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The butterflies (Lepidoptera, Papilionoidea) of Tobago, West Indies:  
An updated and annotated checklist

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## The butterflies (Lepidoptera, Papilionoidea) of Tobago, West Indies: An updated and annotated checklist

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**Abstract.** Six annotated lists are presented: A, a checklist of the butterflies (Lepidoptera, Papilionoidea) of Tobago (150 species); B, species for which there are no records in the last 80 years (49 species); C, species needing confirmation from Tobago (5 species); D, species not accepted from Tobago (12 species); E, species which are likely to occur in Tobago, but have not been recorded (6 species); and F, species and subspecies recorded from Tobago, but not from Trinidad (2 species and 2 subspecies). Remarkably, 33% of the 150 recorded species have not been reported in the last 80 years. While it is possible that some of these are not resident or have become extinct, it seems more likely that most have simply not been found in the last 80 years. The butterfly fauna of Tobago merits further study; year-round collecting in different habitats and areas, using a variety of techniques, will surely fill in many of the apparent gaps in our knowledge. *Ouleus fridericus sheldoni* **ssp. nov.** (Hesperiidae, Pyrginae) is described from Tobago, with illustrations of adults and male genitalia, and is compared to *O. fridericus sinepunctis* (Kaye) from Trinidad. *Danaus plexippus tobagi* A.H. Clark, 1941 is a **syn. nov.** of *D. plexippus nigrippus* (Haensch, 1909) (Nymphalidae, Danainae).

**Key Words.** Biogeography, Lesser Antilles, *Ouleus fridericus sheldoni*.

**Resumen.** Se presentan seis listas anotadas: A, una lista de mariposas de Tobago (150 especies); B, especies para las cuales no hay registros en los últimos 80 años (49 especies); C, especies de Tobago que necesitan confirmación (5 especies); D, especies de Tobago no aceptadas (12 especies); E, especies que probablemente ocurran en Tobago pero sin registros (6 especies); and F, especies y subespecies con registros de Tobago, pero no de Trinidad (2 especies and 2 subespecies). Es destacable que el 33% de las 150 especies registradas no han sido identificadas en los últimos 80 años. Aunque es posible que algunas de esas especies no sean residentes o que se hayan extinguido, parece más posible que simplemente no se hayan encontrado en los últimos 80 años. La fauna de mariposas de Tobago merece un estudio más profundo; a lo largo del año en distintos hábitats y áreas y usando diversas técnicas se conseguirán resolver muchas de las aparentes lagunas de conocimiento. Se describe *Ouleus fridericus sheldoni* **ssp. nov.** (Hesperiidae, Pyrginae) de Tobago, ilustrando adultos y genitales masculinos, y se compara con *O. fridericus sinepunctis* (Kaye) de Trinidad. *Danaus plexippus tobagi* A.H. Clark, 1941 es un **syn. nov.** de *D. plexippus nigrippus* (Haensch, 1909) (Nymphalidae, Danainae).

**Palabras Clave.** Biogeografía, Antillas Menores, *Ouleus fridericus sheldoni*

### Introduction

Butterflies are a flagship group for the study of insects and their diversity, and are well documented for most parts of the world. Remarkably, the butterflies of Tobago are poorly documented, and nothing substantial has been published on them for nearly 80 years. Compare this with the butterflies of the West Indies documented by two books (Riley 1975, Smith et al. 1994) and neighbouring Trinidad documented by a monograph (Kaye 1921) and field guide (Barcant 1970). This paper provides an updated checklist with new records and summarises where some of the gaps and uncertainties lie.

Tobago lies 34 km to the northeast of Trinidad, which itself lies 20 km from the eastern extremity of the Paria Peninsula to the northwest, and 14 km from the coast of Venezuela to the southwest. Hence, just as Trinidad's fauna is represented by a subset of the mainland fauna, Tobago can be expected to host a smaller subset of the fauna of Trinidad. The island of Grenada is the nearest of the Lesser Antilles, 132 km to the northwest, and a portion of the Tobago fauna can be expected to be in common with Grenada, either having spread north from mainland South America or having spread south through the Antilles.

**History of butterfly collecting in Tobago.** Butterflies were one of the first insect groups to be documented from Tobago. The collectors, their publications, and the deposition of their material are summarised below.

Admiral **Edmund George Bourke** (1843–1924) visited Trinidad in April–May 1902 during the course of his duties in the Royal Navy, and made a collection of butterflies. He also visited Tobago and made a small collection of 18 species; the date for this is missing in his collection, but it seems likely it was immediately before, after or during his visit to Trinidad. His collection from around the world is preserved intact in OMNH.

**George Blundell Longstaff** (1849–1921) visited Tobago 3–10 April 1907, spending five days collecting around Scarborough and three at Cocoa Wattie Estate near the centre of the island, and recorded 28 species (Longstaff 1908, 1912). Longstaff's collection is in OMNH.

**Sir Norman Lamont** (1869–1949) was a collector of Trinidad butterflies from around 1913, while **Sir Gilbert Thomas Carter** (1848–1927) was the Administrator of the Government of the Colony of Trinidad and Tobago from 1907–1910. Together, they spent 14–24 August 1917 collecting butterflies in Tobago and Lamont (1917) records 28 species, of which 16 are additions to Longstaff's list. Sir Norman Lamont's collection is mostly split between the University of the West Indies (St. Augustine) (UWIZM) and the National Museums of Scotland, Edinburgh (formerly Royal Scottish Museum, Edinburgh, NMSE). However, there are no Tobago specimens in UWIZM, and amongst the NMSE Lycaenidae and Hesperidae which I have examined, I found just one lycaenid. I do not know if any of Sir Gilbert Carter's Tobago material has survived, although some of his specimens from the Bahamas are in the NHMUK, and at least one Trinidad specimen is in ABCT.

**William James Kaye** (1875–1967), the principal documenter of Trinidad's Lepidoptera (Kaye 1921, Kaye and Lamont 1927), spent 18 January to 4 February 1926 in Tobago, mainly at Bacelot near Scarborough, and collected 34 species. His collection of butterflies went to the Allyn Museum of Entomology, Florida, and is now in the McGuire Center for Lepidoptera and Biodiversity (MGCL); any surviving Tobago material should be there.

**Arthur Hall** (1873–1952) stayed at Speyside from 6–16 February 1932 and obtained 55 species. His unpublished journals are held at the Booth Museum, Brighton, UK (BMB) and include summary information on the frequency with which species were seen and captured on this trip. His collection is split between the Natural History Museum, London (NHMUK), which holds most of his Hesperidae and Lycaenidae, and the BMB.

**William George Sheldon** (1859–1943) first visited Tobago 17 December 1935 to 17 January 1936, and staying at Speyside collected 72 different species. He compiled his records, the published records, the records of Kaye and Hall, and some records of a local collector, **Frank d'Abadie** (a Roxborough resident) to produce a list of 101 species (Sheldon 1936). On a subsequent visit, Sheldon spent December 1936 at Speyside and January 1937 at Scarborough. His new records, together with additional material from d'Abadie, resulted in 23 species added to the total (Sheldon 1938). Later, Sheldon (1949) contributed a consolidated list of 124 species to a book on Tobago by Commander C.E.R. Alford. Sheldon's Tobago material, including some of d'Abadie's specimens, is now in the NHMUK.

Captain **Arthur Knyvett Totton** (1892–1972) was a coelenterate specialist at the NHMUK. His rank is from his army service in World War 1, and his specimens are labelled 'Capt. A.K. Totton'. Totton visited the West Indies on HMS Rodney in 1932, and collected some butterflies on Tobago during this expedition (Robson 1973).

**Malcolm Gerard Barcant** (1913–1986) included details of the butterflies of Tobago in his book on the *Butterflies of Trinidad and Tobago* (Barcant 1970) based upon Sheldon's (1949) list. Comparing Barcant's list which 'has been accumulated from all available sources up to 1965' (Barcant 1970, p. 134) with Sheldon's list, two species have been added and three omitted. Barcant (1970) makes no reference to collecting in Tobago himself, but a subsequent publication (Barcant 1982) shows that he collected specimens at King's Bay '8.11.1969'. The bulk of Barcant's collection now forms the Angostura-Barcant collection at Laventille, Trinidad (ABCT).

In recent years, there has probably been occasional collecting in Tobago, e.g. Barcant (1982) lists specimens collected by **Thomas Chadbourne Emmel** (1941–) of Florida in 1969 (at that time in the T.C. Emmel private collection), and **Raymond Brush** records a few captures now in the American Museum of Natural History, New York (Brush 1960). **Baron Charles George Maurice deWorms**

(1903–1979) visited in May 1968, but did not name any captures in his account (Worms 1969). Doubtless there are others whose efforts have gone unrecorded.

**L.F. Wise** made a collection of about 30 species in 1977, which is now housed in the Cole Museum of Zoology, University of Reading, UK (CMZ), and includes one new record.

I made only limited visits to Tobago while resident in Trinidad 1978–1982, and collected on odd days in June 1981 and January and September 1982 at Crown Point, June 1981 on the Roxborough–Bloody Bay Road, and June 1982 at Speyside to Charlotteville. Altogether, I obtained 55 species. Some years ago I updated the Tobago Hesperiidae list (Cock 1982b) based upon my own collecting and the catalogue of Evans (1951, 1952, 1953, 1955), which summarised the collection of the NHMUK. My material is mostly in my own collection (MJWC), although some is in the CABI collection incorporated into UWIZM.

**Leigh Plester** of Finland visited Tobago in May 1990, and subsequently published a travelogue with observations on butterflies (Plester 1994). More recently, **Jason P.W. Hall** collected riodinids and some other butterflies during a visit in 2005 (documented here and in a planned checklist of Trinidad and Tobago Riodinidae (Cock and Hall in prep.)). **John Morrall** has made a dozen visits since 1999, and has collected 74 species in Tobago, which are in his private collection (JMO); for some of these I have examined images, others are based on his unpublished identifications (J. Morrall pers. comm.).

The late **Jeffrey Stuart Ingraham** (1956–2013) was resident in Tobago for some years before his death, and made a collection of larger moths and insects, including some butterflies, mostly collected at light at his residence above Englishman's Bay (Fig. 1; Donahue 2013). **Matt Kelly** made a photographic record of this collection in 2011, and gave a two-CD record to me and UWIZM, amongst others. Part of Ingraham's collection was pinned and had suffered significant damage from psocids, and part was unpinned and kept in a freezer. The material was unlabelled, but the approximate period of collecting and the fact that all material was collected at Ingraham's residence was established in correspondence. At least some of the material left in Tobago has been transferred to UWIZM, but unpinned material is lost and any material from Tobago in the USA will end up elsewhere. The records which I include here are my identifications made from Kelly's photographs and referred to using his numbering, e.g. '[M. Kelly photo 10961–2, 11901–3]' indicates the images with those numbers on the aforementioned CDs. Matt Kelly also sent me images of some of the insects he observed in Tobago (e.g. Fig. 1).

The Trinidad and Tobago Field Naturalists' Club carried out a 'bioblitz' at Charlotteville, 24 Oct 2015 (Sookdeo 2015). **Kris Sookdeo** sent images of butterflies and moths seen, including one new island record included here (Fig. 1).

Thus, apart from the efforts of Frank d'Abadie (who alone caught some of the most striking species), butterfly collecting has been restricted to less than six 'collector months' by visitors to the island, many of whom came in the dry season, December to February. Noting that my modest collecting has yielded several new island records, I anticipate that there are still more to be found by collecting in forested areas in the wet season, particularly amongst the Riodinidae, Lycaenidae and Hesperiidae.

## Materials and Methods

This checklist covers just the main island of Tobago. The butterflies of Little Tobago and the smaller offshore islands have not been documented, apart from limited observations from Little Tobago (Guppy 1933; Barcant 1982). The sequence of families follows van Nieukerken et al. (2011). Infra-tribe groups are not used.

The following lists are presented:

List A. Checklist of the butterflies of Tobago (150 species)

List B. Species in List A for which there are no recent records (49 species)

List C. Species needing confirmation from Tobago (5 species)

List D. Species not accepted from Tobago (12 species)

List E. Species that might occur in Tobago, but have not been recorded (6 species).

List F. Species and subspecies recorded from Tobago, but not from Trinidad (2 species and 2 subspecies)

In List A, each species entry is structured as follows:

1. The current accepted name for that species and subspecies where used. The author and year of publication for each name is included, in parentheses where the name was originally described in a different genus. Although not required for a trinomial, the authorship of the species name is included as there will be occasions when users of the list will need only the species level name.

2. Indented below this are entries for any other names or combinations for this species that have appeared in the literature and refer explicitly to its presence in Tobago. These do not include generalised statements, e.g. that a particular species occurs through the Caribbean, or throughout the Neotropical Region. I have included taxonomic papers where Tobago is included in material examined, although these are rare. I have doubtless missed some of these, but hopefully I have located and referred to all those papers dealing with Tobago specifically, or including information on biology and ecology.

3. This may be followed by a section explaining the basis of my identification in the case of a new island record, and any comments about material examined, whether this is a new island record, etc. If I know of no records since Sheldon's lists in the 1930s (Sheldon 1936, 1938, 1949), I indicate this.

4. Next there is a listing of the material that I have seen. This is omitted in the case of common and well-documented butterflies, as I have not systematically extracted this data from the major museums. However, the information is included where there is doubt about the identity.

