

# A NEW GENUS AND SPECIES OF MONCINI FROM JAMAICA, WEST INDIES (LEPIDOPTERA, HESPERIIDAE, HESPERIINAE)

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**Abstract** - A remarkable new genus and species of skipper butterfly is described from the Cockpit Country of west central Jamaica, West Indies. This new species, a member of the tribe Moncini, differs from all other genera in the tribe in its external morphology, being the only member of the tribe to lack prominent wing markings, save a narrow, pale-yellow, transverse hindwing band. Examination of the genitalia and a COI sequence places this new skipper close to continental species of *Vettius*, which possess substantially different external morphological characters. Features of the female genitalia of Moncini are discussed, and the elongated, sclerotized antrum found in this new taxon and apparent relatives is proposed as a potentially informative character for grouping related members of Moncini.

**Key words:** Butterfly, Cockpit Country, Cytochrome Oxidase Subunit I (COI), genitalia, morphology, skipper

Among Greater Antillean islands, the butterfly fauna of Jamaica has arguably been the most intensively studied, with a rich history of exploration, collecting and taxonomic research (e.g., Butler 1878, Möschler 1886, Kaye 1899, 1926, 1931, Bell 1931, Avinoff & Shoumatoff 1941, 1946, Avinoff 1944, Brown & Heineman 1972, Turner & Parnell 1985, Emmel *et al.* 1992, Johnson & Smith 1993, Rezbanyai-Reser 1998a,b, Garraway & Bailey 2005, Garraway *et al.* 2009, Turner *et al.* 2009). Despite the advanced state of our knowledge of the butterfly fauna of Jamaica, there remain several very poorly known taxa, known from few specimens and localities. A number of these poorly known species, as well as Jamaica's most famous butterfly, the Homerus Swallowtail (*Papilio homerus* Fabricius, 1793), are known mainly or uniquely from a region called the Cockpit Country (Murray 1954, Emmel & Garraway 1990, Turner 1992, Garraway & Bailey 1993, Garraway *et al.* 2008, Lehnert 2008).

The Cockpit Country (63,935 ha.) is an area of outstanding ecological importance located in the west central part of the island of Jamaica, within the parishes of St. Elizabeth, St. James and Trelawny. It is Jamaica's last wilderness and is the largest contiguous block of highland wet limestone forest on the island. The biodiversity of the area is of global significance, and includes seven forest reserves comprising around 29,000 ha., with elevations between 100–700 m. (Proctor 1986, Eyre 1995, Koenig *et al.* 2000). The Cockpit Country is recognized internationally for cockpit karst, which is characterized by dense formations of rounded peaks and steep sided, bowl-shaped depressions, created over the millennia by erosion and chemical dissolution, resulting in an extensive network of caves (Fincham 1997, Kueny & Day 1998). This region supplies the aquifers of five major rivers: Black River, Great River, Martha Brae, Montego River, and Hector's River (Day 1985). These rivers supply water to major population centers of St. Elizabeth, Trelawny and St. James.

The wider Cockpit Country Conservation Area is a vitally important habitat for many endemic and endangered animals,

including the butterflies *Papilio homerus*, *Eurytides marcellinus* (E. Doubleday, [1845]), *Doxocopa laura laura* (Hübner, [1823]), *Atlantea pantoni* (Kaye, 1906), *Phocides lincea perkinsi* (Kaye, 1931), *Grais stigmaticus juncta* Evans, 1953, and *Choranthus lilliae* E. Bell, 1931. There are more than 1500 species of plants recorded from the area, with more than 100 of these being endemic (Adams 1972, 1990, Proctor 1986), and 27 of Jamaica's 28 endemic birds can be found there, including less common species such as the endangered Jamaican Blackbird, 95% of the Black-billed Parrot population, and the Blue Mountain Vireo (Raffaele *et al.* 1998, Koenig 2008, Haynes-Sutton *et al.* 2009, Levy & Koenig 2009). The importance of the habitat is further confirmed by recent discoveries of new endemic species within the Cockpit Country Conservation Area, including two species of grasshopper (Perez-Gelabert 2001) and an undescribed dwarf boa constrictor (Wilson 2011). There is undoubtedly much more to discover in Jamaica's Cockpit Country. This fact became apparent to Vaughan Turland and Thomas Turner at about 10:25 hrs. on July 23, 2011, as they were surveying for



**Fig. 1.** Type locality for *Troyus turneri*, a partially shaded, overgrown trail through dense forest in the Cockpit Country Conservation Area, 6.5 km NW of Troy, ca. 550 m., Trelawny Parish, Jamaica.

butterflies in the Cockpit Country northwest of the town of Troy (Fig. 1). On this day, Turland encountered a small hesperiid that was immediately unfamiliar to him; a quick photo was taken of the live adult female (Fig. 2) before it was collected. Despite continued searches for additional specimens on multiple subsequent visits, no other individuals of this skipper were encountered until the following year, on July 25, 2012, when one male was found and collected by Turland. Detailed study of these specimens has shown that they represent a new genus and species, described below, apparently most closely related to mainland taxa in the tribe Moncini A. Warren, 2008. This is the first new species of butterfly described from Jamaica since 1995 (Johnson & Bálint 1995), and becomes the only endemic genus of butterfly known from the island.

