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## A NEW SPECIES OF *PELOCHRISTA* LEDERER FROM EASTERN NORTH AMERICA (TORTRICIDAE)

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**ABSTRACT.** *Pelochrista milleri*, new species, is described from eastern North America. This moth seems to have no particularly close congeners and in some respects appears to be affiliated with certain species of *Eucosma*. Illustrations of the adult and genitalia are included.

**Additional key words:** Nearctic, Olethreutinae, Eucosmini, *fiskeana*, *pulveratana*

Faunal surveys in Ohio and Kentucky during the past two decades generated numerous records of a previously unnamed olethreutine moth described below as *Pelochrista milleri*, new species. Additional specimens found in institutional and private collections suggest that the range of this insect includes northeastern United States, the eastern half of southern Canada, and much of the Midwest. The purpose of this note is to make a name available for this species for inclusion in a regional guide to the Olethreutinae currently in preparation.

The olethreutine genera *Pelochrista* Lederer and *Eucosma* Hübner together account for nearly 180 named species in the Nearctic region, the vast majority of which are currently assigned to *Eucosma*. The distinction between the two taxa, however, is not particularly well defined, and it isn't difficult to find instances, *milleri* for one, in which the choice of genus seems somewhat arbitrary. Current practice places species with an especially stout spiniform seta at the anal angle of the cucullus in *Pelochrista*, and I have followed that precedent in this case. Nevertheless, on the basis of forewing color and maculation *milleri* could easily be confused with *E. fiskeana* Kearfott, and the female sterigma has the distinctive structure found in members of the *E. pulveratana* (Walsingham) group. Revisionary work that addresses the considerable variety found in these groups and includes an assessment of the female genitalic characters is clearly needed. Until then generic assignments must often be tentative.

To my knowledge there are no published images of the adult of *E. fiskeana*, so I've included one for comparison. The drawing in Miller (1987) of the sterigma of *E. consobrinana* Heinrich is typical of the members of the *E. pulveratana* group. Illustrations of the male genitalia of these two species can be found in Heinrich (1923).

### MATERIALS AND METHODS

I examined 57 adult specimens (8 ♂, 49 ♀) and 21

associated genitalia slides from the following collections: Canadian National Collection (CNC), Dennis Profant (DP), George J. Balogh (GJB), Illinois Natural History Survey (INHS), Loran D. Gibson (LDG), United States Museum of Natural History (USNM) and Donald J. Wright (DJW). Forewing length (FWL) refers to the distance from base to apex, including fringe. Aspect ratio (AR) is defined as FWL divided by medial forewing width, the latter measurement taken perpendicular to the dorsal margin. The letter n signifies the number of measurements supporting a particular statistic. Forewing pattern terminology follows Brown & Powell (1991) as modified by Baixeras (2002).

### SYSTEMATICS

#### *Pelochrista milleri*, new species

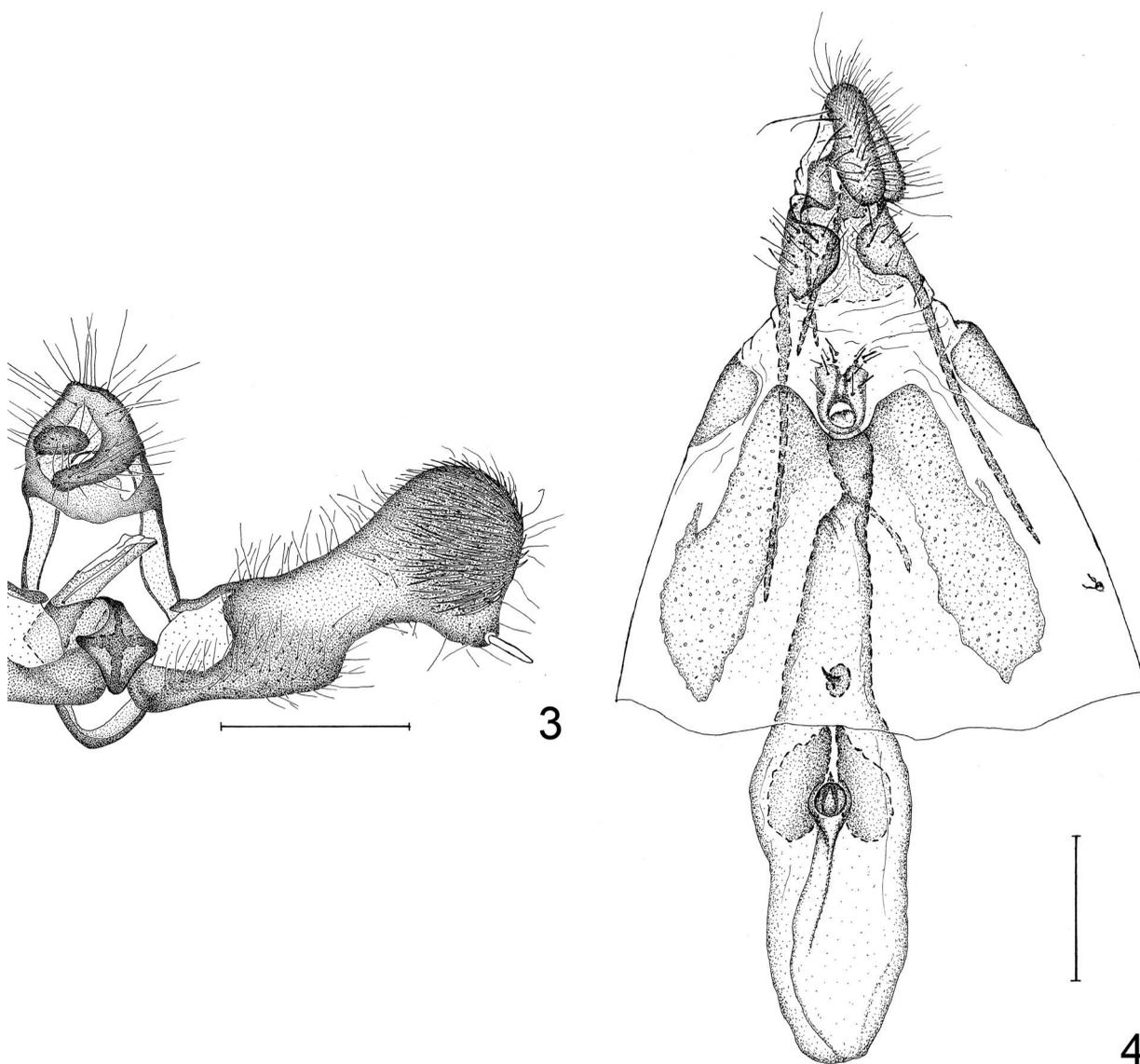
(Figs. 1, 3, 4, 5)