5. The format for the listing of material examined is as follows. Specimens are listed by locality, which are arranged alphabetically, with material simply labelled Tobago listed last. The locality may be followed by capture method, e.g. at light, and then a colon, after which the number and, if known, the sex of material seen (a ? is used to indicate uncertainty as to the sex of specimens listed). This may be followed by a comment in brackets on the condition of the material, e.g. (abdomen missing). Next the date of capture (if recorded) is given, followed by the collector's name in brackets; where the record is based on a photograph alone this is indicated. Finally, in square brackets, the location of the specimen is given, followed by any comment on identifications associated with the specimen, or how the specimen is curated if it differs from my identification; the inclusion of 'photo' within the square brackets indicates that I have only examined a photograph of the specimen. Comments on curation in collections refers to when I examined the collection, which may be up to 20 years ago and may no longer reflect the current curation. Nevertheless, this information may throw light on names used in the literature.

The following morphological abbreviations are used: UPF (upper side of the forewing), UPH (upper side of the hindwing), UPS (upper side), UNS (underside), UNH (underside of the hindwing). The museum and collection abbreviations used are as follows:

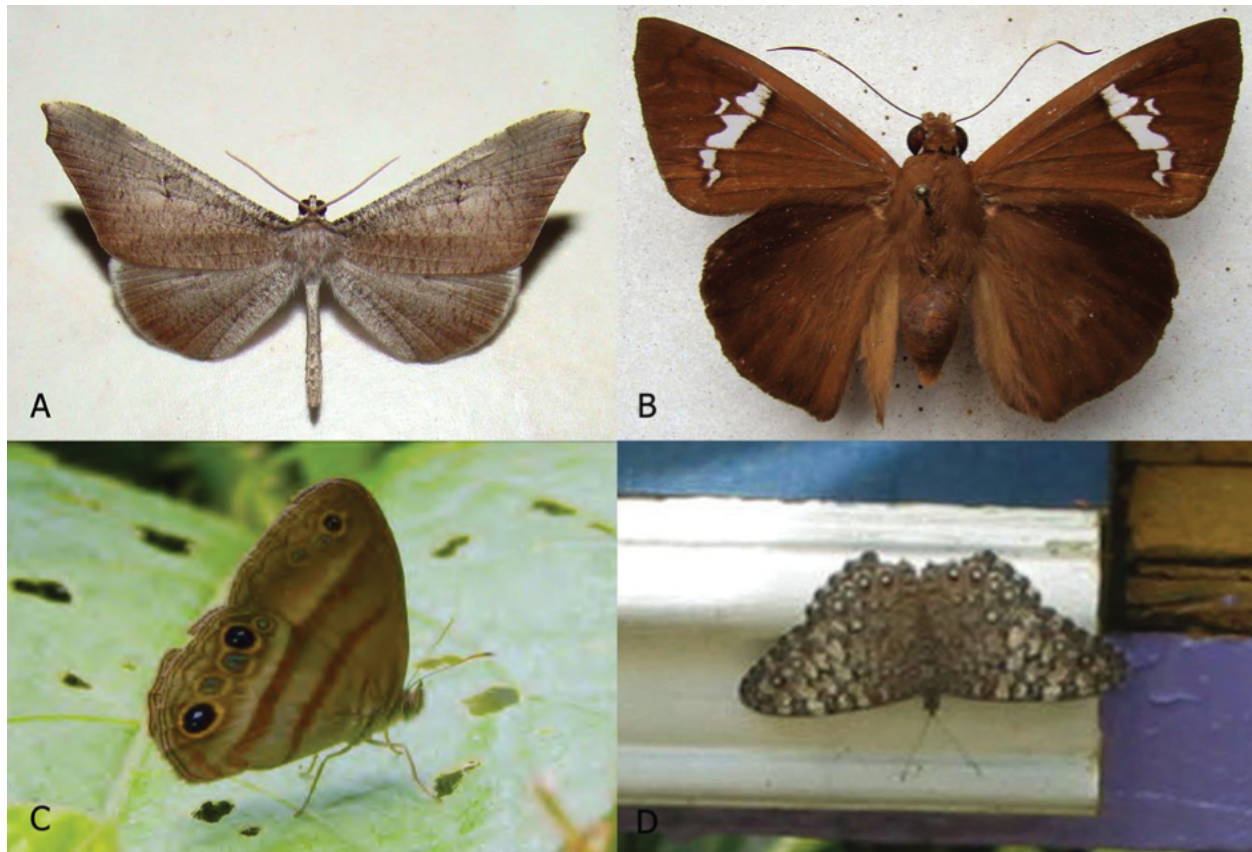
AME:	Allyn Museum of Entomology; now part of the MGCL.
ABCT:	Angostura-Barcant Butterfly Collection, Laventille, Trinidad (Barcant 1970; <a href="https://www.facebook.com/AngosturaMuseumAndBarcantButterflyCollection">https://www.facebook.com/AngosturaMuseumAndBarcantButterflyCollection</a> ).
BMB:	Booth Museum of Natural History, Brighton, UK ( <a href="http://brightonmuseums.org.uk/booth/">http://brightonmuseums.org.uk/booth/</a> ).
NHMUK:	The Natural History Museum, London, UK.
CMZ:	Cole Museum of Zoology, University of Reading, UK ( <a href="http://www.reading.ac.uk/colemuseum/">http://www.reading.ac.uk/colemuseum/</a> ); Kelly (2014) gives an account of the museum and includes an image with two species from Tobago on p. 105.
OMNH:	Hope Entomological Collections of the Oxford University Museum, Oxford, UK.
JMO:	The private collection of John Morrall, UK.
MGCL:	McGuire Center for Lepidoptera and Biodiversity, University of Florida, Florida, USA.
MJWC:	The private collection of Matthew J.W. Cock, UK.
NMSE:	National Museums of Scotland, Edinburgh, UK.
UWIZM:	University of the West Indies Zoology Museum, St. Augustine, Trinidad and Tobago ( <a href="http://sta.uwi.edu/fst/lifesciences/zoology.asp">http://sta.uwi.edu/fst/lifesciences/zoology.asp</a> ).

## List A. Checklist of the butterflies of Tobago

### Superfamily: Papilionoidea

#### Family: Papilionidae

Nomenclature follows Cock (2014a), which is based on Lamas (2004a).



**Fig. 1.** Voucher images for new records of Tobago butterflies. **A**, *Macrosoma rubedinaria*, Englishman's Bay, at light, 23 Mar 2014 (M. Kelly photo). **B**, ♀ *Bungalotis astylos*, Englishman's Bay, late 2010–early 2011 (J. Ingraham) (M. Kelly photo). **C**, *Cissia palladia*, Charlotteville, 24 Oct 2015 (K. Sookdeo photo). **D**, *Hamadryas februa ferentina*, Arnos Vale Rd., near Plymouth, 27–28 Jul 2002 (M. Connelly-Lynn photo).

### Subfamily: Papilioninae

#### Tribe: Troidini

*Battus polydamas polydamas* (Linnaeus, 1758)

*Papilio polydamas* (Linnaeus): Lamont (1917), Sheldon (1936, 1949)

*Battus polydamas* (Linnaeus): Barcant (1970, no. 146), Plester (1994)

It has been suggested that the subspecies in Tobago is *B. p. grenadensis* Hall, 1930, which was described from neighbouring Grenada. However, although material from Tobago may have more pronounced pale yellow bands on the upper surface, the red spots on the hindwing match those of the Trinidad population of the nominate subspecies and are significantly reduced compared to the type of *B. p. grenadensis* shown by Warren et al. (2016).

Englishman's Bay: ♂ late 2010–early 2011 (J. Ingraham) [M. Kelly photo 10961–2, 11901–3]; Scarborough - Speyside Col: ♂ 15 May 1982 (M.J.W. Cock) [MJWC]; Speyside: ♂ 16 May 1982 (M.J.W. Cock) [MJWC]

#### Tribe: Papilionini

*Heracles androgeus androgeus* (Cramer, 1775)

*Papilio androgeus* Cramer: Sheldon (1936, 1949), Barcant (1970, no. 152)

Sheldon's (1938, 1949) inclusion of this species was based on a single specimen seen in a local collection (F. d'Abadie). I am not aware of any subsequent confirmation of this species from Tobago.

### Family: Hedyliidae

Nomenclature follows Scoble (1990) and Cock (2014b).

*Macrosoma rubedinaria* (Walker, 1862)

A new island record based on photographs.

Englishman's Bay, at light: 23 Mar 2014 (M. Kelly photo) (Fig. 1A)

**Family: Hesperidae**

Nomenclature follows Cock (2014b), which is based on Mielke (2004).

**Subfamily: Eudaminae**

*Phanus marshalli* (Kirby, 1880)

*Phanes marshallii* [sic] (Kirby): Sheldon (1938, 1949)

*Phanus marshallii* [sic] (Kirby): Cock (1982b, no. 14), Cock (1984b)

*Phanus marshalli* (Kirby): Barcant (1970, no. 438)

Sheldon (1938) lists his own capture near Speyside. The specimen, a male, is in the NHMUK (Cock 1984b), but was overlooked in Evans' (1952) catalogue amongst Trinidad material.

Tobago: ♂ (W.G. Sheldon) [NHMUK]

*Proteides mercurius mercurius* (Fabricius, 1787)

*Proteides mercurius mercurius* (Fabricius): Evans (1952), Cock (1982b, no. 20), Cock (1986), Cock (2002)

I have seen no recent specimens. Cock (1986) discusses why Evans' (1952) record of *E. mercurius angasi* (Godman and Salvin) should not be accepted (List D).

Tobago: ♂ (W.G. Sheldon) [NHMUK]

*Chioides catillus catillus* (Cramer, 1779)

*Eudamus catillus* (Cramer): Longstaff (1908, 1912), Sheldon (1936, 1949), Barcant (1970, no. 388)

*Chioides catillus catillus* (Cramer): Evans (1952), Cock (1982b, no. 26), Cock (1986)

A common species.

*Typhedanus undulatus* (Hewitson, 1867)

*Urbanus undulatus* (Hewitson): Sheldon (1938, 1949)

*Eudamus undulatus* Hewitson: Barcant (1970, no. 395)

*Typhedanus undulatus* (Hewitson): Cock (1982b, no. 30), Cock (1986)

Sheldon (1938) includes a record from Scarborough, but this specimen is not amongst his material in the NHMUK.

Crown Point: ♂ 12 Sep 1982 (M.J.W. Cock) [MJWC]

*Polythrix octomaculata* (Sepp, [1844])

*Eudamus octomaculata* (Sepp): Sheldon (1936, 1949), Barcant (1970, p. 135)

*Polythrix octomaculata octomaculata* (Sepp): Evans (1952), Cock (1982b, no. 31), Cock (1986)

I have seen no recent specimens.

Roxborough: ♀ (F. d'A[abadie]) [NHMUK]; Tobago: ♀ (W.G. Sheldon) [NHMUK]

*Urbanus proteus proteus* (Linnaeus, 1758)

*Eudamus proteus* (Linnaeus): Lamont (1917), Sheldon (1936, 1949); Barcant (1970, no. 386)

*Urbanus proteus proteus* (Linnaeus): Evans (1952), Cock (1982b, No. 39), Cock (1986)

A common species.

*Urbanus belli* (Hayward, 1935)

*Urbanus viterboana alva* Evans: Evans (1952), Cock (1982b, no. 40) [synonym]

*Urbanus belli* (Hayward): Cock (1982b, p. 47), Cock (1986)

Following Mielke (2004), this species appears in Cock (2014b) as *Urbanus belli* (Hayward), but it is clear that the name is being applied to more than one species (Janzen et al. 2011; Cock 2016). It is doubtful that *U. belli*, described from Argentina (Mielke 2004), will prove to be the correct name for the Asteraceae-feeding species found in Trinidad and Tobago, which may prove to be *U. viterboana alva*



Evans, 1952 (currently a synonym of *U. belli* described from Mexico) or an undescribed species. I have seen no recent specimens from Tobago.

Tobago: ♂ Feb 1932 (A. Hall) [NHMUK]

*Urbanus esmeraldus* (Butler, 1877)

*Urbanus esmeraldus* (Butler): Evans (1952), Cock (1982b, no. 41)

I have seen no recent specimens.

Tobago: ♂ (W.G. Sheldon) [NHMUK]

*Urbanus dorantes dorantes* (Stoll, 1790)

*Eudamus aminias* (Hewitson): Sheldon (1936, 1949), Barcant (1970, p. 135) [incorrectly listed as a Cramer species; misidentification]

*Urbanus dorantes* (Stoll): Sheldon (1938, 1949)

*Eudamus dorantes* (Stoll): Barcant (1970, no. 387)

*Urbanus dorantes dorantes* (Stoll): Cock (1982b, no. 43), Cock (1986)

A common species.

*Urbanus teleus* (Hübner, 1821)

*Eudamus eurycles* (Latreille): Lamont (1917), Sheldon (1936, 1949), Barcant (1970, no. 398) [synonym]

*Urbanus teleus* (Hübner): Evans (1952), Cock (1982b, no. 44), Cock (1986)

I have seen no recent specimens.

Tobago: ♂ (W.G. Sheldon) [NHMUK]; ♀ 1–4 Feb 1931 (Capt. A.K. Totton) [NHMUK]; ♂ Feb 1932 (A. Hall) [NHMUK]

*Urbanus tanna* Evans, 1952

*Urbanus tanna* Evans: Cock (1982b, no. 45), Cock (1986)

A common species.

*Urbanus simplicius* (Stoll, 1790)

*Eudamus simplicius* (Stoll): Lamont (1917), Sheldon (1936, 1949), Barcant (1970, no. 389)

*Urbanus simplicius* (Stoll): Evans (1952), Cock (1982b, no. 46), Cock (1986)

A common species.