### *Troyus* A. Warren and Turland, new genus

Type species: *Troyus turneri* A. Warren and Turland, 2012, new species, here designated.

**Description.** Palpi quadrate, third segment porrect, extending about 0.3 mm beyond scales of second segment. Antennae half (in female) to just over half (in male) length of costa; club slender and short, about 23-27% length of shaft, bent to constricted apiculus beyond thickest part; nudum black, with 13 segments, 3-4 segments on club, the remaining segments on apiculus; shaft black above, pale yellow checkered with black on venter, especially proximad; club black above, yellow on venter.

Forewing approximately half as wide as long, apex angled to dull point, no pale markings above or below; vein CuA2 arises from cell just distad of halfway between base and CuA1; origin of vein M2 located nearer to M3 than to M1; discal cell just over three times as long as wide at widest point. Hindwing termen fairly evenly rounded, though slightly lobate at tornus, longest at veins 1A+2A and CuA1 (both about 10.1 mm); origin CuA2 from cell much closer to CuA1 than base; origin CuA1 much closer to M3 than to CuA2; M2 not developed; discal cell just over four times as long as wide at widest point. Protibia with prominent epiphysis extending just distad of junction with tarsus; meso- and metatibia with longitudinal row of four spines on inner surface, mesotibia with one and metatibia with two pairs of spurs.

Male genitalia characterized by a quadrate tegumen (in dorsal view); slender uncus with deeply divided and slightly upcurved, lanceolate arms; a slender and deeply divided gnathos, with arms the same length as the uncus; long and relatively narrow valvae, with a straight dorsal edge of the costa-ampulla and an upcurved harpe; slender and straight aedeagus opening dorsad; two cornuti as (in situ) elongate anterior structure and short posterior structure.

Female genitalia characterized by a moderately long (about 0.9 mm) antrum, which forms a smooth, sclerotized, elongated tube, remainder of ductus bursae slightly curved dorsad from antrum, not sclerotized, about twice the length of antrum (about 1.8 mm), with vague, slender but slightly twisted, internal sclerotized process; sterigma broad with lamella postvaginalis shallowly indented centrally on caudal edge, lamella antevaginalis as elongate sclerotized plates laterad, rather bulbous proximad, produced to sharp points distad, with no central sclerotization.

**Etymology.** *Troyus* is named for the town of Troy in the Jamaican Parish of Trelawny; it is the nearest town to the region of the Cockpit Country where the types of *Troyus turneri* were collected.

**Diagnosis.** This genus is distinguished from all other genera of Moncini by the combination of the following characters: its small size (forewing length 11.4 mm in male, 13.5 mm in female), antennae of moderate length (just over half the length of the forewing costa) with slender clubs, relatively slender palpi with a porrect third segment extending beyond the scales of the second, and complete lack of pale wing markings, save a prominent, narrow, pale-yellow transverse band on the hindwing underside (coupled with a tiny yellow spot centered near the end of the discal cell on the male), vaguely represented on the upperside of the hindwing by suffused gray-brown scales.



Fig. 2. Allotype female of *Troyus turneri*, alive in habitat, just prior to collection on July 23, 2011.

### *Troyus turneri* A. Warren and Turland, new species (Figs. 3-6)

**Description. Male** (Figs. 3a, 3b, 4, 5) – forewing length = 11.4 mm (n=1, holotype); forewing produced to pointed apex, termen convex; hindwing convex, weakly lobate at tornus; small, indistinct, triangular patch of slightly modified scales at junction of cubitus and CuA2, along posterior vein of discal cell but not reaching origin of CuA1, and briefly along CuA2 (Fig. 4), composed of scales shorter and slightly paler than on remainder of wing but otherwise not distinguishable; dorsal forewing dark brown with subtle red-brown iridescence; otherwise unmarked (pale forewing tips are an artifact of scale loss at the time of capture); fringe gray-brown from mid-wing to tornus (missing near apex).

