinal rows (often partially confluent) of black dots, the dots separated by metallic-gray bars; proximal one-half of dorsal surface yellow brown to gray brown, sometimes with grayish or clay-colored longitudinal streaking.

Male genitalia. Valva with costal margin weakly concave to nearly straight, ventral emargination deep to moderate (NR: 0.19–0.42); ventrolateral margin of neck weakly to moderately scooped-out; anal angle with coarse setae on medial surface and one or more spiniform setae near apex.

1. *Eucosma circulana* Hübner, 1823 (Plate A, 1a–b; Plate 1, 1a–c)

Eucosma circulana Hübner 1823:28, fig. 363–364; Fernald 1908:455; Fernald 1908:46; Barnes and McDunnough 1917:160; Heinrich 1923:89; McDunnough 1930:16; Cresson 1968:1; Powell 1983:34; Bawendi 1989:175; Brown 2005:317; Gilligan and Wright 2013a:194; Gilligan and Wright 2013b:306.

Partheno circulana Fernald 1882a:36.

Neotype (designated by Gilligan and Wright 2013a; Plate A:1a). ♂, Kentucky, McCracken County, Paducah, 14 mi WNW Route 60 and Broad Street, 37°06'19" N, 88°59'89" W, D. J. Wright, 12 August 2008, USNM.

The proximal one-half of the forewing is uniformly yellowish brown to dark gray brown and lacks the pale clay-colored costal streak present in *E. gemellana* and *E. paragemellana*. Genitalic differences from the latter two species include: the ventrolateral margin of the valval neck is more strongly scooped-out; the dorsal lobe of the cucullus is more strongly produced; the ventral lobe of the cucullus is moderately produced but not elongate; the deepest points of inflection in the posterolateral margins of sternum 7 are

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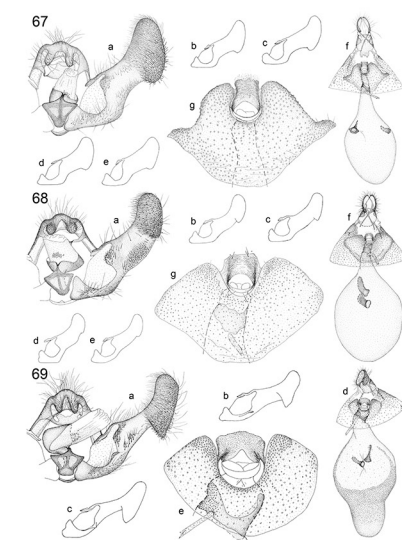


PLATE 25. 67. *Eucosma ferruginea*: a, males b-c, valvae; f, female; g, sternum 7. 68. *E. crassana*: a, males b-c, valvae; f, female; g, sternum 7. 69. *E. fulvipes*: a, male; f, female; g, sternum 7.

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