*Astraptes fulgerator fulgerator* (Walch, 1775)

*Astraptes fulgerator fulgerator* (Walch): Cock (1988)

Hebert et al. (2004) have shown that in Costa Rica, this ‘species’ comprises ten distinct species with different larvae and food plants. I am only aware of one form of this species in Trinidad, which I have only found feeding on *Senna bacillaris* (L. f.) H.S. Irwin & Barneby (Fabaceae) (Cock 1988, 2014b, 2016), and it matches none of the Costa Rican species. The caterpillar in Trinidad matches that illustrated by Sepp (1829–1843) for *A. fulminator* (Sepp), which is currently treated as a synonym of *A. f. fulgerator*. Speyside-Charlotteville col: ♀ (*Stachytarpheta* flowers) 15 May 1981 (M.J.W. Cock) [MJWC]

*Thessia atthesis* (Hewitson 1867)

*Urbanus atthesis* (Hewitson): Evans (1952), Cock (1982b), Cock (1986)

I have seen no recent specimens.

Tobago: ♀ (W.G. Sheldon) [NHMUK]

*Cogia calchas* (Herrich-Schäffer, 1869)

New island record.

Rockley Bay: ♂ 10 Sep 2002 (J. Morrall) [JMO, photo]

*Bungalotis astylos* (Cramer, 1780)

Fig. 1B shows the UPS of a female of *B. astylos* in the collection of J. Ingraham – the only record of a *Bungalotis* sp. from Tobago. Although some of Ingraham’s collection came to UWIZM following his

death, this specimen was not included (M. Rutherford pers. comm.). *Bungalotis astylos* and *B. midas* (Cramer) both occur in Trinidad; the two species are normally separated based on the markings of the underside and by the colour of the palpi, which are white in *B. midas* and brown in *B. astylos* (Evans 1952; Cock and Alston-Smith 1990), but in the absence of an image of the underside, this specimen was identified by S. Alston-Smith (pers. comm.) based on a careful comparison with his series of both species from Trinidad.

Englishman's Bay: ♀ late 2010–early 2011 (J. Ingraham) [M. Kelly photo 10934–5, 10937] (Fig. 1B)

### Subfamily: Pyrginae

The most recent analysis of Hesperidae phylogeny (Sahoo et al. 2016) was based on ten nuclear and mitochondrial markers from 270 genera, and found two distinct but equally plausible topologies. Both support the tribes of Warren et al. (2008, 2009), but in one, Pyrrhopygini and Celaenorrhini (as well as the Old World Tagiadini) are placed in Pyrginae, while in the other they appear in Eudaminae. Pending further work, the placement of these tribes in Pyrginae follows Warren et al. (2008, 2009).

### Tribe: Pyrrhopygini

*Mysoria barcastus* (Sepp, [1851]) *venezuelae* (Scudder, 1872)

*Pyrrhopyge venezuelae* Scudder: Longstaff (1908, 1912)

*Mysoria venezuelae* (Scudder): Sheldon (1936, 1949), Barcant (1970, no. 379)

*Mysoria barcastus venezuelae* (Scudder): Evans (1951), Cock (1982a), Cock (1982b, no. 5)

Cocoa Wattie: ♂ 7 Apr 1907 (G.B. Longstaff) [OMNH]; Englishman's Bay: ♂ late 2010–early 2011 (J. Ingraham) [M. Kelly photo 10900, 11904–5]; Speyside-Charlottetown col: ♂ 15 May 1981 (M.J.W. Cock) [MJWC]

### Tribe: Celaenorrhini

*Celaenorrhinus eligius eligius* (Stoll, 1781)

*Celaenorrhinus eligius* (Stoll): Sheldon (1938, 1949), Barcant (1970, no. 442)

*Celaenorrhinus eligius eligius* (Stoll): Evans (1952), Cock (1982b, no. 76), Cock and Alston-Smith (1990)

I have seen no recent specimens.

Tobago: 2♀ (W.G. Sheldon) [NHMUK]

### Tribe: Carcharodini

*Nisoniades rubescens* (Möschler, 1877)

*Pellicia bromias* (Godman and Salvin): Sheldon (1938, 1949), Barcant (1970, no. 465) [synonym]

*Nisoniades rubescens* (Möschler): Cock (1991)

Sheldon (1938) records one capture of this species at Roxborough by F. d'Abadie. I have not seen this specimen, but can confirm this is a Tobago species based on the specimens listed below:

Rockley Bay: ♂ 30 Sep 2004 (J. Morrall) [JMO, photo]; Speyside-Charlottetown col: ♂, ♀ 15 May 1981 (M.J.W. Cock) [MJWC]

*Pellicia tyana* Plötz, 1882 *toza* Evans, 1953

A new island record collected by J. Morrall, which I dissected and compared to the single known Trinidad specimen (Cock 2014b).

Rockley Bay: ♂ 30 Sep 2004 (J. Morrall) [JMO]

*Pellicia tonga* Evans, 1953

A new island record.

Arnos Vale: ♀ 18 Sep 2011 (J. Morrall) [JMO, photo]

*Pellicia dimidiata dimidiata* Herrich-Schäffer, 1870

*Pellicia dimidiata dimidiata* Herrich-Schäffer: Evans (1953), Cock (1982b, no. 88), Cock (1991)

Rockley Bay: ♂ 8 Sep 2005 (J. Morrall) [JMO, photo], ♀ 19 Sep 2007 (J. Morrall) [JMO, photo]; Spey-

side–Roxborough: ♀ 15 May 1981 (M.J.W. Cock) [MJWC]; Tobago: ♀ 16 Aug 1924 (C.L. Withycombe) [NHMUK]; ♂ ii.1932 (A. Hall) [NHMUK]

### Tribe: Erynnini

*Gorythion beggina* Mabille, 1898 *escalophoides* (Hayward, 1941)

*Gorythion beggina escalophoides* Hayward: Evans (1953), Cock (1982b, no. 97), Cock (1996)

I have seen no recent specimens.

Speyside: ♂ ii.1932 (A. Hall) [NHMUK]

*Anastrus petius petius* (Möschler, 1877)

*Anastrus petius petius* (Möschler): Cock (1982b, no. 123), Cock (2000)

Bloody Bay: ♂ 10 Oct 2008 (J. Morrall) [JMO, photo]; Roxborough–Bloody Bay Road, on main ridge top: ♂ (M.J.W. Cock) [MJWC]

*Ebrietas anacreon anacreon* (Staudinger, 1876)

A new island record.

North Coast: ♂ 11 Oct 2014 (J. Morrall) [JMO, photo]

*Helias phalaenoides phalaenoides* Fabricius, 1807

*Helias phalaenoides phalaenoides* (Fabricius): Evans (1953), Cock (1982b, no. 126), Cock (2000)

I have seen no recent specimens.

Tobago: 2♂ (F.W. Jackson) [NHMUK]

*Gesta gesta* (Herrich-Schäffer, 1863)

*Chiomara (Niconiades [sic]) gesta* (Herrich-Schäffer): Sheldon (1936, 1949)

*Niconiades [sic] gesta* (Herrich-Schäffer): Barcant (1970, no. 517)

*Gesta gesta gesta* (Herrich-Schäffer): Evans (1953), Cock (1982b, no. 129), Cock (2000)

I have seen no recent specimens.

Tobago: ♂, ♀ (W.G. Sheldon) [NHMUK]

### Tribe: Achlyodini

*Ouleus fridericus* (Geyer, 1832) *sheldoni* **ssp. nov.**

*Achlyodes fridericus* Geyer: Sheldon (1936, 1949), Barcant (1970, p. 135)

*Ouleus fridericus trina* Evans: Evans (1953), Cock (1982b, no. 98) [synonym of *O. fridericus sinepunctis* (Kaye), the Trinidad ssp.]

*Ouleus fridericus sinepunctis* (Kaye) / new ssp.: Cock (1996)

**Description and diagnosis.** Male and female similar (Fig. 2A, B). This subspecies resembles *O. fridericus sinepunctis* (Kaye) from Trinidad, particularly regarding the upper side markings, but differs in that the tornal half of the hind wing underside is pure white, rather than mottled grey-brown. The long series of *O. fridericus sinepunctis* from Trinidad in the NHMUK is quite variable and includes a small number of specimens with the UNH tornal almost as white, but the submarginal line is almost always present and the white area does not extend as far basally in spaces 1C and 2. The male genitalia (Fig. 3A-C) are not distinguished from those of *O. fridericus sinepunctis* shown in Cock (1996) and Fig. 3D-F.

**Holotype:** ♂: Tobago (W.G. Sheldon) [NHMUK]

**Paratypes:** 2♂ Tobago, Arnos Vale 18 Sep 2011 (J. Morrall) [JMO, MJWC dissected] (Fig. 2A, 3A-C); Tobago; ♀ Speyside, ii.1932 (A. Hall) [NHMUK]; Tobago, Speyside-Charlottetown col: ♀ 15 May 1981 (M.J.W. Cock) [MJWC] (Fig. 2B).

**Additional record:** Tobago, Charlottetown: ?♂ 24 Oct 2015 (K. Sookdeo photo)

**Discussion.** The white tornal area of the hindwing underside resembles *O. fridericus candangus* Mielke, which is restricted to southern Brazil (Distrito Federal, Goiás and São Paulo; Mielke 1968a, 1968b), but given the huge gap in distribution between the two, where only *O. fridericus fridericus* occurs, it seems justified to treat the Tobago population as a separate recognisable geographical subspecies.



**Fig. 2.** Adult *Ouleus fridericus*. **A**, ♂ paratype of *O. f. sheldoni* **ssp. nov.**, Tobago, Arnos Vale, 18 Sep 2011, (J. Morrall) [MJWC]. **B**, ♀ paratype of *O. f. sheldoni* **ssp. nov.**, Tobago, Charlotteville-Speyside Ridge, 15 May 1982 (M.J.W. Cock) [MJWC]. **C**, ♂ *O. f. sinepunctis*, Trinidad. Maracas Valley, near Ortinola Estate, in forest, 27 Mar 1979 (M.J.W. Cock) [MJWC]. **D**, ♂ *O. f. sinepunctis*, Trinidad, Curepe, 25 Sep 1979 (M.J.W. Cock) [MJWC]. **E**, ♀ *O. f. sinepunctis*, Trinidad, Waller Field South, larva collected on *Piper* sp., adult 30 Sep 1981, Ref. 20C (M.J.W. Cock) [MJWC]. **F**, ♀ *O. f. sinepunctis*, Trinidad, San Miguel Valley, old cacao estate, 17 Oct 1979 (M.J.W. Cock) [MJWC].

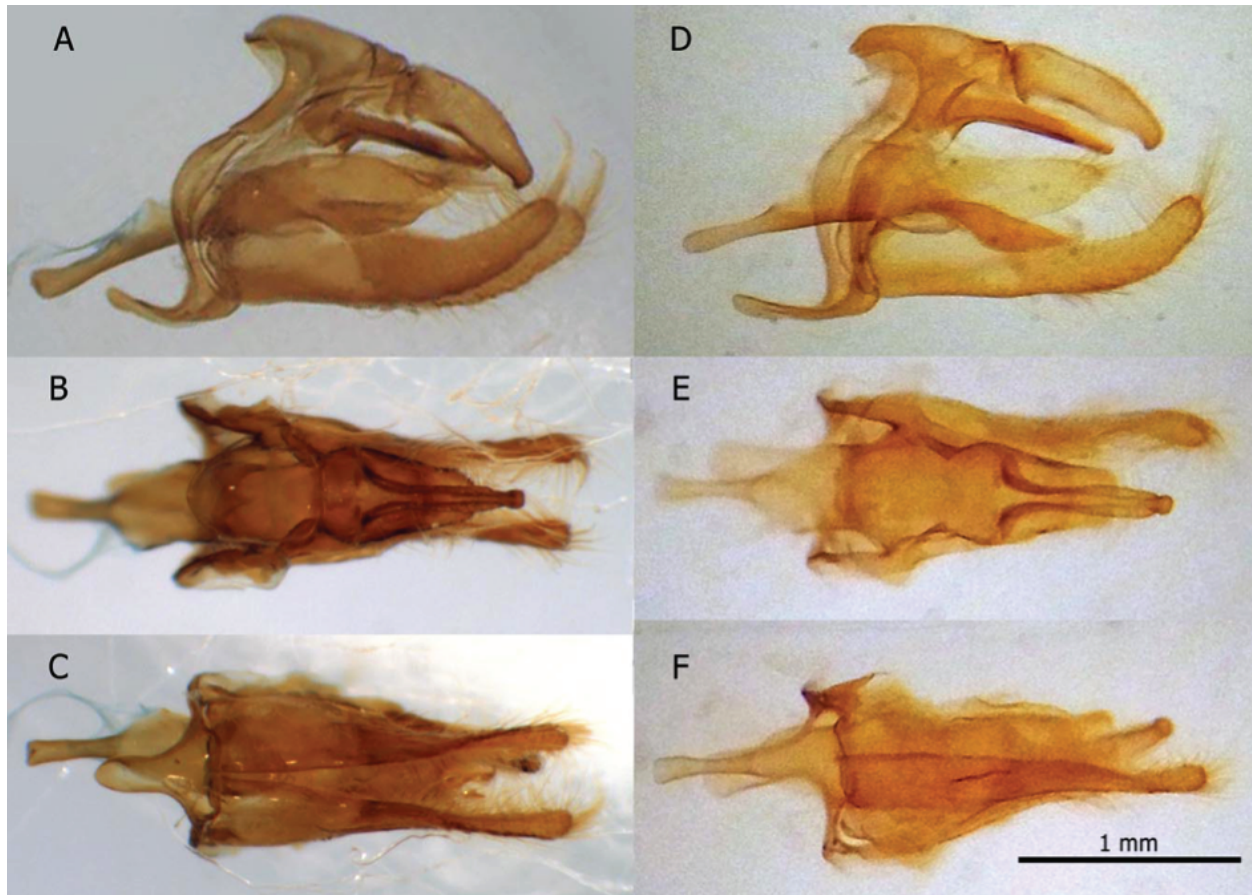
**Etymology.** The new subspecies is named after W.G. Sheldon, who first recorded *O. fridericus* from Tobago, and whose lists of the butterflies of Tobago have been the only ones available for the last 80 years.