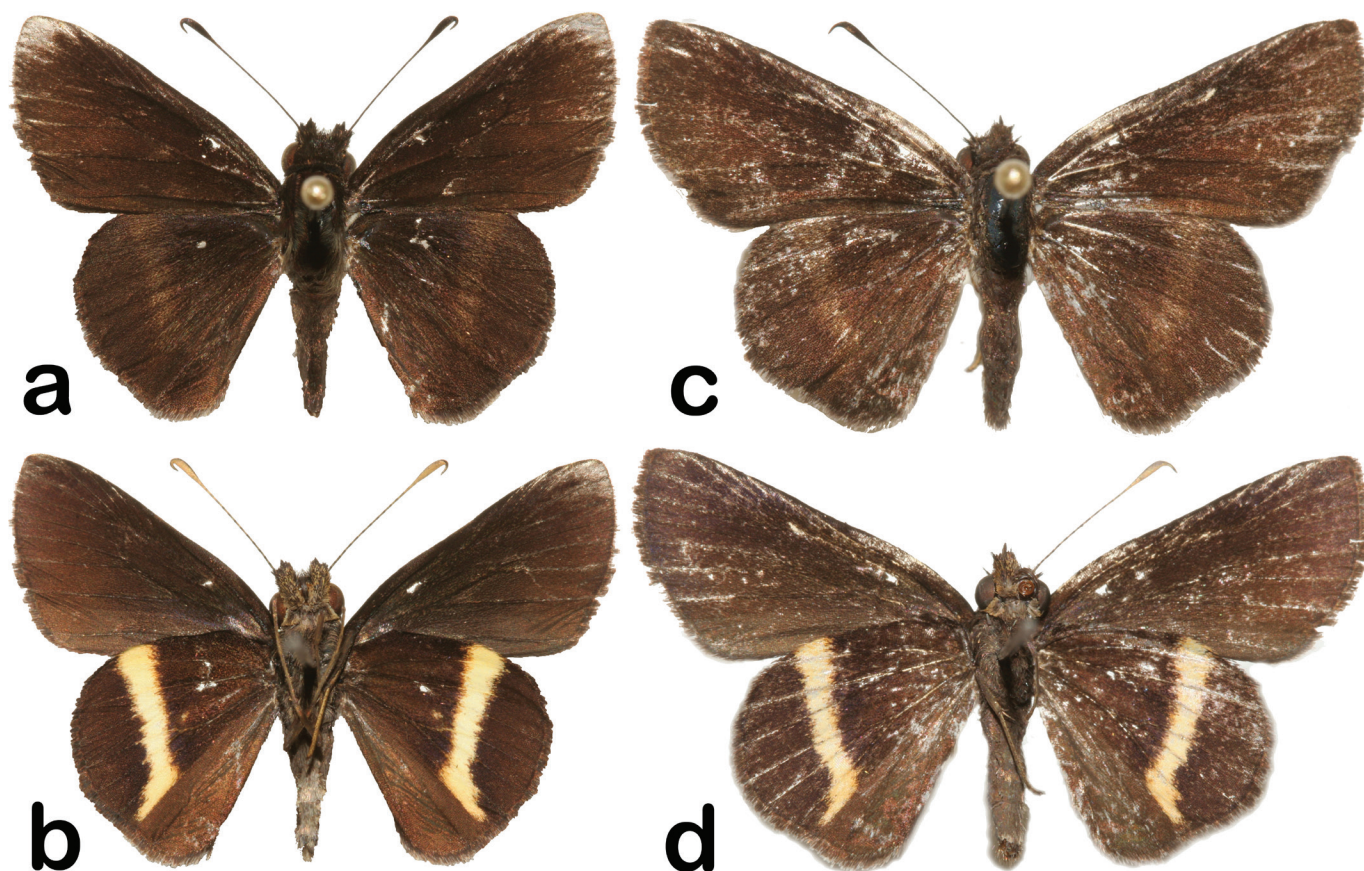
Dorsal hindwing dark brown, proximal 2/3 overscaled with long dark brown scales, nearly reaching apex along costa, and nearly reaching termen along vein 2A; faint suggestion of grayish, straight, transverse band (positioned as on ventral hindwing where band is prominent), about 1.2 mm in width, from costa near apex to just beyond CuA2, then diffusely flared towards margin; elements of this band most prominent in M2-M3 and M3-CuA1; fringe dark brown at apex, grading to gray-brown at tornus.

Ventral forewing dark brown, grading towards gray-brown near tornus; costa, apex and outer margin overscaled with purple iridescence; otherwise unmarked.

Ventral hindwing dark brown, somewhat paler in 1A+2A-3A, and lower half of CuA2-1A+2A, somewhat darker along border of pale transverse band, overscaled with subtle purple iridescence; prominent pale-yellow, straight, transverse band, about 1.3 mm in width, originating along costa near apex, just proximad of end of Rs, extending towards tornus until mid-CuA2-1A+2A, where it is flared towards margin, terminating about 0.6 mm from margin; borders of transverse band somewhat indistinct; scales along immediate border slightly darker tawny-yellow, and scales towards the center of band palest yellow; tiny yellow spot centered near distal end of discal cell.

Dorsal head dark brown, few orange-brown scales below antenna, above and beneath eye; palpi quadrate, dark brown on dorsum becoming mixed with orange-brown scales on sides and venter, third segment dark brown, relatively stout, porrect, extending about 0.3 mm beyond scales of second segment; antennae of moderate length, about 6.6 mm (58% of costa), black on dorsum, venter pale yellow checkered with black, especially proximad, club short, about 1.5 mm (23% of length of shaft), black on dorsum, venter golden-yellow, nudum black, 13 segments; dorsal thorax dark brown-black, entirely covered with dark brown scales; ventral thoracic scales gray-brown; legs gray-brown





**Fig. 3.** Type specimens of *Troyus turneri*: **3a** (dorsal) and **3b** (ventral), holotype male, full data in text, pale forewing tips are an artifact of scale loss at the time of capture; **3c** (dorsal) and **3d** (ventral), allotype female, full data in text, scale = 1.0 cm.

dorsad, mostly creamy ventrad, protibia smooth proximad, red-brown epiphysis of moderate length, extending just distad of junction with tarsus, tarsus with two longitudinal rows of short spines, mesotibia with a longitudinal row of four short spines on inner surface, one pair of spurs, outer 2/3 length of inner, tarsus with three longitudinal rows of short spines, metatibia with a longitudinal row of four short spines on inner surface, two pairs of spurs, outer 2/3 length of inner; dorsal and ventral abdomen gray-brown, palest ventrally, grading to pale gray at distal end below.