**Diagnosis.** This is the only grayish-brown *Pelochrista* in eastern North America with both a fasciate forewing pattern and a circularly shaped cucullus. *Eucosma fiskeana* Kearfott (Fig. 2) is similar in forewing color and maculation but has quite different male genitalia (Heinrich (1923): Fig. 152). Members of the *Eucosma pulveratana* group are similar to *milleri* in the structure of the sterigma, in the pattern of sclerotization of sternum VII, and in having variably shaped sclerotized patches on the surface of the corpus bursae, but they are easily distinguished from *milleri* by both forewing pattern (see, e.g., the photograph of *consobrinana* in Miller (1987)) and by the shape of the male valva (Heinrich (1923): Figs 238, 242, 243).

**Description.** *Head:* Lower frons pale tan; scales of upper frons and vertex gray-brown with pale apices and bases; labial palpus with brown to tan lateral surface and ventral edge, creamy white to tan medial surface and dorsal edge, third segment brown, often with pale tan apex; antenna grayish brown. *Thorax:* Dorsal surface concolorous with head, ventral surface white to pale tan; legs brown to pale tan with dark tarsal annulations. *Forewing* (Fig. 1): ♂ FWL 5.5–7.2 mm (mean = 6.5, n = 6), AR = 2.56, ♀ FWL 6.5–9.6 mm (mean = 7.9, n = 32), AR = 2.53; basal one half of costa mildly convex, distal one half nearly straight, terminal margin straight and perpendicular to costa, tornal angle gently rounded. Dorsal surface grayish-brown with dark brown markings as follows: basal and subbasal fasciae confluent, outer



FIGS. 1-2. 1, *P. milleri*, ♂ holotype, Adams Co., Ohio. 2, *E. fiskeana*, ♂ Adams Co., Ohio.



FIGS. 3-4. *P. milleri* genitalia. 3, ♂ slide DJW 384. 4, ♀ slide DJW 569. Scale bars = 0.5 mm.

margin of resulting basal patch sharply defined from dorsum to discal cell and barely distinguishable from there to costa, median fascia extending from mid costa to dorsum, usually interrupted anterior to cubital vein, resulting in triangular mark on pretornal portion of dorsum, a narrow band along anterior and distal margins of ocellus, and a small apical spot, all edged to varying degrees with white scaling; ocellus with brown central field crossed longitudinally by 2 or 3 black dashes and bordered basally and distally by transverse silvery-gray bars; costa usually with 5 paired, white strigulae and associated silvery-gray stria; fringe scales gray brown with lighter apices. *Hindwing*: uniformly gray brown, fringe a shade lighter. *Male genitalia* (Fig. 3): uncus very weakly divided medially into two dorsally setose lobes; socii long, finger like, and moderately setose; gnathos a narrow band; aedeagus long and narrow, vesica with one deciduous cornutus; valva with costal margin mildly concave, invagination of ventral margin moderate; cucullus with apical margin circular, ventral angle produced into semitriangular projection supporting one stout spine, and medial surface densely setose. *Female genitalia* (Fig. 4): papillae anales facing laterally and moderately setose; sterigma with anterior margin rounded and ringlike, lamella postvaginalis well developed, with shallow central trough and medially indented posterior margin; sternum VII strongly sclerotized along posterior and lateral margins, posterior margin invaginated to two thirds length of sterigma; ductus bursae short, constricted anterior to ostium; corpus bursae long and narrow, a large signum at mid bursa on ventral surface, flanked by two sclerotized patches on opposite dorsolateral surfaces, a smaller thorn-like signum on dorsal surface posterior to dorsolateral sclerotization.