**Tribe: Pyrgini**

*Antigonus erosus* (Hübner, [1812])

*Systacea erosa* [sic] (Hübner): Longstaff (1908, 1912), Sheldon (1936, 1938, 1949), Barcant (1970, p. 135)

*Antigonus erosus* (Hübner): Evans (1953), Barcant (1970, no. 474), Cock (1982b, no. 117), Cock (1998) Bloody Bay: ♀ 30 Sep 2004 (J. Morrall) [JMO, not seen]; Cocoa Wattie: ♂ 8 Apr 1907 (G.B. Longstaff)



**Fig. 3.** Male genitalia of *Ouleus fridericus sheldoni* ssp. nov. intact (data as Fig. 2A) and *O. f. sinepunctis* with left valve removed (data as Fig. 2D). **A**, *O. f. sheldoni* ssp. nov. left view. **B**, *O. f. sheldoni* ssp. nov. dorsal view. **C**, *O. f. sheldoni* ssp. nov. ventral view. **D**, *O. f. sinepunctis* left view. **E**, *O. f. sinepunctis* dorsal view. **F**, *O. f. sinepunctis* ventral view.

[OMNH]; Rockley Bay: ♀ 18 Sep 2007 (J. Morrall) [JMO, not seen], 3♂ 8 Sep 2009 (J. Morrall) [JMO, not seen]; Tobago: 2♂♂ (W.G. Sheldon) [NHMUK]

*Pyrgus orcus* (Stoll, 1780)

*Hesperia syrighthus* [sic] (Fabricius): Longstaff (1908, 1912) [misidentification of a synonym of *P. oileus* (Linnaeus)]

*Hesperia syrighthus* (Fabricius): Lamont (1917), Sheldon (1936), Barcant (1970, no. 485) [misidentification of a synonym of *P. oileus*]

*Hesperia syrighthus* [sic] (Fabricius): Sheldon (1949) [synonym of *P. oileus*]

*Pyrgus oileus orcus* (Stoll): Evans (1953), Plester (1994)

*Pyrgus orcus* (Stoll): Cock (1982b, no. 131), Cock (2000)

A common species.

**Subfamily: Hesperinae**

**Tribe: Incertae Sedis**

(From Evans (1955) *Carystus* group)

*Perichares philetus philetus* (Gmelin, [1790])

*Perichares corydon* [sic] (Fabricius): Sheldon (1936, 1949), Barcant (1970, no. 603) [misspelling of *coridon*, a preoccupied name]

*Perichares philetus philetus* (Gmelin): Evans (1955), Cock (1982b, no. 213), Cock (2005)

Although Mielke (2004) treats *P. philetus* as having subspecies, Warren et al. (2016) treat it as monotypic. The discovery by Burns et al. (2008) that in Costa Rica there is a complex of at least four species treated as *P. philetus* certainly indicates that *P. philetus* needs re-evaluation throughout its range, so the subspecies or species question is considered open and left unchanged for now (Cock 2014b).

Tobago: ♂, ♀ (W.G. Sheldon) [NHMUK]; Charlotteville, at light: ♂ 24 Oct 2015 (K. Sookdeo photo)

### Tribe: Carystini

This tribe appears as Calpodini Clark, 1948 in Warren et al. (2009), with Carystini Mabilie, 1878 as a synonym. Carystini, as the older name, should be used preferentially (O.H.H. Mielke, pers. comm.).

*Talides sergestus* (Cramer, 1775)

*Talides sinon* (Stoll): Sheldon (1938, 1949) [misidentification of a synonym of *T. sinois* Hübner]

*Talides sinois sinois* Hübner: Cock (1982b, no. 203) [misidentification]

*Talides sergestus* (Cramer): Cock (2005)

I have seen no recent specimens.

Roxborough: ♂ (F. d'A[abadie]) [NHMUK] (this specimen is not listed in Evans (1955)).

*Carystus phorcus phorcus* (Cramer, 1777)

*Carystus phorcus* (Cramer): Sheldon (1938, 1949), Barcant (1970, no. 573)

*Carystus phorcus phorcus* [sic] (Cramer): Evans (1955), Cock (1982b, no. 206), Cock (2005)

I have seen no recent specimens.

Tobago: ♀ (W.G. Sheldon) [NHMUK]

*Calpodes ethlius* (Stoll, 1782)

*Calpodes ethlius* (Stoll): Sheldon (1936, 1949), Evans (1955), Barcant (1970, no. 506), Cock (1982b, no. 245), Cock (2003)

I have seen no recent specimens.

Roxborough: ♂ Jan 1937 (F. d'A[badie]) [NHMUK]

*Panoquina panoquinoides* (Skinner, 1891) ? ssp.

*Panoquina panoquinoides panoquinoides* (Skinner): Evans (1955), Cock (1982b)

*Panoquina panoquinoides* (Skinner) Tobago population: Cock (2003)

The subspecies of *P. panoquinoides* need further work (Cock 2003), so no subspecies is attributed to the Tobago population at this time.

Military Hill: ♂ (on flowers by road) 16 May 1982 (M.J.W. Cock) [MJWC]; Speyside: ♂ 15 May 1982 (M.J.W. Cock) [MJWC]; Tobago: ♀ 8 Feb 1931 (Capt. A.K. Totton) [NHMUK]

*Panoquina lucas lucas* (Fabricius, 1793)

*Prenes sylvicola* (Herrich-Schäffer): Sheldon (1936, 1949), Barcant (1970, p. 135)

*Panoquina sylvicola* (Herrich-Schäffer): Evans (1955), Cock (1982b, no. 248)

*Panoquina lucas* (Fabricius): Cock (2003)

Rockley Bay: ♀ 8 Sep 2005 (J. Morrall) [JMO, photo]; Roxborough: ♂, ♀ (F. d'A[badie]) [NHMUK, W.G. Sheldon bequest]; Tobago: ♂ Feb 1932 (A. Hall) [NHMUK]

*Saliana esperi esperi* Evans, 1955

*Thracides antoninus* (Latreille): Sheldon (1936, 1949) [misidentification]

*Thracides antoninus* [sic] (Latreille): Barcant (1970, no. 596) [misidentification]

*Saliana esperi* Evans: Evans (1955), Cock (1982b, no. 263), Cock (2003)

I have seen no recent specimens.

Tobago: ♂, ♀ (W.G. Sheldon) [NHMUK]

*Saliana antoninus* (Latreille, [1824])

Sheldon's (1936) record of this species was based on a misidentification of *S. esperi*, which had not been

described at that time (his specimens are in the NHMUK). It has since been recorded from Tobago. Speyside: ♀ 16 Sep 2011 (J. Morrall) [JMO, photo]

### Tribe: Anthoptini

*Synapte malitiosa* (Herrich-Schäffer, 1865) *pericles* (Möschler, 1879)

*Cymaenes silius* (Latreille): Longstaff (1908, 1912), Sheldon (1936, 1949) [misidentification]

*Cymaenes pericles* (Möschler): Sheldon (1936, 1949)

*Cymaenes silius pericles* Möschler: Barcant (1970, no. 576)

*Synapte malitiosa pericles* (Möschler): Evans (1955), Cock (1982b, no. 136), Cock (2010)

The record of *S. silius* (= *C. silius*) from Tobago is based on a specimen captured at Cocoa Wattie in April 1907 by G.B. Longstaff (1908). This specimen is in OMNH; it was identified as *C. silius* by H.H. Druce and as *C. pericles* by W.J. Kaye. The abdomen is missing, but it is a typical specimen of *S. malitiosa pericles*.

Cocoa Wattie: ?♂ (no abdomen) 8 Apr 1907 (G.B. Longstaff) [OMNH, det. *Cymaenes silius* Latr. by H.H. Druce; *Cymaenes pericles* Mösch. by W.J. Kaye, 1907]; Rockley Bay: ♂ 8 Sep 2005 (J. Morrall) [JMO, photo]; Speyside: ♂ [NHMUK]; ♂ Feb 1932 (A. Hall) [NHMUK]; Tobago: 3♂, 3♀ (W.G. Sheldon) [NHMUK], ♂ Feb 1932 (A. Hall) [NHMUK]

*Anthoptus maracanae* (Bell, 1934)

*Anthoptus calcarea maracanae* (Bell): Evans (1955), Cock (1982b, no. 139)

*Anthoptus maracanae* (Bell): Cock (2010)

I have seen no recent specimens.

Tobago: ♂ 1–4 Feb 1931 (Capt. A.K. Totton) [NHMUK]

*Anthoptus insignis* (Plötz, 1882)

*Mnasitheus simplicissima* (Herrich-Schäffer): Sheldon (1936, 1949) [misidentification]

*Mnasitheus simplicissimus* [sic] (Herrich-Schäffer): Barcant (1970, no. 555) [misidentification]

*Epeus veleda* (Godman): Longstaff (1908, 1912), Sheldon (1936, 1949) [*Epeus* is an unavailable homonym; misidentification (Cock 2013)]

*Epius* [sic] *veleda* (Godman): Barcant (1970, no. 585) [misidentification (Cock 2013)]

*Eprius velada velada* [sic] (Godman): Cock (1982b, no. 147) [misidentification (Cock 2013)]

*Nastra insignis* (Plötz): Evans (1955), Cock (1982b, no. 157)

*Anthoptus insignis* (Plötz): Cock (2010), Cock (2013)

A common species.

*Corticea corticea* (Plötz, 1882)

*Megistias cortica* [sic] (Plötz): Longstaff (1908, 1912), Sheldon (1936, 1949), Barcant (1970, p. 135)

*Megistias epiberus* (Mabille): Sheldon (1936, 1949), Barcant (1970, no. 562) [synonym of *C. lysias* (Plötz); misidentification]

*Corticea corticea corticea* (Plötz): Evans (1955), Cock (1982b, no. 140)

*Corticea corticea* (Plötz): Cock (2010)

Some records of *M. epiberus* may actually be of *Callimormus saturnus*, as there is a pair of G.B. Longstaff specimens of *C. saturnus* in OMNH identified by W.J. Kaye: One as *Callimormus corades* (C. Felder) and the other as *M. epiberus*. Nevertheless, *Corticea corticea* is a common species in Tobago.

### Tribe: Moncini

*Callimormus juvenus* Scudder, 1872

*Callimormus juvena* [sic] Scudder: Sheldon (1936, 1949), Barcant (1970, p. 135)

*Callimormus juvenus* Scudder: Cock (2011)

No records from Trinidad.

Rockley Bay: ♀ 8 Sep 2005 (J. Morrall) [JMO, photo]; Speyside: ♂ Feb 1932 (A. Hall) [BMB]; Tobago: ♂ (no head) (W.G. Sheldon) [NHMUK]; ♀ Feb 1932 (A. Hall) [NHMUK, as *Parphorus decora* (Herrich-Schäffer) (Cock 2011)]

*Callimormus saturnus* (Herrich-Schäffer, 1869)

*Callimormus corades* (C. Felder): Longstaff (1908, 1912), Sheldon (1936, 1949), Barcant (1970, no. 587) [misidentification]

*Callimormus saturnus* (Herrich-Schäffer): Evans (1955), Cock (1982b, no. 144), Cock (2011)

See comment under *Corticea corticea* above. A common species.

*Methionopsis ina* (Plötz, 1882)

New island record. This is a common species in Trinidad, but confirmation from Tobago, based on dissection of a male, would be desirable, as this identification is based only on careful external examination and comparison with the other small brown skippers known from Trinidad (Cock 2013).

Rockley Bay: 2♀ 10 Sep 2002 (J. Morrall) [JMO, photo]

*Thargella caura caura* (Plötz, 1882)

*Thargella caura caura* (Plötz): Cock (2013)

The specimen listed below is a new island record; although it was dissected and sketched by W.H. Evans, it was omitted in Evans' (1955) catalogue. I have seen no recent specimens.

Tobago: ♂ (W.G. Sheldon) [NHMUK]

*Monca telata telata* (Herrich-Schäffer, 1869)

*Megistias telata* (Herrich-Schäffer): Sheldon (1936, 1949), Barcant (1970, no. 561)

*Monca telata telata* (Herrich-Schäffer): Evans (1955), Cock (1982b, no. 155), Cock (2011)

Crown Point: ♀ 16 May 1981 (M.J.W. Cock) [MJWC]; Rockley Bay: ♂ 10 Sep 2002 (J. Morrall) [JMO, photo]; ♂ 3 Jun 2006 (J. Morrall) [JMO, photo]; Tobago: ♂ (W.G. Sheldon) [NHMUK]; ♀ 1 Apr 1931 (Capt. A.K. Totton) [NHMUK]

*Cybaeus tripunctus* (Herrich-Schäffer, 1865) *theogenis* (Capronnier, 1874)

*Lerodea tripuncta* [sic] (Herrich-Schäffer): Sheldon (1936, 1949), Barcant (1970, p. 135)

*Lerodea phocilides* [sic] (Plötz): Sheldon (1938, 1949), Barcant (1970, p. 135) [misspelling of *phocylides*, a synonym of *Lerema accius* (J.E. Smith); probable misidentification, see Cock (2012)]

*Lerema parumpunctata* (Herrich-Schäffer): Sheldon (1938, 1949) [synonym of *Lerema accius*; probable misidentification, see Cock (2012)]

*Lerema parum punctata* [sic] (Herrich-Schäffer): Barcant (1970, p. 135) [as last]

*Cybaeus tripunctus theogenis* (Capronnier): Evans (1955), Cock (1982b, no. 158), Cock (2012)

A common species.