Genitalia (Fig. 5) – tegumen quadrate in dorsal view, slender in lateral view; uncus slender, slightly upcurved in lateral view, deeply divided, the arms lanceolate in dorsal view; gnathos slender, as long as uncus, slightly upturned caudad in lateral view, deeply divided in ventral view; arch formed by ventral arm of tegumen and dorsal arm of saccus slender, sharply bent ventrad of middle; cephalic projection of saccus long, slender, slightly downturned at evenly rounded cephalic end; valva long and relatively narrow, dorsal edge of costa-ampulla straight, harpe upcurved to narrow dorsally directed tooth, caudal end of harpe with broad upcurved tooth; inner surface of valve with shallow ridge along dorsal margin of ampulla-harpe interface; valvae symmetrical; juxta narrow in lateral view, concave distad, dorsal margin best developed, broad in dorsal view, distal margin as two distinct lobes; aedeagus slender and straight, caudal end slightly swollen and evenly rounded, opening dorsad; two cornuti as (*in situ*) elongate anterior structure and short posterior structure, both of which gradually become more heavily sclerotized caudad.

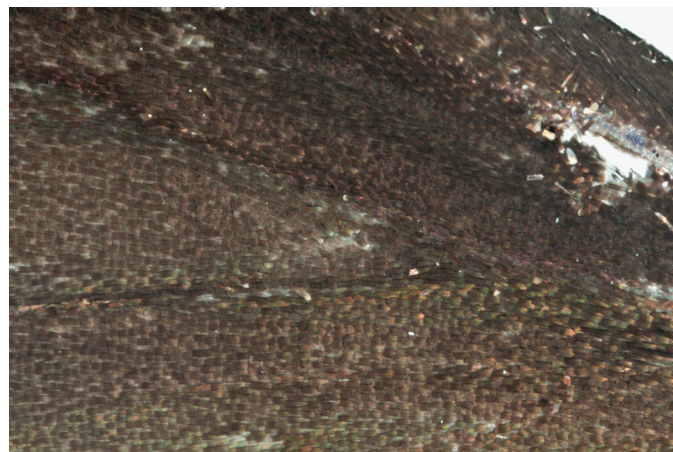
**Female** (Figs. 3c, 3d, 6) – forewing length = 13.5 mm ( $n=1$ , allotype); forewing more elongate than that of male, produced to pointed apex, termen convex; hindwing convex, weakly lobate at tornus; dorsal forewing dark brown with subtle red-brown iridescence; otherwise unmarked; fringe dark brown at apex, grading to gray-brown at tornus.

Dorsal hindwing dark brown, proximal 2/3 overscaled with long dark brown scales, nearly reaching apex along costa, and nearly reaching termen along vein 2A; faint suggestion of grayish, slightly convex, transverse band (positioned as on ventral hindwing), about 1.2 mm in width, from costa near apex to just beyond CuA2, then diffusely flared towards margin; elements of this band most prominent in M2-M3 and M3-CuA1; fringe dark brown at apex,

grading to gray-brown at tornus.

Ventral forewing dark brown, grading towards gray-brown near tornus; costa, apex and outer margin overscaled with purple iridescence; otherwise unmarked.

Ventral hindwing dark brown, somewhat paler in 1A+2A-3A, and lower half of CuA2-1A+2A, somewhat darker along border of pale transverse band, overscaled with subtle purple iridescence; prominent pale-yellow, slightly convex, transverse band, about 1.3 mm in width, originating along costa near apex, just proximad of end of Rs, extending towards tornus until mid-CuA2-1A+2A, where it is flared towards margin, terminating about 0.6 mm from margin; borders of transverse band somewhat indistinct; scales along immediate border slightly darker tawny-yellow, and scales towards the center of band palest yellow.



**Fig. 4.** Center of left forewing of *Troyus turneri* holotype male, showing indistinct, triangular patch of slightly modified scales at junction of cubitus and CuA2.