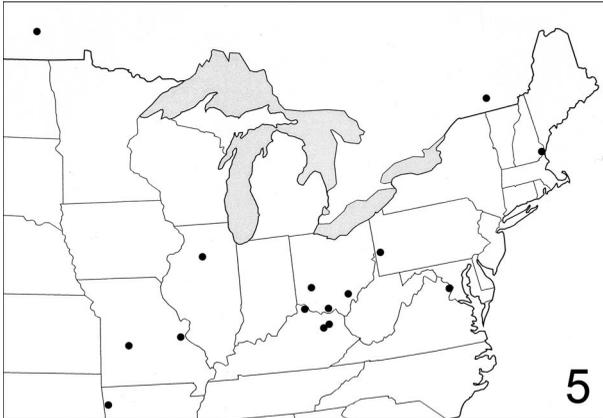


FIG. 5. Distribution records for *milleri*.

**Holotype.** ♂, Ohio, Adams Co., 1 mi. S. E. of Lynx, 25 July 1997, D. J. Wright, genitalia slide DJW 384, deposited in USNM. Type locality at 38°47'37"N, 83°24'19"W.

**Paratypes.** ILLINOIS: Putnam Co., M. O. Glenn, 7 August 1966 (1 ♂, genitalia slide DJW 452). KENTUCKY: Bath Co., Cave Run Rec. Area, Rt. 129 & Zilpo Rd., L. D. Gibson, 17 August 1990 (1 ♀); Campbell Co., A. J. Jolly Co. Pk., 23 July 1991, L. D. Gibson (1 ♀; genitalia slide LDG 154); Laurel Co., DBNF, Powerline Cut W. side Marsh Branch Rd., L. D. Gibson, (1 ♀); Rowan Co., 3.3 mi. S. of 519 on Co. Rd. 1274, D. J. Wright, 26 August 1994 (5 ♀; genitalia slides DJW 812, 821); W. side Rt. 1274, 3.3 mi W. Rt. 519, L. D. Gibson, 26 August 1994 (5 ♀); Rt. 1274, 2 mi. W. of Rt. 519, L. D. Gibson, 16 July 1994 (1 ♀). MANITOBA: Aweme, N. Criddle, 11 July 1925 (1 ♀; genitalia slide JFL1609). MISSOURI: Jefferson Co., Victoria Glade, 2.5 mi. SE Hillsboro, G. J. Balogh, 8 August 1982 (1 ♀). OHIO: Adams Co., 1 mi. SE of Lynx, D. J. Wright, 2 July 2003 (1 ♀), 5 July 1996 (1 ♀), 12 July 1998 (1 ♂, 5 ♀; ♀ genitalia slides DJW 563, 569), 25 July 1997 (6 ♀; genitalia slide DJW 820), 25 July 1998 (2 ♀, genitalia slide DJW 813), 1 August 1997 (1 ♀), 3 August 2000 (1 ♀), 12 August 1998 (1 ♀);

Athens Co., Hocking College, D. Profant, 29 July 2005 (1 ♀); Greene Co., Wright-Patterson AFB, Huffman Prairie, Site G-3, E. H. Metzler, 28 August 1992 (3 ♂; genitalia slides LDG 146, 156). QUEBEC: St-Liboire, em. 18 June 2002 (1 ♂; genitalia slide JFL 1608). Paratype depositories: CNC, DP, GJB, INHS, LDG, USNM, and DJW.

**Etymology.** This species is named in honor of William E. Miller. His generosity with advice and encouragement over the years is greatly appreciated by the author.

**Distribution and biology.** Figure 5 illustrates the geographic range of *milleri* based on specimens I examined. Adult flight occurs between early July and the end of August. The male from Quebec was reared from a larva found boring in roots of *Helianthus tuberosus* L.

**Remarks.** In my experience, males are much less likely to be attracted to ultraviolet light than females (only 8 of the 57 specimens examined were males). Males are also smaller than females, the difference in average FWL being 1.4 mm.

This species has occasionally been confused with *Eucosma wandana* Kearfott. In the USNM there are two rather old female specimens of *milleri* that have previously been determined as *wandana*. One, which was cited in Gibson and Miller (1993), bears a red label with the inscription "Type No. 8243 U.S.N.M", but it has no pin label indicating a specific name. This specimen cannot be a syntype of *wandana*, which was described from a single male. The intent of the label is unknown.

#### ACKNOWLEDGMENTS

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