*Vehilius stictomenes stictomenes* (Butler, 1877)

*Vehilius stictomenes stictomenes* (Butler): Evans (1955), Cock (1982b, no. 159), Cock (2011)

I have seen no recent specimens.

Old Grange Tower: ♂ 1–4 Feb 1931 (Capt. A.K. Totton) [NHMUK]

*Lerema ancillaris* (Butler, 1877)

*Lerema ancillaris ancillaris* (Butler): Evans (1955), Cock (1982b, no. 177), Cock (2012)

Rockley Bay: ♂ 16 Sep 2007 (J. Morrall) [JMO, not seen]; Speyside: ♀ 4 Jun 1999 (J. Morrall) [JMO, photo]; Tobago: ♂ (W.G. Sheldon) [NHMUK]

*Nisoniades xanthaphes* Hübner, [1821]

*Niconiades* [sic] *xanthaphes* Hübner: Sheldon (1938, 1949), Evans (1955), Barcant (1970, no. 516), Cock (1982b, no. 254), Cock (2003)

I have seen no recent specimens.

Tobago: ♂ (W.G. Sheldon) [NHMUK]

*Vettius fantasos* (Cramer, 1780)

*Carystus fantasos* (Cramer): Sheldon (1936, 1949), Barcant (1970, no. 572)

*Vettius fantasos fantasos* (Cramer): Evans (1955), Cock (1982b, no. 186)



*Vettius fantasos* (Cramer): Cock (2009)

Arnos Vale: 2♂ 18 Sep 2011 (J. Morrall) [JMO, not seen], ♂, ♀ 30 Sep 2012 (J. Morrall) [JMO, not seen]; Speyside: ♂ 6 Sep 2005 (J. Morrall) [JMO, not seen], ♀ Feb 1932 (A. Hall) [BMB]; Tobago: ♂, ♀ (W.G. Sheldon) [NHMUK]; ♂, ♀ Feb 1932 (A. Hall) [NHMUK]

*Rhinthon osca* (Plötz, 1882)

*Rhinthon chiriquensis* (Mabille): Sheldon (1936, 1949) [synonym]

*Rhinthon cubana osca* (Plötz): Evans (1955), Cock (1982b, no. 226), Cock (2006)

I have seen no recent specimens.

Speyside: ♀ Feb 1932 (A. Hall) [NHMUK]

*Mucia zygia* (Plötz, 1886)

*Mucia thyia* Godman: Sheldon (1938, 1949), Barcant (1970, no. 505) [synonym]

*Mucia zygia* (Plötz): Evans (1955), Cock (1982b, no. 227), Cock (2006)

Charlotteville – Speyside Ridge: ♀ 15 May 1982 (M.J.W. Cock) [MJWC]; Tobago: ♂ (W.G. Sheldon) [NHMUK]

### Tribe: Hesperiiini

*Hylephila phyleus phyleus* (Drury, 1773)

*Hylephila phylaeus* [sic] (Drury): Sheldon (1938, 1949), Barcant (1970, no. 495)

*Hylephila phyleus phyleus* (Drury): Evans (1955), Cock (1982b, no. 231), Cock (2007)

*Hylaphela phleus* [sic] (Drury): Brush (1960)

Rockley Bay: ♂ 10 Sep 2002 (J. Morrall) [JMO, photo], ♀ 18 Sep 2007 (J. Morrall) [JMO, photo]; Tobago: ♂, ♀ (W.G. Sheldon) [NHMUK]; ♂ (left wings missing) (E. Bourke) [OMNH]

*Polites vibex* (Geyer, 1832) *praeceps* (Scudder, 1872)

*Thymelicus vibex* Geyer: Lamont (1917), Sheldon (1936, 1949), Barcant (1970, no. 496)

*Polites vibex praeceps* (Scudder): Cock (1982b, no. 232), Cock (2007)

Sheldon (1936, 1938) did not capture this species himself, and Lamont's specimen has not been located. Nevertheless, J. Morrall has recorded it in recent years.

Rockley Bay: ♀ 10 Sep 2002 (J. Morrall) [JMO, photo]; ♀ 3 Jun 2006 (J. Morrall) [JMO, photo]

*Pompeius pompeius* (Latreille, [1824])

*Pompeius pompeius* (Latreille): Evans (1955), Cock (1982b, no. 235), Cock (2007)

I have seen no recent specimens.

Tobago: ♂ 1–4 Feb 1931 (Capt. A.K. Totton) [NHMUK]

*Euphyes peneia* (Godman, 1900)

*Atrytone pericia* [sic] (Godman): Sheldon (1938, 1949), Barcant (1970, p. 135)

*Euphyes peneia* (Godman): Evans (1955), Cock (1982b, no. 241), Cock (2007)

I have seen no recent specimens.

Tobago: ♂ (W.G. Sheldon) [NHMUK]

*Cynea diluta* (Herrich-Schäffer, 1869)

*Rhinthon bistrigula* (Herrich-Schäffer): Sheldon (1936, 1949) [misidentification]

*Cynea diluta* (Herrich-Schäffer): Cock (2006)

Sheldon's (1936) record is based on the following capture by W.J. Kaye at Bacolet. I have seen no recent specimens.

Tobago: ♂ (W.J. Kaye) [MGCL]

*Nyctelius nyctelius nyctelius* (Latreille, [1824])

*Prenes nyctelius* (Latreille): Sheldon (1936, 1949), Barcant (1970, no. 507)

*Nyctelius nyctelius nyctelius* (Latreille): Evans (1955), Cock (1982b, no. 252), Cock (2002), Cock (2003)

Crown Point: ♂ 12 Sep 1982 (M.J.W. Cock) [MJWC]; Tobago: ♂ (W.G. Sheldon) [NHMUK]

*Vacerra bonfilius* (Latreille, [1824]) *litana* (Hewitson, 1866)

*Vacerra litana* (Hewitson): Sheldon (1936, 1949), Barcant (1970, no. 515)

*Vacerra bonfilius litana* (Hewitson): Evans (1955), Cock (1982b, no. 253), Cock (2003)

I have seen no recent specimens.

Tobago: 2♂, ♀ Feb 1932 (A. Hall) [NHMUK]

### Family: Pieridae

Nomenclature follows Cock (2014a), which is based on Lamas (2004b).

### Subfamily: Coliadinae

*Anteos maerula* (Fabricius, 1775)

*Amynthia maerula* (Fabricius): Sheldon (1936, 1949)

*Anteos maerula* (Fabricius): Barcant (1970, no. 166)

I have not seen any recent specimens.

Speyside: ♂ Feb 1932 (A. Hall) [NHMUK]

*Phoebis argante* DJH01 and / or DJH02

*Phoebis argante* (Fabricius): Lamont (1917), Barcant (1970, no. 164)

It is curious that Lamont (1917) recorded this species, but Sheldon (1949) didn't. However, Sheldon (1949) records *P. agarithe* (below) and Lamont (1917) didn't, so the two species were probably confused. See discussion of *P. argante* in Cock (2014a) based on the work reported by Janzen et al. (2009). I have not examined any material from Tobago, so I cannot clarify whether one or both species of *P. argante* are present. The following record is of an image of the underside only, which could be either species. Englishman's Bay: ♂ (UNS) late 2010–early 2011 (J. Ingraham) [M. Kelly photo 10981–2]

*Phoebis agarithe* (Boisduval, 1836)

*Phoebis agarithe* (Boisduval): Longstaff (1908, 1912), Sheldon (1936, 1949)

Mt. St. George: ♂ 16 May 1982 (M.J.W. Cock) [MJWC]; common at Speyside (J. Morrall, pers. comm.);

Tobago ♂ 1977 (L.F. Wise) [CMZ, as *Phoebis argante*]

*Phoebis philea philea* (Linnaeus, 1763)

*Catopsilia philea* (Linnaeus): Sheldon (1938, 1949)

*Phoebis philea* (Linnaeus): Barcant (1970, no. 165)

I have not seen recent specimens.

Roxborough: ♂ (F. d'A[badie]) [NHMUK]

*Phoebis sennae* (Linnaeus, 1758) *marcellina* (Cramer, 1777)

*Callidryas eubule* (Linnaeus) f. *sennae* (Linnaeus): Longstaff (1908, 1912)

*Catopsilia eubule* (Linnaeus): Lamont (1917), Sheldon (1936, 1949) [synonym]

*Phoebis sennae* (Linnaeus): Barcant (1970, no. 163), Plester (1994)

Crown Point: ♀ 9 Jan 1982 (M.J.W. Cock) [MJWC]; Speyside ♂ 15 May 1982 (M.J.W. Cock) [MJWC];

Speyside–Roxborough: ♀ 15 May 1982 (M.J.W. Cock) [MJWC]; Tobago: 2♂, 3♀ (E. Bourke) [OMNH]

*Pyrisitia leuce* (Boisduval, 1836) *athalia* (C. Felder and R. Felder, 1865)

*Terias westwoodii* [sic] (Boisduval): Longstaff (1908, 1912), Sheldon (1936, 1949) [misidentification]

*Terias leuce athalia* (C. Felder and R. Felder): Sheldon (1936, 1949)

*Eurema leuce* (Boisduval): Barcant (1970, no. 171)

Speyside: ♂ 15 May 1982 (M.J.W. Cock) [MJWC]; Speyside–Roxborough: ♀ 15 May 1982 (M.J.W. Cock) [MJWC]

*Pyrisitia venusta venusta* (Boisduval, 1836)

*Terias nise* (Cramer): Longstaff (1908, 1912), Lamont (1917) [misidentification in common use]

*Terias venusta* (Boisduval): Sheldon (1936, 1949)

*Eurema venusta* (Boisduval): Brush (1960), Barcant (1970, no. 170)

Crown Point: 2♀ 9 Jan 1982 (M.J.W. Cock) [MJWC]; Goodwood: ♀ 16 May 1982 (M.J.W. Cock) [MJWC]; Tobago: 3♂ (E. Bourke) [OMNH]

*Eurema albula* (Cramer, 1775) *marginella* (C. Felder and R. Felder, 1861)

*Terias albula* (Cramer): Longstaff (1908, 1912), Lamont (1917), Sheldon (1936, 1949)

*Eurema albula* (Cramer): Barcant (1970, no. 169)

Bloody Bay: ♀ 18 May 1981 (M.J.W. Cock) [MJWC]; Charlotteville – Speyside Ridge: ♂ 15 May 1982 (M.J.W. Cock) [MJWC]; Crown Point: 2♂ 9 Jan 1982 (M.J.W. Cock) [MJWC]; Tobago: 3? (E. Bourke) [OMNH]

*Eurema arbela* Geyer, 1832 *gratiosa* (Doubleday, 1847)

*Sphaenogona gratiosa* (Doubleday): Sheldon (1938, 1949)

*Eurema gratiosa* (Doubleday): Brush (1960), Barcant (1970, no. 174)

Crown Point: 2♂ 9 Jan 1981 (M.J.W. Cock) [MJWC], ♀ 9 Jan 1982 (M.J.W. Cock) [MJWC]

*Eurema दौरा* (Godart, 1819) *lydia* (C. Felder and R. Felder, 1861)

*Terias elathea* (Cramer): Lamont (1917), Sheldon (1936, 1949) [misidentification]

*Eurema elathea* (Cramer): Sheldon (1938, 1949), Barcant (1970, no. 172) [misidentification]

In works on the butterflies of Trinidad, *E. elathea vitellina* (C. Felder and R. Felder, 1861) has been confused with this species (Cock 2014a). I am challenged to confidently distinguish all females of the two species, but males are readily separated: *Eurema दौरा lydia* has a curved grey bar from the base to nearly the tornus of the UPF, whereas *E. elathea vitellina* has a straight, almost black bar (Smith et al. 1994; Warren et al. 2016). Using this diagnostic feature, Sheldon's male specimens in NHMUK are *E. दौरा lydia*, and as yet I have seen no Tobago specimens of male *E. elathea*.

Crown Point: ♂ 16 May 1981 (M.J.W. Cock) [MJWC]; Scarborough: ♂ 15 Jun 1914 (W.E. Broadway) [NHMUK]; Tobago: ♂ 12 Nov 1900 [OMNH, Stevens' Sale, presented by G.C. Griffiths]; Tobago: 2♂, 2♀ (W.G. Sheldon) [NHMUK]; ♂ (L.F. Wise) [CMZ, as *Eurema elathea palmyra*]. Note the 2♀ in NHMUK are assumed to match the associated 2♂.

### Subfamily: Pierinae

*Melete lycimnia* (Cramer, 1777) *harti* (Butler, 1896)

A new island record.

Rockley Bay: ♂ 30 Sep 2004 (J. Morrall) [JMO, photo]

*Glutophrissa drusilla drusilla* (Cramer, 1777)

*Glutophrissa drusilla* (Cramer): Sheldon (1938, 1949)

*Appias drusilla* (Cramer): Barcant (1970, no. 179)

I have not seen recent specimens. d'Abadie's specimen, a female in NHMUK, is less heavily marked than the typical Trinidad female, but this form occurs occasionally in other parts of the range of this species (specimens in NHMUK).

Roxborough: ♀ Mar 1937 (F. d'Abadie) [NHMUK]

*Ascia monuste monuste* (Linnaeus, 1764)

*Pieris phileta* (Fabricius): Longstaff (1908, 1912) [different subspecies]

*Pieris monuste* (Linnaeus): Sheldon (1936, 1938, 1949)

*Ascia monuste* (Linnaeus): Barcant (1970, no. 183)

Crown Point: ♂ 9 Jan 1982 (M.J.W. Cock) [MJWC]

### Family: Riodinidae

Nomenclature and classification follows Callaghan and Lamas (2004).