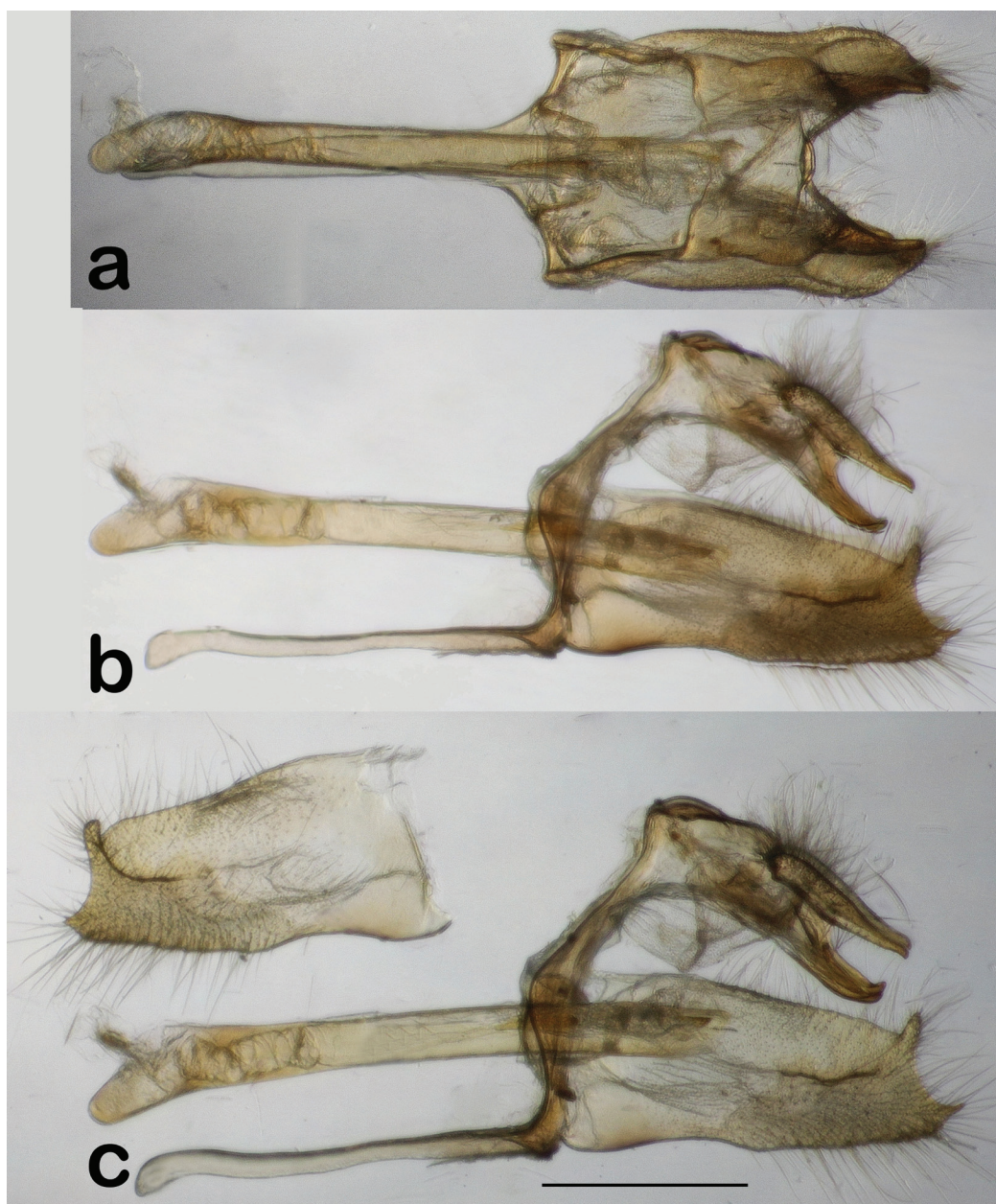


Dorsal head dark brown, few orange-brown scales below antenna, above and beneath eye; palpi quadrate, dark brown on dorsum becoming mixed with orange-brown scales on sides and venter, third segment dark brown, relatively stout, porrect, extending about 0.3 mm beyond scales of second segment; antennae of moderate length, about 6.7 mm (50% of costa), black on dorsum, venter pale-yellow checkered with black, especially proximad, club short, about 1.8 mm (27% of length of shaft), black on dorsum, venter yellow, nudum black, 13 segments; dorsal thorax brown-black, entirely covered with dark brown scales; ventral thoracic scales gray-brown; legs gray-brown dorsad, mostly creamy ventrad, protibia smooth proximad, red-brown epiphysis of moderate length, extending just distad of junction with tarsus, tarsus with two longitudinal rows of short spines, mesotibia with a longitudinal row of four short spines on the inner surface, one pair of spurs, outer 2/3 length of inner, tarsus with three longitudinal rows of short spines, metatibia with a longitudinal row of four short spines on the inner surface, two pairs of spurs, outer 2/3 length of inner; dorsal and ventral abdomen gray-brown.

Genitalia (Fig. 6) – sterigma broad, with heavily sclerotized lamella postvaginalis shallowly indented centrally on caudal edge, lamella antevaginalis as elongate sclerotized plates laterad, bulbous proximad, produced to sharp,

heavily sclerotized points distad, but no central sclerotization; ostium bursae with reduced sclerotization on all sides; antrum as a prominent, smooth, sclerotized, elongated tube (about 0.9 mm long); remainder of ductus bursae slightly curved dorsad from antrum, not sclerotized, heavily wrinkled, about twice the length of antrum (1.8 mm), with vague, slender but slightly twisted, internal sclerotized process; corpus bursae elongate, only slightly wrinkled, increasing in width cephalad to bulbous cephalic end, no signa.

