LEPIDOPTERA NOVAE, 1 (3-4): 109-115

REVIEW OF THE GENUS EPIDROMIA
IN NORTH AMERICA
(LEPIDOPTERA: NOCTUIDAE: CATOCALINAE)

J. DONALD LAFontaine¹ AND TERHUNE S. DICKEL²

¹ Biodiversity Program, Agriculture and Agri-Food Canada,
Canadian National Collection of Insects, Arachnids, and Nematodes
KW Neatby Bldg., C.E.F., Ottawa, Ontario, Canada K1A 0C6

² P. O. Box 567, Anthony, Florida 32617-0567, USA
Research Associate, Florida State Collection of Arthropods,
Gainesville, Florida 32614-7100, USA

ABSTRACT. —The three North American species of Epidromia Guenée are diagnosed and their synonymy revised. The other three species in the genus are briefly discussed. Adults of all six species, and male and female genitalia for the three North American species, are illustrated.


For many years a single species of Epidromia Guenée was known from the southeastern United States and was identified as Epidromia delinquens (Walker, 1858). This name was associated with the genus Mocis Hübner by Hampson (1913), but for some reason the name continued to be used for the species until 1983 when Epidromia poephiloide (Guenée) was used for the species delinquens placed in its synonymy (Franclemont and Todd, 1983). Solis (1986) described the species as Epidromia fergusoni Solis, 1986, and in the same publication mentioned two other undescribed species as occurring in southern Florida, one at Homestead and another on Big Pine Key. She also listed the 20 other species group names associated with Epidromia but did not discuss their identities or synonymies. Five of these names are synonyms of Thermesia pyraliformis Walker, 1858, which was moved into Epidromia by Poole (1989) and reported as new for the United States as Thermesia pyraliformis by Dickel (1991). It was later removed from Epidromia and placed in the genus Manbuta Walker by Becker (2001). In the same paper, Becker (2001) synonymized many of the species names in Epidomia under Epidromia lietnaris (Hübner, 1823) (Fig. 20), a species that had not previously been associated with Epidromia. The identity of the three North American species and their synonymies, as best as we have been able to determine them, are discussed below.

Epidromia lietnaris (Hübner, 1823)
Fig. 1–6, 13, 16, 17, 20

Homerothema lietnaris Hübner, 1823: 17 plate [49], figures 277, 178. TL: Surinam [♀; lost; neotype designated by Becker (2001)].
Ophisma profonta Walker, 1858a: 1423. TL: Brazil [♀, BMNH].
Renicia saturator Walker, 1858a: 1502. TL: Brazil [♀, BMNH].
Thermesia suffusa Walker, 1858b: 1561. TL: Dominican Republic [♀, BMNH].
Thermesia inficilera Walker, 1858b: 1570. TL: Honduras [♀, BMNH].
Thermesia glaucocerc Walker, 1858b: 1571. TL: Brazil [♀, BMNH].
Thermesia lentic Walker, 1858b: 1572. TL: Brazil [♀, Oxford].

This is the most widespread species in the genus with a range extending into southern Florida and southern Arizona.