### Subfamily: Riodininae

#### Tribe: Mesosemiini

*Perophtalma tullius* (Fabricius, 1787)

*Perophtalma tullius* (Fabricius): Sheldon (1936, 1949), Barcant (1970, no. 190)  
Charlotteville-Speyside Ridge 2♂, 1♀ (M.J.W. Cock) [MJWC]

### Tribe: Eurybiini

*Calephelis laverna* (Godman and Salvin, 1886) *trinidadensis* McAlpine, 1971

*Emesis coeneus* [sic] (Linnaeus): Lamont (1917) [a preoccupied name; misidentification]

*Emesis caeneos* [sic] (Linnaeus): Sheldon (1936, 1949) [a preoccupied name; misidentification]

*Emesis caeneus* (Linnaeus): Barcant (1970, no. 231) [preoccupied name; misidentification]

This species has recently been taken quite commonly by several collectors, and it is strange that it did not seem to have been recorded earlier. However, in his unpublished journal, A. Hall refers to capturing ‘a few’ ‘*Charis argyrodines*’, i.e. *Calephelis argyrodines* (H.W. Bates), an obvious misidentification for *C. laverna*. Although Sheldon (1936) does not include this record, he does credit A. Hall with finding ‘*Emesis caeneos* (Linnaeus)’ common at Speyside, yet that species is not mentioned in Hall’s journal. In fact, the name *Charis caeneus* (Linnaeus) was misapplied to *Calephelis laverna* and the North American species *Calephelis virginensis* (Guérin-Méneville) for many years (Godman and Salvin 1879-1901; Pelham 2008). It seems that Sheldon (1936) perpetuated this error, e.g. for his own specimen in NHMUK. Although W.S. McAlpine examined and added identification labels to material from Tobago in the NHMUK, he didn’t mention Tobago in the distribution of *C. laverna trinidadensis* in his monograph (McAlpine 1971).

Bloody Bay: 2♂, ♀ 10 Oct 2008 (J. Morrall) [JMO, not seen]; Crown Point: ♀ 9 Jan 1982 (M.J.W. Cock) [MJWC]; Scarborough: ♀ 14.vi.1914 (W.E. Broadway) [NHMUK, W.S. McAlpine slide 28]; Speyside: ♂ 1 Oct 2004 (J. Morrall) [JMO]; Tobago ♂ ii.1932 (A. Hall) [NHMUK]; ♂ (no abdomen) (W.G. Sheldon) [NHMUK, det. W.S. McAlpine]; 2♂ 1977 (L.F. Wise) [CMZ, as *Charmona cleonus*]

*Lasaila agesilas agesilas* (Latreille, [1809])

*Lasaila meris* (Stoll): Sheldon (1936, 1949) [misidentification]

*Lasaila narses* Staudinger: Sheldon (1938) [synonym]

*Lasaila agesilas narses* Staudinger: Barcant (1970, no. 225) [synonym]

Arnos Vale: ♂ 18 Sep 2011 (J. Morrall) [JMO, not seen]; Englishman’s Bay: 4♂ 12 Jun 2010 (J. Morrall) [JMO, not seen]; ♂ 17 Jun 2010 (J. Morrall) [JMO, not seen]; North Coast: 11 Oct 2014 (J. Morrall) [JMO, not seen]

*Melanis electron electron* (Fabricius, 1793)

*Lymnas iarbas* (Fabricius): Lamont (1917), Sheldon (1936, 1949), Barcant (1970, no. 207) [preoccupied name]

*Melanis electron* (Fabricius): Sookdeo (2015)

A common species.

*Melanis smithiae* (Westwood, 1851) *xarifa* (Hewitson, [1853])

*Lymnas xarifa* (Hewitson): Sheldon (1936, 1949), Barcant (1970, no. 208)

I have seen no recent specimens.

Tobago: ? Mar 1914 (F.W. Jackson) [OMNH]

### Tribe: Symmachiini

*Mesene monostigma monostigma* (Erichson, [1849])

*Mesene hya guttula* Stichel: D’Abrera (1994, p. 1026–1027) [synonym]

D’Abrera (1994) illustrates a specimen from Tobago in the NHMUK (listed below); also captured by J.P.W. Hall (pers. comm.) in 2005.

Tobago: ♂ (G.H. Sworder) [NHMUK]

*Mesene phareus* (Cramer, 1777)

*Mesene phareus* (Cramer): Sheldon (1936, 1949), Barcant (1970, no. 219)

Bloody Bay: ♂, ♀ 10 Oct 2008 (J. Morrall) [JMO, not seen]

**Tribe: Helicopini**

*Anteros formosus* (Cramer, 1777)

*Anteros formosus* (Cramer): Sheldon (1938, 1949), Barcant (1970, no. 195)

There is a male from Tobago in the NHMUK bequested by W.G. Sheldon (B. Huertas, pers. comm.).

**Tribe: Incertae Sedis**

*Emesis brimo brimo* Godman and Salvin, 1889

*Emesis progne* (Godman): Sheldon (1936, 1938, 1949), Barcant (1970, no. 234) [synonym] [*E. b. progne* is a valid subspecies]

I have not seen specimens, but W.J. Kaye's record from Bacolet (Sheldon 1936) and F. d'Abadie's from the Forest Reserve (Sheldon 1938) are unlikely to be in error.

**Tribe: Nymphidiini**

*Calospila emylius* (Cramer, 1775)

New island record.

Bloody Bay: ♂ 10 Oct 2008 (J. Morrall) [JMO, photo]

*Juditha molpe* (Hübner, [1808])

*Nymphidium mesoleucum* Bates: Sheldon (1936, 1949) [assumed misidentification]

*Nymphidium mesoleucum* is now a synonym of *Synargis calyce*, and it may well be that Sheldon's (1936, 1949) listing of *N. mesoleucum* refers to that species. However, since he lists *S. calyce* separately (Sheldon 1936), but does not list the quite similar species *J. molpe* (Sheldon 1949), and there is a specimen of *J. molpe* in the NHMUK that he captured, it seems likely that he misidentified his specimen as *N. mesoleucum*.

Bloody Bay ♀ 15 May 1981 (M.J.W. Cock) [MJWC]; Charlotteville: ♀ 24 Oct 2015 (K. Sookdeo photo, Tobago Moths 4); Tobago ♀ (W.G. Sheldon) [NHMUK]

*Synargis calyce* (C. Felder and R. Felder, 1862)

*Nymphidium calyce* C. Felder and R. Felder: Lamont (1917), Sheldon (1936, 1949)

*Nymphidium mesoleucum* Bates: Sheldon (1936, 1949) [synonym]

*Nymula calyce* (C. Felder and R. Felder): Barcant (1970, no. 278)

A common species.

*Theope eudocia* Westwood, 1851

*Theope eudocia* Westwood: Sheldon (1938, 1949)

*Theope eudocia eudocia* Westwood: Barcant (1970, no. 246)

Arnos Vale: ♀ 30 Sep 2012 (J. Morrall) [JMO, not seen]; Tobago: 2♀ [NHMUK]

*Theope virgilius* (Fabricius, 1793)

*Theope* sp.: Lamont (1917) [likely identification, but could be next species]

*Theope virgilius* (Fabricius): Sheldon (1936, 1949), Barcant (1970, no. 250)

Bloody Bay: 2♀ 10 Oct 2008 (J. Morrall) [JMO, not seen]; North Coast: ♂ 11 Oct 2014 (J. Morrall) [JMO, not seen]; Rockley Bay: ♂ 16 Jul 2007 (J. Morrall) [JMO, not seen]; Tobago: 3♂, 2♀ [NHMUK]

*Theope lycaenina* Bates, 1868

A new island record.

Bloody Bay: ♀ 10 Oct 2008 (J. Morrall) [JMO, photo]

**Family: Lycaenidae****Subfamily: Theclinae****Tribe: Eumaeini**

Nomenclature and sequence follows Cock and Robbins (2016), based on Robbins (2004).

*Pseudolycaena marsyas* (Linnaeus, 1758)

*Pseudolycaena marsyas* (Linnaeus): Sheldon (1936, 1949), Barcant (1970, no. 364)

A common species.

*Rekoa palegon* (Cramer, 1780)

*Calycopis palegon* (Cramer): Sheldon (1936, 1949)

*Rekoa palegon* (Cramer): Barcant (1970, no. 358)

A common species.

*Rekoa marius* (Lucas, 1857)

*Calycopis spurina* (Hewitson): Sheldon (1936, 1949), Barcant (1970, no. 323) [synonym]

*Thecla zebina* (Hewitson): Sheldon (1938, 1949), Barcant (1970, no. 370)

*Thecla spurina* Hewitson: Brush (1960)

*Rekoa marius* (Lucas): Robbins and Aiello (1982), Robbins (1991)

Charlotteville-Speyside Ridge: ♀ 15 May 1982 (M.J.W. Cock) [MJWC]; Crown Point: ♂ (small) 12 Sep 1982 (M.J.W. Cock) [MJWC]; Goodwood: 2♀ 16 May 1982 (M.J.W. Cock) [MJWC]; Roxborough: ♂, ♀ (F. d'A[badie]) [NHMUK]; Tobago: ♂ ii.1932 (A. Hall) [NHMUK]; Tobago ♀ (ex larva on flowers of *Gliricidia*) Feb 1955 (F.D. Bennett) [USNM]; ♀ (W.G. Sheldon) [NHMUK]; 2♀ 1977 (L.F. Wise) [CMZ, as *Thecla zebina*]

*Chlorostrymon simaethis* (Drury, 1773)

*Chalybs simaethis* (Drury): Sheldon (1936, 1949), Barcant (1970, no. 332)

Crown Point: ♀ 6–12 Mar 1979 (M.J.W. Cock) [MJWC]; Tobago: ?♀ (E. Bourke) [OMNH]

*Chlorostrymon telea* (Hewitson, 1868)

Identified by comparison with type (♂ Amazons) and NHMUK series. A new island record.

Crown Point: ♂ 16 May 1981 (M.J.W. Cock) [MJWC]

*Cyanophrys herodotus* (Fabricius, 1793)

*Chalybs herodotus* (Fabricius): Sheldon (1936, 1949), Barcant (1970, no. 329)

Crown Point: ♂ 16 May 1981 (M.J.W. Cock) [MJWC]; ♂ (Eupatorium flowers) 9 Jan 1982 (M.J.W. Cock) [MJWC, det. R.K. Robbins]; Tobago: 1♂ [NHMUK]

*Kisutam syllis* (Godman and Salvin, 1887)

*Thecla politus* (H. Druce): Longstaff (1908, 1912) [synonym]

*Thecla politis* [sic] (H. Druce): Sheldon (1936, 1949), Barcant (1970, p. 135)

Determined by comparison with the type (♂ Guatemala, NHMUK) and NHMUK series.

Crown Point: ♂, ♀ 16 May 1981 (M.J.W. Cock) [MJWC]

*Ziegleria hesperitis* (Butler and H. Druce, 1872)

*Calycopis hesperitis* (Butler and H. Druce): Sheldon (1936, 1949), Barcant (1970, no. 308)

I have seen no specimens. Sheldon's (1936) record is based on a W.J. Kaye capture which was not found in MGCL (C.V. Covell Jr., pers. comm.). However, since Kaye described *Tmolus perdincta* Kaye from Trinidad and subsequently recognised it as a synonym of *Z. hesperitis* (Kaye 1921), it seems unlikely that he would have been mistaken in this identification.

*Electrostrymon joya* (Dognin, 1895)

*Thecla nubes* (H. Druce): Druce (1907) TL, Longstaff (1908, 1912) [synonym]

*Calycopis cyphara canus* (H. Druce): Sheldon (1936, 1949) [*cyphara* is a misidentification; *canus* is a synonym]

*Calycopis cyphara nubes* (H. Druce): Barcant (1970, no. 319) [*cyphara* is a misidentification; *nubes* is a synonym]

*Calycopis sangala* (Hewitson): Sheldon (1936, 1938, 1949), Barcant (1970, no. 320) [probable misidentification]

*Strymon nubes* (Druce): D'Abrera (1995, p. 1237, ♀ UNS from Tobago)

A common species.

*Calycopis bactra* (Hewitson, 1877)

Identified by comparison with the type (♀ Nicaragua, NHMUK), Field's (1967) description, and plate and genitalia figures; however, the type may prove to be a different species (cf. discussion in Robbins et al. (2012)). New island record.

Charlotteville: ♀ 24 Oct 2015 (K. Sookdeo photo, Tobago Moths 4); Charlotteville-Speyside ridge: 2♂, 2♀ 15 May 1982 (M.J.W. Cock) [MJWC]

*Calycopis calus* (Godart, [1824])

*Calycopis calus* (Godart): Sheldon (1936, 1949), Barcant (1970, no. 327)

I have seen no recent specimens.

*Calycopis demonassa* (Hewitson, 1868)

New island record taken by J.P.W. Hall (pers. comm.) in 2005.

*Calycopis origo* (Godman and Salvin, 1887)

*Thecla beon* (Cramer): Longstaff (1908, 1912), Sheldon (1936, 1949) [misidentification]

*Calycopis beon* (Cramer): Barcant (1970, no. 305) [misidentification]

Longstaff's 2♂, 2♀ from Tobago in OMNH are *C. origo*. Identified through discussion with R.K. Robbins. A common species.

*Strymon astiocha* (Prittwitz, 1865)

*Callicista faunalis* [sic] (Hewitson): Sheldon (1936, 1949)

*Callicista faunalia* (Hewitson): Barcant (1970, no. 292) [synonym]

I have seen no recent specimens.

*Strymon bubastus* (Stoll, 1780)

*Callicista bubastus* (Stoll): Longstaff (1908, 1912), Sheldon (1936, 1949), Barcant (1970, no. 293)

*Thecla bubastus ponce* Comstock and Huntingdon: Brush (1960) [subspecies not recognised by Robbins (2004)]

A common species.