**Types.** Holotype male with the following labels: white, printed: / JAMAICA: Trelawny: / Cockpit Country Conservation / Area, ca. 6.5 km NW Troy / ca. 550m, 25 July 2012 / Vaughan A. Turland /; white, printed and handprinted: / Genitalia Vial / # 12-03 / Andrew D. Warren /; white, printed: / DNA sample /; red, printed: HOLOTYPE / *Troyus turneri* / A. Warren & Turland /. A small gelatin capsule is affixed to the pin of the holotype, above the labels, which contains one leg, removed before spreading. The allotype female is from the same locality as the holotype male, collected by Vaughan A. Turland on 23 July, 2011, with additional labels indicating DNA sample ADW-00001, and Genitalia Vial # 11-11, Andrew D. Warren. A small gelatin capsule is affixed to the pin of the allotype, above the labels, with one antenna (broken while



**Fig. 5.** Male genitalia of *Troyus turneri* (holotype), Genitalia Vial # 12-03, Andrew D. Warren: **5a** (dorsal), **5b** (left lateral) and **5c** (left lateral with left valve removed, interior surface shown as inset upper left), scale = 1.0 mm.



Fig. 6. Female genitalia of *Troyus turneri* (allotype), Genitalia Vial #11-11, Andrew D. Warren: **6a** (ventral) and **6b** (right lateral), scale = 1.0 mm.

specimen was in transit), one palpus (detached during pinning), and two legs (meso- and metathoracic) removed before spreading (a foreleg was used for DNA extraction, also removed before spreading). The holotype and allotype are deposited at the McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, Florida, USA (MGCL).

**Type locality.** JAMAICA: Trelawny Parish; Cockpit Country Conservation Area, 6.5 km. northwest of Troy, at approximately 550 m. elevation. Access to the site is by narrow paved and unpaved road from the west end of the village of Troy, then on trails through cultivated and abandoned hillside plots in a generally northwest direction. The track winds along the edge of the karst cockpit formations with aspects alternating between drier exposed slopes and damp, heavily shaded valleys. The holotype male was found at rest on a leaf at the side of a partially overgrown trail, lined with shrubs and grasses, about 0.5 m. above ground-level. The allotype female was similarly found at rest on a leaf (Fig. 2), about 0.3 m. above the ground, along the same unmaintained trail, about 0.25 km. to the north of where the male was found, at a point where the trail was roughly five meters in width, overgrown with grasses, ferns and shrubs.

The largest forest trees in the area, often growing from the bottom of moist cockpits where soil and humus has accumulated, include *Swietenia* Jacq., *Calophyllum* L., *Cedrela* P. Browne, *Terminalia* L., *Nectandra* Rol. ex Rottb., *Psychotria* L., *Hernandia* L., *Ocotea* Aubl., *Drypetes* Vahl, and *Allophylus* L., sometimes with bromeliads and orchids. *Cecropia* Loebl. and *Bauhinia* L. are present alongside the trail in more open situations. At the edge of shaded areas

there are large aroids and tree ferns (*Cyathea* J. E. Smith). Many other shrubs and herbs including *Melostoma* L., *Drejerella* L., *Lobelia* L., *Malva* L., and *Pilea* Lindl. are found where there is filtered light. There are relatively few plants other than ferns where the forest provides heavy shade. In addition to the drier and wetter aspects provided by the cockpits, rainfall amounts range from 1900-3800 mm per year.

**Etymology.** This species is named in recognition of Dr. Thomas Turner (PhD at University of the West Indies, Mona, 1971), who has been an outstanding leader and exemplary contributor in the field and study of Jamaican Lepidoptera and their life histories for over fifty years. He has published several papers on the subject and was an important contributor to landmark publications including “Jamaica and its Butterflies” (Brown & Heineman 1972) and “The Butterflies of the West Indies and South Florida” (Smith *et al.* 1994). In 1979, Dr. Turner was honored by the Institute of Jamaica with the award of its prestigious Centenary Medal.

**Distribution and phenology.** *Troyus turneri* is currently known only from the holotype male and allotype female, both found in late July, within 400 meters of each other at the type locality.

**Diagnosis.** This species can immediately be distinguished from all other Caribbean hesperiids by its very small size, very dark overall coloration, and complete lack of pale wing markings, other than the pale-yellow transverse band on the ventral hindwing and the tiny yellow spot near the distal end of the hindwing cell on the male. Among known, continental, New World hesperiid taxa, no other shares the unique features of a completely unmarked wing pattern, save the ventral hindwing transverse band (and spot near cell end on male), somewhat “showing through” dorsally, although the dorsal hindwing scales above the ventral hindwing band are actually paler gray in color, compared to adjacent scales not over the band.