Males most commonly have a brownish-gray ground color with a violet tint, but pale buffy-brown forms occur in some areas, possibly associated with more xeric habitats. Often fresh specimens are a dark blackish brown but fade to a paler brown with age. On the forewing, the antemedial line is slightly sinuous and slightly paler than the ground color, but is mainly defined by the band of blackish-brown shading along its outer margin. The postmedial line is a contrasting pale-buff line with a band of blackish-brown shading on its inner margin; the pm line is almost straight from the posterior margin of the wing almost to the costa where it bends abruptly 90° towards the wing base. The basal line, if present, is only slightly darker than the ground color. Usually there is a diffuse, irregular, dark medial line extending across the wing on the basal side of the reniform spot and usually this blends into dark shading on the inner side of the postmedial line. An irregular, zigzagged, subterminal line is defined mainly by darker shading in the subterminal area on the inner side of the line and paler shading on the outer side, but in many specimens this dark shading is intensified into a series of dark, slash-like markings, especially toward the wing apex. The orbicular spot is a small round dark dot. The reniform spot is elongated and concave on the outer margin, which gives it a kidney shape. Most commonly, the reniform spot is black with a speckling of white scales but these are not concentrated at the top or bottom of the spot. In some specimens the reniform spot is mainly shaded with the ground color but still has a black outline and a speckling of white scales. The outer margin of the forewing is generally very slightly convex, but with a very slight concave area below the costa. Forewing length is 20 to 24 mm. The hindwing is similar in ground color to the forewing and is bisected by the almost straight, pale-buff postmedial line. The ground color basal to the pm line tends to be darker near the line, whereas the ground color distal to the pm line becomes darker toward the wing margin where it often takes on a violet hue. The outer margin of the hindwing is abruptly angled at vein M3 and the wing margin is almost straight for the third of the margin above the angle (from Rs to M3). The undersides of the wings are an even gray brown with a darker, diffuse postmedial line on both wings and a reniform spot on the forewing. The angle on the outer margin of the hindwing in
Figs. 1–12. Adults of *Epidromia* spp.: 1–6. *E. lienaris*: 1) ♀, Fuchs Hammock, Dade Co., Florida (1a, upperside, 1b, underside). 2) ♂, 10 mi W El Salto, Durango, Mexico. 3) ♀, 5 mi N Mazatlán, Sinaloa, Mexico. 4) ♂, 5 mi N Mazatlán, Sinaloa, Mexico. 5) ♂, Anse Galet, 1 km SSW Anse La Raye, 50 m, St Lucia. 6) ♀, Anse Galet, 1 km SSW Anse La Raye, 50 m, St Lucia. 7–9. *E. ponsonii*: 7) ♀, No Name Key, Monroe Co., Florida (7a, upperside, 7b, underside). 8) ♂, 5 mi N Mazatlán, Sinaloa, Mexico. 9) ♀, No Name Key, Monroe Co., Florida. 10–12. *E. rotundata*. 10) ♂, Siesta Key, Sarasota Co., Florida (10a, upperside, 10b, underside). 11) ♀, 5 mi N Mazatlán, Sinaloa, Mexico. 12) ♂, Egmont Key, Hillsborough Co., Florida.
the Florida population is not as prominent as in some Neotropical populations (e.g., Fig. 5). The wing shape seems to be consistent at each locality. However, it varies from place to place and the variation does not seem to correlate to geographical area, habitat, or any differences in genitalia or DNA.

Females, on average, are smaller than the males with a forewing length of 19 to 23 mm, but they appear even smaller because of the different wing shape. The wings are not as broad, and the hindwing margin is evenly rounded. The ground color is usually darker than in the male and often there is some yellow-buff or coppery shading in the subterminal area, such as in Hübner’s original illustration (Fig. 20).

In the male the foretibia has a massive, often rounded, tuft of scales. On the abdomen there are three clusters of spike-like setae on the fifth abdominal sternite (Fig. 16), one in the middle and one on each side on a posterior lobe of the sternite. The middle tuft is often visible without removing any of the abdominal vestiture and the lateral ones can be seen by gently removing some of the hair-like scales from the area. The 8th abdominal sternite is deeply excavated in the middle, forming a rounded concave area with a flap-like extension on each side of the sternite bearing a large tuft of setae on an irreversible sac. In the male genitalia the valves are relatively simple with four tufts of setae (in addition to the normal setae on the valves). These are a large tuft of long setae on the outer side of the sacculus that extends almost the full length of the valve, a shorter tuft of setae on the inner surface of the valve near the apex, and two small tufts of setae on the apical margin of the valve, one on the ventral apex and one on the dorsal apex. The aedeagus is strongly bent 1/3 of the distance from the base and the apical 2/3 is evenly curved. The vesica is globular and multi-pouched, like most Catocalinae, but the apical two diverticula are diagnostic. One of these is elongated and cylindrical with a swollen, rounded bubble in the middle; the second one is elongated and tapered, like a cone.