*Strymon megarus* (Godart, [1824])

*Tmolus basalides* [sic] (Geyer): Barcant (1970, no. 298) [*T. basilides* is a synonym]

Barcant (1970) lists this species from Tobago with no explanation. J.P.W. Hall (pers. comm.) took this species in 2005.

*Tmolus echion* (Linnaeus, 1767) complex

*Tmolus crolus* (Stoll): Sheldon (1936, 1938, 1949) [synonym]

*Tmolus echion* (Linnaeus): Sheldon (1938, 1949), Barcant (1970, no. 300)

This will probably prove to be a species complex in Trinidad and Tobago (and elsewhere). The female occurs in two forms in Tobago, one with an extensive white marginal area on the UPH, and the other with this area brown. A common 'species'.

*Ministrymon azia* (Hewitson, 1873)

Identified by comparison with the type (♂ Mexico) and NHMUK series. New island record. Also taken by J.P.W. Hall (pers. comm.) in 2005.

Crown Point: ♂, ♀ 9 Jan 1982; ♂ 12 Sep 1982 (M.J.W. Cock) [MJWC]

### Subfamily: Polyommatae

Nomenclature follows Cock and Robbins (2016), based on Lamas (2004c).

*Hemiargus hanno hanno* (Stoll, 1790)  
*Catochrysops hanno* (Stoll): Longstaff (1908, 1912)  
*Chilades hanno* (Stoll): Sheldon (1936, 1949)  
*Hemiargus hanno* (Stoll): Barcant (1970, no. 289)

A common species.

*Leptotes cassius cassius* (Cramer, 1775)  
*Syntarucoides cassius* (Cramer): Lamont (1917)  
*Leptotes (Tarucus) cassius* (Cramer): Longstaff (1908, 1912)  
*Leptotes cassius* (Cramer): Sheldon (1936, 1949), Barcant (1970, no. 290)  
*Leptotes cassino* [sic] *cassius* (Cramer): Brush (1960)

Lamont (1917) lists 2♂, 2♀, 'of the mainland form, in which white prevails over blue. Rather common along the coast; three specimens were small, but one female was larger than usual.' A common species.

### Family: Nymphalidae

Nomenclature follows Cock (2014a), which is based on Lamas et al. (2004).

### Subfamily: Danainae

#### Tribe: Danaini

*Danaus plexippus* (Linnaeus, 1758) *nigrippus* (Haensch, 1909)  
*Anosia archippus* (Fabricius): Longstaff (1908, 1912) [synonym]  
*Danais archippus* (Fabricius): Lamont (1917) [synonym]  
*Danaus plexippus* (Linnaeus): Sheldon (1936, 1938, 1949)  
*Danaus plexippus tobagi* A.H. Clark, **syn. nov.**: Clark (1941) TL, Brown and Heineman (1972), Ackery and Vane-Wright (1984)

*Danaus plexippus megalippe* (Hübner): Barcant (1970, no. 25) [different subspecies]  
 Clark (1941) considered *D. plexippus tobagi* to be restricted to Tobago, and differentiated it from other subspecies on the basis of the 'pale lavender-brown' ground colour of the wings. The type series was collected in July and August 1913 by N.A. Wood around Scarborough. The two specimens that I list below, one from about ten years before the type collection, and the other 70 years afterwards, are different in that the ground colour of the wings is indistinguishable from Trinidad specimens. The status of the Trinidad population is discussed in Cock (2014a), where it is referred to as *D. plexippus nigrippus* pending further clarification. Noting that material from both Trinidad and Tobago was included in the molecular study of Brower and Jeansonne (2004), there does not seem to be molecular support for a separate Tobago subspecies. Accordingly, I conclude that the population of *D. plexippus* on Tobago should be referred to the same subspecies as the population from Trinidad, i.e. *D. plexippus nigrippus*. Clark (1941) states that pale lavender-brown ground colour occurs as a rare aberration of *D. plexippus*. I suggest that the type series of *D. plexippus clarki* is not typical of the Tobago population, and represents an aberrant brood, or possibly discoloured specimens, and should therefore be treated as a **syn. nov.** of *D. plexippus nigrippus*.

Crown Point: ♂ 9 Jan 1982 (M.J.W. Cock) [MJWC]; Tobago: ♀ (E. Bourke) [OMNH]

*Danaus gilippus* (Cramer, 1775) *xanthippus* (C. Felder and R. Felder, 1860)

A new island record.

Tobago: 2♂, 2♀ 1977 (L.F. Wise) [CMZ]

#### Tribe: Ithomiini

*Ithomia agnosia* (Hewitson, [1855]) *pellucida* Weymer, 1875  
*Ithomia pellucida* Weymer: Longstaff (1908, 1912)  
*Ithomia drymo pellucida* Weymer: Sheldon (1936, 1938, 1949)  
*Ithomia pellucida pellucida* Weymer: Barcant (1970, no. 41)

No recent records. Only known from Tobago from one record, although this is the most common and widespread of the transparent Ithomiini of Trinidad (Barcant 1970).



Cocoa Wattie: about 1906 (G.H. Sworder) [OMNH, identified as *Ithomia pellucida* by W.J. Kaye 1907; presented by G.B. Longstaff]

*Pteronymia alissa* (Hewitson, 1869) *amandes* Kaye, 1921

*Pteronymia asopo* (C. Felder and R. Felder): Longstaff (1908, 1912), Sheldon (1936, 1949) [misidentification]

*Pteronymia amandes* Kaye: Barcant (1970, no. 40)

No recent records; only known from Tobago from one record. In Trinidad this species is found almost entirely on the ridge tops of the Northern Range at about 600m (author's unpublished observations). Cocoa Wattie: about 1906 (G.H. Sworder) [OMNH, identified as *Pteronymia asopo* by W.J. Kaye 1907; presented by G.B. Longstaff]

*Greta andromica* (Hewitson, [1855]) *trifenestra* R.M. Fox, 1941

*Gretna andromica* (Hewitson): Sheldon (1938, 1949)

*Hymenitis andromica* (Hewitson): Barcant (1970, no. 43)

No recent records; Sheldon (1938) records two separate captures of this species on the north coast and in the forest reserve, and there are three specimens in the NHMUK. In Trinidad this species is normally found above 1,000 ft. (300m) (Barcant 1970; author's observations).

Bloody Bay: ♂ iii.[19]37 (F. d'A[badie]) [NHMUK]; Hermitage: ♀ (no abdomen) 1.i.1937 [NHMUK]; Tobago: ♂ (very small) (F.W. Jackson) [NHMUK]

### Subfamily: Satyrinae

#### Tribe: Morphini

*Morpho helenor* (Cramer, 1776) *insularis* Fruhstorfer, 1912

*Morpho* sp.: Longstaff (1908, 1912)

*Morpho* sp. ?*achilles* (Linnaeus): Sheldon (1936, 1949) [sight record only]

*Morpho achilles tobagoensis* Sheldon: Sheldon (1938) TL [synonym]

*Morpho peleides insularis* Fruhstorfer: Barcant (1970, no. 130)

The type series of *M. achilles tobagoensis* is in the NHMUK. They are slightly smaller than Trinidad material. The male lacks the subapical pale spot and the dark margin of the UPF and UPH is narrower. The female has no blue coloration distal to the cell on the UPF. Recognition of *M. helenor tobagoensis* as a separate island subspecies may be justified when more material is available for comparison.

Tobago: 2♂, ♀ (W.G. Sheldon) [NHMUK]; Speyside: May 1982 (M.J.W. Cock, sight record).

#### Tribe: Brassolini

*Caligo brasiliensis* (C. Felder, [1863]) *minor* Kaye, 1904

*Caligo brasiliensis minor* Kaye: Sheldon (1936, 1949)

*Caligo eurilochus minor* Kaye: Barcant (1970, no. 135)

Tobago: 2♂, ♀ (W.G. Sheldon) [NHMUK]; ♀ 19 Jul 1964 (M. Barcant) [ABCT]

*Caligo teucer* (Linnaeus, 1758) *insulanus* Stichel, 1904

*Caligo teucer insulanus* Stichel: Barcant (1970, no. 136)

I have seen no Tobago specimens. Barcant (1970) lists this species from Tobago with no explanation. There is a specimen of *C. brasiliensis minor* in ABCT from Tobago, but none of *C. teucer insulanus*. It seems quite likely that *C. teucer insulanus* is a Tobago species, but confirmation would be desirable.

#### Tribe: Satyrini

*Cissia myncea* (Cramer, 1780) *isolata* (Kaye, 1921)

*Euptychia myncea isolata* (Kaye): Sheldon (1936, 1949)

*Euptychia myncea* (Cramer): Barcant (1970, no. 10)

Arnos Vale: 2♀ 30 Sep 2012 (J. Morrall) [JMO, not seen]; Rockley Bay: ♂ 10 Sep 2002 (J. Morrall) [JMO, not seen]; Tobago: 2?♂ Feb 1932 (A. Hall) [NHMUK]; 2?♂ (W.G. Sheldon) [NHMUK]

*Cissia palladia* (Butler, 1867)

New island record based on a photograph by Kris Sookdeo (Fig. 1C).  
Charlotteville: ? 24 Oct 2015 (K. Sookdeo photo)

*Cissia terrestris* (Butler, 1867)

*Euptychia terrestris* Butler: Sheldon (1936, 1949), Barcant (1970, no. 12)  
Sheldon (1936) refers to this species being recorded from Tobago by Sir Norman Lamont. However, Lamont (1917) does not include this species in his treatment on the butterflies of Tobago, and I have seen no specimens. This may be an error or a personal communication from Lamont, and so needs confirmation

*Cissia themis* (Butler, 1867)

*Euptychia similis* Butler: Sheldon (1936, 1949), Barcant (1970, p. 135) [assumed misidentification]  
Crown Point: ♂ 9 Jan 1981 (M.J.W. Cock) [MJWC], ♀ 16 May 1981 (M.J.W. Cock) [MJWC]; Rockley Bay: ♂, ♀ 10 Sep 2002 (J. Morrall) [JMO, photo], ♂, ♀ 30 Sep 2004 (J. Morrall) [JMO, photo]

*Hermeuptychia hermes* (Fabricius, 1775)

*Euptychia hermes* (Fabricius): Longstaff (1908, 1912), Lamont (1917), Sheldon (1936, 1949), Barcant (1970, no. 17)  
Charlotteville: ? at *Bidens pilosa* flowers, 24 Oct 2015 (K. Sookdeo photo, Tobago Moths 1); Main ridge: ♂ 18 May 1981 (M.J.W. Cock) [MJWC]; Tobago: ? (E. Bourke) [OMNH]

*Magneuptychia lea* (Cramer, 1777)

*Euptychia junia* (Cramer): Sheldon (1936, 1949), Barcant (1970, no. 21) [synonym]  
Sheldon (1936) saw specimens in F. d'Abadie's collection. It is a distinctive species, so it is unlikely that Sheldon was in error.

*Magneuptychia libye* (Linnaeus, 1767)

*Euptychia libye* (Linnaeus): Sheldon (1936, 1949), Barcant (1970, no. 22)  
Charlotteville: ? 24 Oct 2015 (K. Sookdeo photo, Tobago Moths 1); Englishman's Bay: ?♂ late 2010–early 2011 (J. Ingraham) [M. Kelly photo 10956, 10959]; Near Speyside: ♂ (fruit trap) 17 May 1982 (M.J.W. Cock) [MJWC]; Tobago: 2? (E. Bourke) [OMNH]

*Pareuptychia ocirrhoe ocirrhoe* (Fabricius, 1776)

*Euptychia hesione* (Sulzer): Longstaff (1908, 1912), Lamont (1917), Sheldon (1936, 1949), Barcant (1970, no. 8) [synonym]  
*Pareuptychia ocirrhoe ocirrhoe* (Fabricius): Cock (2014a)  
As discussed in Cock (2014a), the Tobago subspecies of *P. ocirrhoe* is the nominate continental subspecies, whereas in Trinidad there is a distinct unnamed subspecies. However, in the last twenty years or so, the nominate subspecies has also been collected in Trinidad, so it is not included in List F here. Arnos Vale: 2♂ Sep 2011 (J. Morrall) [JMO]; Goodwood: ♂, ♀ Feb 2013 (S. Alston-Smith) [MJWC]; Speyside: ♂ Feb 1932 (A. Hall) [NHMUK]; Tobago: ♀, ? (E. Bourke) [OMNH]; ♀ (W.G. Sheldon) [NHMUK]

*Taygetis echo* (Cramer, 1775) n. ssp. L.D. Miller MS (in Lamas et al. 2004)

*Taygetis echo velutina* Staudinger: Sheldon (1936, 1949) [different subspecies]  
*Taygetis echo* (Cramer): Barcant (1970, no. 4)

*Taygetis echo* (Cramer, 1775) n. ssp. L.D. Miller MS: Cock (2014a)

The Tobago population does not seem to differ from that of Trinidad, which was designated an undescribed subspecies by the late L.D. Miller (in Lamas et al. 2004).  
Englishman's Bay: 3♀ late 2010–early 2011 (J. Ingraham) [M. Kelly photo 10938–42]; Tobago: 2♂ (W.G. Sheldon) [NHMUK]

*Taygetis laches* (Fabricius, 1793)

*Taygetis andromeda* (Cramer): Sheldon (1936, 1949), Barcant (1970, no. 6) [preoccupied name]

Sheldon (1936) records capturing two specimens, but these have not been located in the NHMUK, and I have seen no specimens. There is no reason to doubt this record (see also Note 29 in Cock (2014a)).

### Subfamily: Charaxinae

#### Tribe: Preponini

*Archaeoprepona demophoon* (Hübner, [1814]) *andicola* (Fruhstorfer, 1904)

*Prepona antimache* (Hübner): Sheldon (1936, 1949), Barcant (1970, no. 127) [misidentification of subspecies]

A sight record by P.L. Guppy in Sheldon (1936). Confirmation would be desirable.

