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TORTYRA METALMARK MOTHS OF FLORIDA (LEPIDOPTERA: CHOREUTIDAE)

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ABSTRACT.— The two known Florida and North American species of the Neotropical genus Tortyra are reviewed, including Tortyra slossonia (Fernald) and Tortyra iocyaneus, new species. Both species occur only in southern Florida and the Bahamas.

KEY WORDS: Bahamas, biology, Cuba, hostplants, Moraceae, Neotropical, Saptha, Tortyra iocyaneus n. sp., West Indies.

The genus Tortyra is a group of brilliantly colored small day-flying moths in the metalmark moth family, Choreutidae, with 21 described species and at least half again as many undescribed species. The genus is only known from the Neotropical region, barely entering the subtropical portions of the Nearctic region in southern Florida. Tortyra was restricted to the New World species in a previous paper (Heppner, 1981), leaving its former synonym, Saptha, as the corresponding genus in the Old World tropics with another 18 known species. Both genera include species only known to utilize hostplants in the genus Ficus (Moraceae). Neither genus has had a modern description, thus Tortyra is redescribed herein.

Florida harbors two species of Tortyra, one of which is here described as new. Both species also occur in the Bahamas and have close relatives among the Caribbean Tortyra.

TORTYRA Walker

Tortyra Walker, 1863:510. (Type-species: Tortyra spectabilis Walker, 1863 [designated by Walsingham, 1914])

Choregia Felder & Rogenhofer, 1875:6 [preocc. by Warren, 1899 (Geometridae)]. (Type-species: Choregia fulgens Felder & Rogenhofer, 1875 [by present designation])

Choregia Zeller, 1877:191, redesc. (Type-species: Choregia fulgens Felder & Rogenhofer, 1875 [by present designation])

Diagnosis.— Tortyra moths are easily recognized by their bright metallic iridescence of the forewings and body, and the "thickened" appearance of the antennae. The Old World Saptha are the only Choreutidae that appear similar, but are not found in the New World and have differences in the wing venation.

Description.— Adults small to moderate (8-22mm wingspread). Head: frons smooth, with scale tufts at antennal bases; vertex with scales loosely appressed; labial palpus upcurved, smooth-scaled, usually metallic iridescent, with segment 2 twice length of apical segment; antenna with long dorsal scales to near apex, producing thickened

Fig. 1. Tortyra slossonia (Fernald): a) ♂, Pahokee, Palm Beach Co., FL, 31 Mar 1975, J. B. Heppner (FSCA); b) ♀, Dreher Park, W. Palm Beach, Palm Beach Co., FL, 1 Apr 1975, J. B. Heppner (FSCA).
The forewing chorda is absent or vestigial in Tortyra, but present in many Tortyra and Saptha. Many Tortyra species appear the same in maculation, particularly among species spread over the West Indies and into Mexico. Certain identification requires genitalia dissection. The unusual bursa appendage, which normally is held within the anterior coils of the ductus bursae, is known only among Tortyra species in the family Choreutidae. The long ventral antennal setae of male Tortyra, and the reduced setae of females is a noticeable sex difference (this can be clearly seen in Fig. 1).

**Tortyra slossonia** (Fernald)

*Walsinghamia slossonia* Fernald, 1900:244.

**Diagnosis.** This species is distinguished from other Florida Tortyra by the red, occasionally even golden, iridescence of the forewings and their major bands, and the purple head scaling.

**Description.** Forewing length: 5.2–6.5mm.

- **Male** (Fig. 1).- **Head:** purple metallic-iridescent; labial palpus silver with fuscous apical segment, and white mesad; antenna purple with white band near black apex. **Thorax:** purple iridescent; patagia silver or golden; venter silver; legs silver, with fuscous and white bands on tarsal segments. **Forewing:** markings metallic-iridescent bronze-red to golden on a fuscous field of white-tipped scales, with the main markings a median vertical band bordered in black and a red-purple band on distal quarter of wing with about 5 linear black streaks basad; a black area near tornus and centrally in apical quarter of forewing; fringe iridescent silver red; hindwing dark fuscous; venter of both wings fuscous. **Abdomen:** golden iridescent on fuscous, with pale segmental bands; venter silver. **Male Genitalia** (Fig. 4): generic characters, with soci absent and tuba analis plates short (somewhat longer than anellus height); valva with dorsal margin bent towards medial apex, then rounded below apex ventrally; junta-anellus (Fig. 6) triangular; aedeagus (Fig. 4a) with series of small cornuti.

- **Female.**- Same as for male. **Female genitalia** (Fig. 8): generic characters, with papilla analis having two rows of lateral setae; apophyses subequal; ductus bursae with 3 coils near bursa; signum well developed.

**Types.**- Lectotype ♀: Biscayne Bay, [Dade Co.], Florida, [ca. 1899, A. T. Slosson], (USNM 77255). *Paralecotypes* (4♂): [same data], USNM (3) and LACM (1). Lectotype and paralecotypes by present designation.