## DISCUSSION

Moncini is comprised of a seemingly endless number of genera of “little brown skippers” in the Neotropical region (see Warren *et al.* 2012). The tribe was defined on molecular characters (Warren *et al.* 2008), and to date, no morphological synapomorphy has been identified that unambiguously unites the myriad genera placed there. However, there are useful morphological characters, frequently in the genitalia, that may be used to define groups of genera within Moncini. For example, Warren *et al.* (2009) noted the unusually long saccus and aedeagus of males that seem to suggest a close relationship between *Mnasicles* Godman, 1901, *Remella* Hemming, 1939, *Apaustus* Hübner, [1819], *Callimormus* Scudder, 1872, and *Amblyscirtes* Scudder, 1872.

There also appear to be characters in the female genitalia of Moncini that are likely to be informative at higher taxonomic levels. While revising the genus *Vettius* Godman, 1901, with the late George Austin (in preparation), we noticed that the elongated, sclerotized antrum found in females of some *Vettius* species appears very similar to that found in a variety of other genera of Moncini (see below), suggesting a group of potentially monophyletic taxa within the tribe (also see Warren *et al.* 2009). Thus, it was a surprise to find that the female genitalia of *T. turneri* are quite similar to some *Vettius* species, since there was nothing in the male genitalia or external morphology that immediately suggested a close relationship between these genera (see below). *Troyus turneri* contrasts with all *Vettius* species in its complete lack of pale forewing and/or hindwing spots, smaller size (although the smallest species of *Vettius* approach it), less robust palpi, and shorter antennae with a more slender club.



As a further effort to determine the closest relatives of *T. turneri*, we sequenced 523 base-pairs of Cytochrome Oxidase Subunit I (COI) from the female allotype (Appendix 1), which correspond with the “barcode region”. Using a BLAST search (on 13-VI-2012), we identified members of *Vettius*, and *Cymaenes* Scudder, 1872, with between 92% and 95% similarity to the sequence of *T. turneri*, including *V. aurelius* (Plötz, 1882) (95%), *V. fantasos* (Cramer, 1780) (93-95%), *V. diversa maeon* (Mabille, 1891) (94-95%), *V. coryna conka* Evans, 1955 (92%) and *C. trebius* (Mabille, 1891) (92-93%). Slightly more distant taxa, with 91% similarity to the sequence of *T. turneri*, include species of *Remella*, *Parphorus* Godman, 1900, *Vehilius* Godman, 1900, *Saturnus* Evans, 1955, *Joanna* Evans, 1955, and *Naevolus* Hemming, 1939.

With this information in hand, we conducted a more intensive search for relatives of *T. turneri*. We examined male and female genitalia (dissections and/or drawings, mostly by S. R. Steinhauser and/or G. T. Austin at MGCL) of almost all genera of Moncini and Anthoptini A. Warren, 2009, as well as most species of *Vettius* and apparently related genera. The male genitalia of *T. turneri* do not show great similarities to any *Vettius* or *Cymaenes* species, with the valvae and uncus-gnathos appearing closest to various species of *Papias* Godman, 1900 (e.g., *P. subcostulata* (Herrich-Schäffer, 1870), *P. quigua* Evans, 1955), *Lerema* Scudder, 1872 (e.g., *L. liris* Evans, 1955) and *Morys* Godman, 1900 (e.g., *M. compta* (A. Butler, 1877)). The *Vettius* species with male genitalia appearing most similar to those of *T. turneri* is *V. marcus* (Fabricius, 1787), which differs by having an uneven dorsal edge of the costa-ampulla, a downturned caudal tip of the harpe, and much narrower space between the uncus and gnathos in lateral view. Thus, the male genitalia of *T. turneri* do not immediately suggest obvious affinities to any genus of Moncini.

Among *Vettius* females, the following were observed to have an elongate, sclerotized antrum, similar in shape and form to that seen in *T. turneri*: *V. diversa* (Herrich-Schäffer, 1869), *V. fantasos* (Cramer, 1780), *V. onaca* Evans, 1955, *V. marcus*, and *V. artona* (Hewitson, 1868). In females of *V. lafrenaye* (Latreille, [1824]) and *V. coryna conka* Evans, 1955, the antrum is sclerotized but not elongated. The antrum is not sclerotized in the remaining *Vettius* taxa examined: *V. lucretius* (Latreille, [1824]), *V. phyllus* (Cramer, 1777), *V. triangularis* (Hübner, [1831]), *V. richardi* (Weeks, 1906), *V. monacha* (Plötz, 1882), *V. jabesa* (A. Butler, 1870), *V. chagres* Nicolay, 1973, *V. ploetzii* (Capronnier, 1874), and *V. umbrata* (Erschoff, 1876). Of the *Vettius* with an elongate, sclerotized antrum, genitalia of *V. onaca*, *V. fantasos*, *V. marcus* and *V. diversa* were the closest in overall appearance to *T. turneri* (*V. aurelius* is also closely related to these species; it was considered a subspecies of *V. marcus* by Evans 1955), especially *V. onaca*, which shows similarities to *T. turneri* in the lamella postvaginalis, lamella antevaginalis, antrum, ductus bursae and corpus bursae (illustrations of *Vettius* genitalia will be presented elsewhere; images of *Vettius* adults provided by Warren *et al.* 2012). Despite this, there is nothing in the external appearance of these taxa, other than their similar wing shape, that would suggest a congeneric relationship. The only *Vettius* species with ventral hindwing markings somewhat approaching the pattern seen