Females lack the leg and abdominal modifications of the male. The seventh sternite is tapered laterally and notched posteriorly with a rounded posterior margin on each side of the central notch.

Epidromia lienas is has been found in Florida only in the Homestead area. It occurs from southern Florida and southern Arizona southward through the Caribbean and Central America to Peru and Brazil and even occurs on the Galapagos Islands, Ecuador.

Analysis of cytochrome oxidase (CO1) sequences from Arizona, Costa Rica, the Dominican Republic, and Mexico are almost identical and also suggest that the species is widespread. CO1 data from additional areas, especially Brazil would be helpful.

Epidromia pannosa Guénée, 1852
Figs. 7-9, 14, 18

Epidromia pannosa Guénée, 1852: 326. TL: Brazil [δ, BMNH].
Epidromia pannosa Guénée, 1852: 326, plate 23, figure 5. TL: Brazil [δ, lost].

Note—The type of E. zetophora is lost but the name is placed in synonymy with E. pannosa because of the very pale overall coloration of the specimen illustrated by Guénée (1852).

Ophthysa valida Walker, 1865: 953. TL: Dominican Republic [δ, BMNH].

This species is widespread but has a much more spotty range than E. lienas. In the United States it has been found only in the lower Florida Keys.

Males resemble those of E. lienas in most characters, although the dark areas on the wing (outer part of the median and subterminal areas) tend to be less extensive and less contrasting than in E. lienas. Like E. lienas the foretibia has a prominent scale tuft and the fifth sternite has three spine clusters. Also, as in E. lienas, specimens fade to a paler brown with age, and the hindwing shape varies from locality to locality and both species have the same hindwing shape in areas where they occur together. The male genitalia are similar to those of E. lienas, except for the shape of one of the apical diverticula in the vesica. The apical diverticulum that is cone-shaped in E. lienas is parallel-sided and truncated in E. pannosa. The most obvious differentiating character for E. pannosa is a sex patch in the male that forms a yellow streak on the underside of the forewing that lies between veins R5 and M2 and extends from the discal spot to the wing margin. It is possible that females cannot safely be separated from those of E. lienas, but in the few specimens examined the posterior end of the seventh sternite is more prominently tapered so the posterior margin on each side of the central notch is obliquely angled rather than rounded. Also, on average, the wing markings are less contrasting than those of E. lienas females.

Epidromia pannosa has been found in Florida only in the lower Florida keys (Big Pine Key, No Name Key, and Bahia Honda Key). It occurs from southern Florida and central Mexico (Mazatlán and Tamazunchale) southward through the Caribbean and Central America to Brazil. On No Name Key, a single larva was found by Terhune Dickel on Psidium longipes (Berg) Vaugh (Myrtaceae), commonly called mangrove-berry or long-stalked stopper. This larva was reared in the lab on guava (Psidium guajava L.) (Dickel 1991).

Cytochrome oxidase (CO1) sequences are available only from the Dominican Republic.

Epidromia rotundata Herrich-Schäffer, 1869
Figs. 10-12, 15, 19

Epidromia rotundata Herrich-Schäffer, 1869: 159. TL: Cuba [δ, MZC, Havana; examined by Becker (2005)].

This is the most common and widespread species in the southeastern United States and occurs from Georgia to southern Florida. It is also recorded from Cuba and from xeric habitats in Mexico on the Yucatan Peninsula and on the west coast of Mexico.

Males can be identified by the rounded margin of the hindwing, the slightly more falcate forewing apex, and by the male genitalia. Also, the three patches of spine-like setae on the fifth sternite in E. lienas and E. pannosa that are replaced by three tufts of hair-like setae in E. rotundata. In the male genitalia the apex of the uncus is more slender, the ventral margin of the valve has a rounded, flap-like process subapically, and the arrangement of pouches in the vesica differs. In the female genitalia, the lobes on posterior margin on each side of the central notch are slightly truncated, not evenly rounded.