**Distribution.** Additional specimens examined total 151, ranging on the east coast of Florida from Palm Beach Co. to the Florida Keys as far south as Windley Key, and on the west coast from Sarasota Co. to Monroe Co. The species occurs generally only near its hostplant, species of *Ficus* trees, in native hardwood hammocks of south Florida. There is one record for Gainesville, Alachua Co., but this evidently is either a transplanted individual, since no *Ficus* grows in nature in Alachua Co., or the specimen is mislabelled. The species probably occurs on Key West but no specimen record is known for this island.

Specimens are known from the northern Bahamas (Nassau).

**Flight Periods.** Generations are almost continuous in south Florida, with records for every month of the year. The 6 known Bahama specimens were collected in May and July.

**Hosts.**- *Ficus aurea* (Moraceae) [possibly other species of *Ficus* as well].
**Biology.**—*Tortyra slossonia* can be very common locally and will come to lights whenever collecting is done under or near a host tree, but otherwise adults are active only in bright sunshine. Larvae feed internally on branch leaf buds before the new leaf has opened. Pupation is within the excavated leaf bud.

**Remarks.**—The adults of *T. slossonia* are noticeably more red than the new species described below and generally are somewhat smaller. The type-species of the genus, *Tortyra spectabilis* Walker, shows some similarities to *T. slossonia*, both in maculation and in the genital characters, but *T. slossonia* is most related to *Tortyra ignita* (Zeller) from Cuba. Another new species from eastern Mexico also is very similar, but as in *T. ignita*, there are consistent small differences in the genitalia to distinguish these species, as for example, the shape of the anellus.

**Tortyra iocyaneus** Heppner, new sp.

**Diagnosis.**—A larger species than *T. slossonia*, with a noticeably more blue-green to violet coloration (Fig. 3). The head vertex of gray with white-tipped scales is distinctive. The male genitalia have the apical valval point directed ventrally instead of upwards.

**Description.**—Forewing length: 6.0-7.0mm.

Male (Fig. 3).—*Head*: shining fuscous scales with white-tips; labial palpus silvery laterally, with fuscous on apical segment and white mesally; antenna iridescent purple with white band near black apex. *Thorax*: same as head, with patagia silver iridescent; venter silver; legs silver with fuscous and white bands. *Forewing*: fuscous with white-tipped scales, with metallic iridescent blue-green to violet on basal quarter, as a large median vertical band bordered by black, and as an apical band having about 15 linear black streaks towards base of wing on apical third; a fuscous line on costal margin from basal third to apex; fringe iridescent silver to violet; venter fuscous with white on anal field. *Hindwing*: dark fuscous with pale white streak along cubital vein from base; fringe fuscous and white; venter fuscous with some white as subapical line. *Abdomen*: like thorax; venter white and silver. *Male genitalia* (Fig. 5): generic characters, with socii absent and tuba analis plates long and prominent (about 2.5x length of anellus); valva rectangular with rounded apex, with ventral protruded blunt point; juxta-anellus (Fig. 7) quadrate and indented towards base; aedeagus (Fig. 5a) with minute cornutus.

Female.—Same as for male. *Female genitalia* (Fig. 9): generic characters, with papilla analis having a single row of larger setae; apophyses with posterior pair twice as long as free ends of anterior pair; ductus bursae with 4 coils near bursa; signum moderate.


**Additional specimens** (1♀, 1♂).—*BAHAMAS.—Nassau, 1902 (1♂, 1♀), Carter (BMNH).
Fig. 4-5. Male Genitalia.—4. *Tortyra slossonia* (Fernald), Everglade, [Dade Co.], Florida (USNM 77093); 4a) aedeagus. 5. *Tortyra iocyaneus*, new sp., paratype, Islamorado, Monroe Co., Florida, 18 Jun 1974; J. B. Heppner (FSCA/JBH 181); 5a) aedeagus. [Fig. 4 and 4a by George Venable]
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Distribution.– In the United States T. iocyaneus is known only from the Florida Keys and southern Dade County. The species is also recorded from the northern Bahamas (Nassau).

Flight Periods.– Generations are almost continuous, with adults recorded for every month of the year except November, and the lack of that month probably represents inadequate collecting.

Hosts.– Unknown, but one or more Ficus sp. (Moraceae) are suspected.

Remarks.– This new species is very similar to Tortyra aurofasciana (Snellen) from St. Martin, and undescribed species from Puerto Rico and St. Vincent. The genitalia show consistent small differences, indicating that T. iocyaneus has been isolated just long enough from T. aurofasciana to become a separate species.

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REFERENCES


Fig. 8-9. Female genitalia. 8. *Tortyra slossonia* (Fernald), Siesta Key, Sarasota Co., Florida, 1 Nov 1958, C. P. Kimball (FSCA/JBH 171) [shown with bursa appendage outside of ductus bursae coils]. 9. *Tortyra iocyaneus*, new sp., Allotype, 2 mi N Tavernier, Monroe Co., 20 Jun 1973, J. B. Heppner (FSCA/JBH 599) [Fig. 8 by George Venable].