on *T. turneri* is *V. ploetzii*. However, the transverse band on *V. ploetzii* is very broad (often occupying half or more of the ventral hindwing), differs in details of its positioning, and *V. ploetzii* is a much larger butterfly (forewing length usually 17-19 mm), with very prominent forewing pale macules, larger, more obviously quadrate palpi, and longer antennae with better-developed clubs. In addition, as noted above, females of *V. ploetzii* lack the elongate, sclerotized antrum found in *T. turneri* and some other *Vettius*.

Additional genera that contain members possessing the elongate, sclerotized antrum, similar to that seen in *T. turneri*, mainly include (all in Moncini): *Remella* (though antrum is broader and shorter), *Amblyscirtes* (antrum generally longer), *Mnasicles* (antrum slightly longer), *Callimormus* (antrum often slightly longer), *Parphorus* (antrum slightly longer and ductus bursae more bent), *Monca* Evans, 1955, *Cymaenes* (some taxa very similar, though antrum usually longer), *Vehilius* (antrum usually slightly longer), *Molla* Evans, 1955, *Papias* (ductus bursae usually more bent), *Cobalopsis* Godman, 1900 (ductus bursae usually more bent), *Lerema*, and *Morys*. There is considerable variation in the nature of the elongated, sclerotized antrum across these genera, but possibly not enough to render the feature non-homologous. Given that the COI data also suggest relationships between *T. turneri* and some of these genera, it seems probable that the elongated, sclerotized antrum is indeed a useful character for identifying relationships among genera of Moncini.

The initial search for a potential congener of *T. turneri* began with *Mnestheus* Godman, 1901, due to their similar overall sizes, wing shapes, general very dark coloration, and fancy banding patterns on the ventral hindwing, even though both *Mnestheus* species have pale forewing spots. Genitalic examination of *M. damma* Evans, 1955, and *M. ittona* (A. Butler, 1870), however, suggested that the genera are not likely to be very close relatives. It was unexpected that the search for genitalic similarities to *T. turneri* would lead to *Vettius* taxa (females, at least), which appear so different in external characters. Given that the female genitalia and COI data appear to place *T. turneri* with a group of otherwise morphologically dissimilar *Vettius* taxa, we feel a new genus for this taxon is justified. It is certain that *Troyus* is closely related to some *Vettius* species, as well as to species of *Cymaenes* and other genera of Moncini with an elongate, sclerotized antrum, but it shares no prominent external features with any of them. Until further evidence is found to suggest otherwise, *Troyus* may be added to the short list of endemic, monotypic Caribbean butterfly genera, including *Pseudochrysops* Nabokov, 1945, *Dianesia* Harvey & Clench, 1980, *Archimestra* Munroe, 1949, *Parachoranthus* L. Miller, 1965, *Asbolis* Mabille, 1904 (also shared with south Florida), and *Holguinia* Evans, 1955. *Troyus* may also be added to the somewhat longer list of polytypic genera endemic to the Caribbean region, with *Lucinia* Hübner, [1823] (two species), *Atlantea* Higgins, 1959 (four species), *Antillea* Higgins, 1959 (two species), *Calisto* Hübner, [1823] (many species), *Burca* E. Bell & W. Comstock, 1948 (five species), *Ephyriades* Hübner, [1819] (3 species), *Choranthus* Scudder, 1872 (9 species) and *Pyrrhocalles* Mabille, 1904 (2 species).

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**Appendix 1**, 523 base-pairs of Cytochrome Oxidase Subunit I (COI) from *Troyus turneri* allotype female.

CAATTATAATTGGAGGATTTGGAAATTGATTAGT-  
GCCATTAATATTAGGGGCTCCTGATATAG-  
CATTCCCACGAATAAATAATATAAGATTTT-  
GAATATTACCTCCTTCTTTAATACTTTTA-  
ATTTCAAGAAGAATCGTAGAAAATGGGGCAGG-  
TACAGGTTGAACAGTTTATCCCCCCTTTTCATC-  
TAATATTGCCCCACCAAGGAGCTTCTGTT-  
GATTTAGCAATTTTCTCTCTTCATTTAGCTG-  
GAATTTCTTCAATTTTAGGAGCAATTAATTTTAT-  
TACTACAATTATTAATATACGAATTAGAAATTTAT-  
CATTTGACCAAATACCTTTATTTGTTTGATCAGTGGG-  
TATTACAGCCTTATTATTACTTTTATCATTACCC-  
GTATTAGCAGGAGCCATTACCATACTTTTAACT-  
GACCGAAACCTAAATACATCTTTTTTTTGATCCT-  
GCTGGAGGAGGAGATCCAATTTTATACCAACATT-  
TATTTTGATTTTTTGATGCAAAAAATAAAATAAAAAA