A NEW SPECIES OF *EPINOTIA* HÜBNER
(LEPIDOPTERA: TORTRICIDAE)

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**Abstract.**—*Epinotia huroniensis*, new species, from Michigan and Quebec is described. Apomorphic characters of this species and related species are discussed. An unusual form of anellus is described.

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Research on the systematics of North American *Epinotia* has been in progress for the last four years and a large number of new species will be described in a future treatise of the genus. The following new species is described in advance of this projected work to provide a name for a guide to the Olethreutinae of the north central states, currently in preparation by William E. Miller.

The description of the adult was made from specimens examined under an incandescent light source. The *Methuen Handbook of Color* (Kornerup and Wanscher, 1967) was used as the standard for description of colors. Genitalia preparations were examined with a phase-contrast microscope and a stereoscopic dissecting microscope.

*Epinotia huroniensis* Brown, New Species

Figs. 1–4

**Description.**—*Head:* Vertex and labial palpus orange white, length of 3rd palpal segment 0.42 length of 2nd (*♂*); antenna with 43–45 segments (*♂*, 1 ♀).

**Thorax:** Mesonotum and tegulae orange white mixed with orange gray.

**Forewing** (Fig. 1): 5.5–6.0 mm long; length of ♀ costal fold 0.36–0.38 length of forewing; termen concave; basal patch extending from costa to dorsal margin, brown with transverse orange white lines, broken between costal fold and radius by orange white in some males; post-basal area white or orange white, some specimens with 1 or 2 brown strigulae on dorsal margin; median fascia extending from costa to dorsal margin, brown mixed with orange or grayish orange; ocellus dark brown mixed with grayish orange and orange white, some scales with white tips, bordered by 2 trans-
verse silvery bars; apical area orange; costa with 4 pairs of strigulae, each separated by dark brown: 1st row of fringe scales dark brown, outer fringe scales grayish brown with white bases; fringe with white streak at R₅.

**Hindwing:** Light grayish brown, without contrasting colors above or below.

**Abdomen:** Light grayish brown, without contrasting colors dorsally or ventrally; sternite II with caudal apodemes.

**Male genitalia** (Figs. 2, 4): Tegumen narrow; uncus basally constricted, apically cleft, apices rounded and turned ventrally; socius broad at base,

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**Fig. 1.** *Epinotia huroniensis*, holotype: approximately 4× natural size.

**Fig. 2.** *Epinotia huroniensis*, paratype, male genitalia; Huron Mts., Mich.; R. L. Brown genitalia slide 406. Scale line = 1 mm.
Fig. 3. *Epinotia huroniensis*, paratype, female genitalia; Norway Bay, Que.; R. L. Brown genitalia slide 205. Scale line = 1 mm.

apex digitate, dorsal margin extending from base of digitus straight to base of uncus, setose except for digitate apex; gnathos arising from ventral bases of socii, heavily sclerotized basally, with small spinules apically; caulis with wide medial flanges that diverge below aedeagus to form a wide ventral plate, continuous with dorsal anellar plate; aedeagus entering middle of anellar plate, with approximately 17 cornuti; cucullus with lateral and ven-
tral acute processes; neck long, narrow, arched, without setae; sacculus without spine cluster, ventrally rounded; lateral wall of valva with apodeme from ventral base to neck, disrupted below costal hook. Six preparations examined.

**Female genitalia** (Fig. 3): Sternite VII broadly sclerotized, smooth and evenly scaled, medial anterior area slightly depressed, posterior margin inflected, without emargination around ostium. Tergite VIII with lateral extensions, sparsely setose laterally, scales absent, anterior margin without emarginations or extensions. Papillae anales with deep, wide, posterior cleft, some setae thickened and recurved apically; sterigma forming ringlike antrum cephalad to posterior margin of sternite VII, with posterior lateral extensions, lamella postvaginalis reduced; post-sterigma membrane covered with small spinules between ostium and papillae anales; ductus bursae with sclerotized ring, longer on one side; corpus bursae globular, spinulate, signa subequal in size and distance from neck. Two preparations examined.

**Type.** —♀, Quebec, Norway Bay, 21-VII-1938, E. G. Lester; Photograph No. 13; Type No. 15941: in Canadian National Collection, Ottawa.


**Discussion.** —Plesiomorphic states of morphological characters within *Epinotia* include the following: The socius is broad and rounded apically, as in *Epinotia aceriiella* (Clemens); the basal third of the aedeagus is sheathed by an anellus that is extended dorsally, forming a dorsal anellar plate, as in *Epinotia stroemiana* (F.) (Fig. 6); the caulis consists of two medial flanges that are fused or approximate from the juxta to the aedeagus; and the valva has a short, flat or slightly curved neck, a cucullus without processes, and a spine cluster on the sacculus. In the female, the posterior margin of sternite VII is not inflected; the papillae anales have straight, simple setae; the lamella postvaginalis is developed; and the ductus bursae has a short sclerotized band.

*Epinotia huroniensis* shares four unique apomorphic characters with *silvertoniensis* Heinrich, *miscana* Kearfott, and *terracoctana* Walsingham. This species group is related to *digitana* Heinrich, *ruidosana* Heinrich, *heucherana* Heinrich, *nigrabana* Walsingham, *nigrabanoidana* McDunnough, and *removana* McDunnough. All the species have a socius similar to that of *huroniensis.* In all but *removana,* the spine cluster of the sacculus is
absent and the lamella postvaginalis is reduced. In females of *heucherana*, *ruidosana*, *digitana*, and the *huroniensis* group, the ductus bursae has a long sclerotized band and the posterior border of sternite VII is inflected. In *digitana*, the cucullus has a ventral process and the papillae anales have
recurred setae. The species of the huroniensis group have long, arched valvae necks, lateral and ventral processes from the cuculli, and a flat anellar plate surrounding the aedeagus. The papillae anales have setae that are thickened and recurred in huroniensis and terracoctana and spatulate and recurred in miscana and silvertoniensis. The papillae anales in the latter two species are floricomous, similar to those of some species of Decodes, Eana, and Acleris (Tortricinae).

The transformation of the anellus from the plesiomorphic state to the apomorphic state found in the huroniensis group is indicated by intermediate states in related species. In nigralbana, nigralbanoidana, and removana, the anellus is similar to that of stroemiana; however, it is narrow and surrounds only the extreme base of the aedeagus. The margins of the medial flanges of the caulis are approximate near the juxta, but diverge below the aedeagus. In digitana, heucherana, and ruidosana, the medial flanges are widely divergent and form a flat ventral plate below the base of the aedeagus; the dorsal anellar plate is secondarily reduced (Fig. 5). In the huroniensis group, the medial flanges diverge from the juxta and form a flat ventral plate, confluent with the dorsal plate, and surrounding the base of the aedeagus (Fig. 4).

In forewing pattern and color, this new species is most similar to silvertoniensis, a larger species with a forewing length of 7–8 mm. The base of the uncus is more constricted and the lateral process of the cucullus more developed in silvertoniensis than in huroniensis. As mentioned before, the female of silvertoniensis can be distinguished by floricomous papillae anales with spatulate setae. Epinotia silvertoniensis, miscana, and terracoctana are distributed in western United States and Canada.

The host plant of huroniensis has not been recorded. Species of Ericaceae are utilized by the three most closely related species, and may also be utilized by huroniensis.

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LITERATURE CITED