Epidromia rotundata was nominally described from a single female, but it is clear from the original description that Herrich-Schäffer mistook a male for a female. This is easy to do in Epidromia because the male abdomen is broad and rounded posteriorly, whereas that of the female is more slender and tapered posteriorly, which is the opposite of what is normally expected. The female-like shape of the male abdomen is caused by the large tufts of hair-like scales associated with the male genitalia. Two characters given by Herrich-Schäffer could only apply to a male: the outer part of the medial area of the forewing is described as having extensive dark shading that tapers out before the costa; and the large tuft of scales on the foretibia is described. The name rotundata refers to the rounded shape of the hindwing, which is diagnostic for this species.

Typical Epidromia rotundata occurs in the southeastern United States (Georgia and Florida) and in Cuba. A more contrastingly marked form (Fig. 11) occurs in Mexico.
NEOTROPICAL SPECIES OF EPIDROMIA

In addition to the three species with ranges that extend into the United States, there are three additional species known from South America. Several undescribed species also occur in Central and South America.

Epidromia conspersata Dognin, 1912

This species is characterized by the very dark blackish-brown ground color extensively shaded by pale blue-gray scales. The postmedial lines on the forewing and hindwing are straight, except where the line bends abruptly 90° near the forewing costa. The antemedial line on the forewing also is characteristic; it has three outward lobes, the middle one, the largest, is near the middle of the wing on the cubital vein. Epidromia conspersata is known from Brazil, Colombia, Costa Rica, Ecuador, Guyana, and Venezuela.

Epidromia poaphiloides Guenée, 1852


The type of this species is lost but the name has been associated with Epidromia for many years and was used as the senior synonym of Epidromia pannosa in the most recent North American list (Franclemont and Todd 1983). It was described from two females, which was probably a factor in Guenée not recognizing it as congenic with Epidromia pannosa. The original description refers to a blackish streak extending from near the top of the postmedial line to the wing apex, giving the impression that the line actually goes to the apex. This apical extension is present in some species of the genus Lesmone Hubner (= Bendis Hubner), probably explaining Guenée's generic placement, but this character is only present in one species of Epidromia. Specimens in the National Museum of Natural History, Washington, from French Guiana (e.g.,


Fig. 22) are an excellent match for Guenée's description of Bendis poaphiloides. A specimen from the Guenée Collection from French Guiana is in the Natural History Museum, London, but there is no indication that it is a syntype. Epidromia poaphiloides is known from Brazil, French Guiana, and Guyana.

Epidromia zephyritis Schaus, 1923

Fig. 23

Epidromia zephyritis Schaus, 1923: 43. TL: Ecuador: Galapagos Islands [USNM].

This species is characterized by the dark purplish-black ground color. It is endemic to the Galapagos Islands of Ecuador.

EXCLUDED SPECIES

Obroasis gargarulus Schaus, 1912: 517. TL: Costa Rica [USNM].

This species has been associated with Epidromia in some lists but the genitalia are unlike those of any species of Epidromia in so many characters, both male and female, that we exclude it from Epidromia.

ACKNOWLEDGMENTS

We thank Michael Pogue (Systematic Entomology Laboratory, National Museum of Natural History, Washington, DC), Martin Honey (Natural History Museum, London), and Bo Sullivan (Beaufort, NC) for the loan of specimens. We also thank Bo Sullivan for reading the manuscript and providing helpful comments.

LITERATURE CITED

Becker, V. O.


Dickel, T. S.


Dognin, P.


Guenée, A.


Hampson, G. F.


Herrich-Schäffer, A. G. W.


Hubner, J.


Poole R. W.


Schaua, W.

Solís, M. A.

Walker, F.

Wallengren, H. D. J.