*Prepona laertes* (Hübner, [1811]) complex

*Prepona laertes demodice* (Godart): Sheldon (1936, 1949), Barcant (1970, no. 129) [valid ssp. in Lamas et al. (2004)]

See discussion in Cock (2014a) regarding taxonomic uncertainty regarding this species complex. Only two females have been recorded from Tobago (Sheldon 1936), so males will be needed to clarify which of the two (or more) Trinidad species are present.

### Subfamily: Biblidinae

#### Tribe: Cyrestini

*Marpesia petreus petreus* (Cramer, 1776)

*Megalura peleus* (Sulzer): Sheldon (1938, 1949) [preoccupied name]

*Marpesia petreus* (Cramer): Barcant (1970, no. 95)

I have seen no recent records, nor located the specimen captured at Roxborough by F. d'Abadie (Sheldon 1938). It may be a migrant in Tobago rather than resident.

#### Tribe: Biblidini

*Biblis hyperia hyperia* (Cramer, 1779)

*Didonis biblis* (Fabricius): Sheldon (1936, 1949) [preoccupied name]

*Biblis hyperia* (Cramer): Barcant (1970, no. 80), Plester (1994)

Arnos Vale: ♂ 30 Sep 2012 (J. Morrall) [JMO]; Rockley Bay: ♂ 10 Sep 2002 (J. Morrall) [JMO]; Speyside: ? Feb 1932 (A. Hall) [BMB]

*Mestra hersilia hersilia* (Fabricius, 1776)

*Cystineura cana* (Erichson): Longstaff (1908, 1912), Lamont (1917), Sheldon (1936, 1949) [synonym]

*Cystineura* sp.: Brush (1960)

*Mestra hypermestra cana* (Erichson): Barcant (1970, no. 79) [synonym]

*Mestra cana* (Erichson): Plester (1994)

*Mestra hypermestra* Hübner: Kelly (2014) [different ssp.]

Charlotteville-Speyside ridge: ♂, ♀ 15 May 1982 (M.J.W. Cock) [MJWC]; Crown Point: ♂ May 1981 (M.J.W. Cock) [MJWC]; Tobago: 2♂, ♀ (E. Bourke) [OMNH]; 4♂ 1977 (L.F. Wise) [CMZ; see Kelly (2014), p. 105]

*Hamadryas februa* (Hübner, [1823]) *ferentina* (Godart, [1824])

This species was included on the basis of a photograph taken by Marcie Connelly-Lynn, 27–28 July 2002, almost certainly on Arnos Vale Rd. near Plymouth (Fig. 1D). The record was confirmed in June 2016, when John Morrall found several individuals at Rockley Bay. It may be that the species was overlooked for a century, but it seems more likely that this is a new colonist for Tobago.

*Dynamine postverta postverta* (Cramer, 1779)

*Dynamine mylitta* (Cramer): Lamont (1917), Sheldon (1936, 1949), Barcant (1970, no. 78)

Crown Point: ♂ May 1981 (M.J.W. Cock) [MJWC]

*Dynamine theseus* (C. Felder and R. Felder, 1861)

*Dynamine theseus* (C. Felder and R. Felder): Longstaff (1908, 1912), Lamont (1917), Sheldon (1936, 1949), Barcant (1970, no. 73), Hancock (1995), Springer (2002)

A common species.

### Subfamily: Nymphalinae

#### Tribe: Coeini

*Historis odius* (Fabricius, 1775) *dious* Lamas, 1995

*Aganisthos odius* (Fabricius): Sheldon (1936, 1949)

*Historis odius orion* (Fabricius): Barcant (1970, no. 124) [preoccupied name]

*Historis orion* (Fabricius): Plester (1994) [preoccupied name]

I have seen no specimens. However, this species is found in Trinidad (Barcant 1970) and the Lesser Antilles including Grenada (Smith et al. 1994), so it can be expected to be a Tobago resident.

#### Tribe: Nymphalini

*Vanessa cardui* (Linnaeus, 1758)

*Vanessa cardui* (Linnaeus): Sheldon (1936, 1949), Barcant (1970, no. 94)

I have seen no recent records, nor located the specimen collected at Roxborough by F. d'Abadie (Sheldon 1936), but this vagile species is expected to be found in Tobago, although it may not be resident.

#### Tribe: Kallimini

*Anartia amathea* (Linnaeus, 1758)

*Anartia amathea* [sic] (Linnaeus): Longstaff (1908, 1912), Sheldon (1936, 1949)

*Anartia amathea* (Linnaeus): Barcant (1970, no. 63)

Cock (2014a, note 50) explains why subspecies have not been applied to the Trinidad and Tobago populations of this species. The Tobago female seems to be more red than is typically the case for the Trinidad female, but more material should be examined.

Charlotteville-Speyside ridge: ♀ 15 May 1982 (M.J.W. Cock) [MJWC]; Crown Point: ♂ 9 Jan 1982 (M.J.W. Cock) [MJWC]

*Anartia jatrophae jatrophae* (Linnaeus, 1763)

*Anartia jatrophae* [sic] (Linnaeus): Lamont (1917), Barcant (1970, no. 62)

*Anartia jatrophae* (Linnaeus): Longstaff (1908, 1912), Sheldon (1936, 1938, 1949)

A common species.

*Hypolimnias misippus* (Linnaeus, 1764)

*Hypolimnias misippus* (Linnaeus): Barcant (1970, no. 61)

Barcant (1970) records this species from Tobago without comment. There are no specimens in ABCT or any other collections examined, but there seems no reason to doubt that this vagile species occurs on the island.

*Junonia zonalis* C. Felder and R. Felder, 1867

*Precis lavinia* (Cramer) f. *zonalis* (C. Felder and R. Felder): Longstaff (1908, 1912) [probably mixed with next species]

*Precis genoveva* (Cramer): Sheldon (1936, 1949) [probably mixed with next species]

*Precis lavinia zonatis* [sic] (C. Felder and R. Felder): Barcant (1970, no. 67) [mixed with next species]

The two species of *Junonia* have previously been confused as one (Cock 2014a and references therein), but both occur in Tobago. I have not examined historical material, but J. Morrall has recent specimens of both from Tobago.

Speyside: ♂, ♀ 11 Jun 2010 (J. Morrall) [JMO, photo]

*Junonia genoveva genoveva* (Cramer, 1780)

*Junonia genoveva* (Cramer): Lamont (1917)

*Precis genoveva* (Cramer): Sheldon (1936, 1949) [probably mixed with previous species]

*Precis lavinia zonatis* [sic] (C. Felder and R. Felder): Barcant (1970, no. 67) [probably mixed with previous species]

See comments under previous species.

Crown Point: ♀ 9 Jan 1982 (M.J.W. Cock) [MJWC], ♂, ♀ 12 Sep 1982 (M.J.W. Cock) [MJWC]; Rockley Bay: ♀ 10 Jun 2002 (J. Morrall) [JMO, photo], ♂, ♀ 10 Sep 2002 (J. Morrall) [JMO]; Speyside ♂ 8 Oct 2004 (J. Morrall) [JMO, photo]

### Subfamily: Heliconiinae

#### Tribe: Heliconiini

*Agraulis vanillae vanillae* (Linnaeus, 1758)

*Dione vanillae* (Linnaeus): Lamont (1917), Sheldon (1936, 1949)

*Agraulis vanillae* (Linnaeus): Barcant (1970, no. 57)

Bloody Bay: 2♂ 10 Oct 2008 (J. Morrall) [JMO, not seen]; Speyside: ♀ 04 Jun 1999 (J. Morrall) [JMO, not seen], 6♂ 6 Sep 2005 (J. Morrall) [JMO, not seen]

*Dryas iulia* (Fabricius, 1775) *alcionea* (Cramer, 1779)

*Colaenis julia* [sic] (Fabricius): Sheldon (1936, 1949)

*Colaenis iulia* (Fabricius): Barcant (1970, no. 55)

*Dryas iulia alcionea* (Cramer): Clench (1975)

I have seen no recent specimens.

Tobago: ♂, ♀ (W.G. Sheldon) [NHMUK]; ♀ 1–4 Feb 1931 (Capt. A.K. Totton) [NHMUK]

*Eueides aliphera aliphera* (Godart, 1819)

*Eueides aliphera* (Godart): Lamont (1917), Sheldon (1936, 1949)

*Heliconius aliphera* (Godart): Barcant (1970, no. 53)

I have seen no recent specimens.

Tobago: ♂ (W.G. Sheldon) [NHMUK]; ♂ (F.W. Jackson) [NHMUK]; ♂ Feb 1932 (A. Hall) [NHMUK]

*Heliconius erato* (Linnaeus, 1758) *tobagoensis* Barcant, 1982

*Heliconius hydara* Hewitson: Longstaff (1908) [different subspecies]

*Heliconius hydarus hydarus* [sic] Hewitson: Longstaff (1912), Guppy (1933) [different subspecies]

*Heliconius erato hydara* Hewitson: Sheldon (1936, 1949) [different subspecies]

*Heliconius erato* (Linnaeus): Barcant (1970, no. 49)

*Heliconius erato tobagoensis* Barcant: Barcant (1982) TL

Barcant (1982) lists a long type series from King's Bay, Plymouth, Scarborough, Speyside and Tobago without locality in ABCT, BMB, NHMUK, AME (now in MGCL), etc.

Arnos Vale: ♂ 30 Sep 2012 (J. Morrall) [JMO, not seen], ♂, ♀ 18 Sep 2011; Rockley Bay: 5♂ 10 Sep 2002 (J. Morrall) [JMO, not seen], ♂, ♀ 10 Oct 2014 (J. Morrall) [JMO, not seen]

*Heliconius melpomene* (Linnaeus, 1758) *tessa* Barcant, 1982

*Heliconius melpomene euryades* Riffarth: Sheldon (1936, 1949) [different subspecies]

*Heliconius melpomene* (Linnaeus): Barcant (1970, no. 48), Plester (1994)

*Heliconius melpomene tessa* Barcant: Barcant (1982) TL

Barcant (1982) lists the type series from Bacolet, Plymouth, Speyside and Tobago without locality in BMB, AME (now in MGCL), etc.

Arnos Vale: 2♂ 18 Sep 2011 (J. Morrall) [JMO, not seen]; Rockley Bay: 2♂, ♀ 10 Oct 2014 (J. Morrall) [JMO, not seen]

### List B. Species in List A for which there are no recent records

The species listed here have not been recorded since Sheldon (1936, 1938) – some may be errors of identification or location, some may have been overlooked in the last 80 years, and others may have gone extinct.

**Family: Papilionidae**

*Heracles androgeus androgeus* (Cramer, 1775)

**Family: Hesperidae****Subfamily: Eudaminae**

*Phanus marshalli* (Kirby, 1880)

*Proteides mercurius mercurius* (Fabricius, 1787)

*Polythrix octomaculata* (Sepp, [1844])

*Urbanus belli* (Hayward, 1935)

*Urbanus esmeraldus* (Butler, 1877)

*Urbanus teleus* (Hübner, 1821)

*Thessia atthesis* (Hewitson 1867)

**Subfamily: Pyrginae**

*Celaenorrhinus eligius eligius* (Stoll, 1781)

*Nisoniades bessus* (Möschler, 1877)

*Gorgythion beggina* Mabille, 1898 *escalophoides* (Hayward, 1941)

*Helias phalaenoides phalaenoides* Fabricius, 1807

**Subfamily: Hesperinae**

*Talides sergestus* (Cramer, 1775)

*Carystus phorcus phorcus* (Cramer, 1777)

*Calpodes ethlius* (Stoll, 1782)

*Saliana esperi esperi* Evans, 1955

*Anthoptus maracanae* (Bell, 1934)

*Thargella caura caura* (Plötz, 1882)

*Vehilius stictomenes stictomenes* (Butler, 1877)

*Nisoniades xanthaphes* Hübner, [1821]

*Rhinthon osca* (Plötz, 1882)

*Pompeius pompeius* (Latreille, [1824])

*Euphyes peneia* (Godman, 1900)

*Cynea diluta* (Herrich-Schäffer, 1869)

*Vacerra bonfilius* (Latreille, [1824]) *litana* (Hewitson, 1866)

**Family: Pieridae****Subfamily: Coliadinae**

*Anteos maerula* (Fabricius, 1775)

*Phoebis philea philea* (Linnaeus, 1763)

**Subfamily: Pierinae**

*Glutophrissa drusilla drusilla* (Cramer, 1777)

**Family: Riodinidae****Subfamily: Riodininae**

*Melanis smithiae* (Westwood, 1851) *xarifa* (Hewitson, [1853])

*Anteros formosus* (Cramer, 1777)

*Emesis brimo brimo* Godman and Salvin, 1889

**Family: Lycaenidae****Subfamily: Theclinae**

*Ziegleria hesperitis* (Butler and H. Druce, 1872)

*Calycopis calus* (Godart, [1824])

*Strymon astiocha* (Prittwitz, 1865)

**Family: Nymphalidae****Subfamily: Danainae**

*Ithomia agnosia* (Hewitson, [1855]) *pellucida* Weymer, 1875

*Pteronymia alissa* (Hewitson, 1869) *amandes* Kaye, 1921

*Greta andromica* (Hewitson, [1855]) *trifenestra* R.M. Fox, 1941

**Subfamily: Satyrinae**

*Caligo teucer* (Linnaeus, 1758) *insulanus* Stichel, 1904

*Cissia terrestris* (Butler, 1867)

*Magneptychia lea* (Cramer, 1777)

*Taygetis laches* (Fabricius, 1793)

**Subfamily: Charaxinae**

*Archaeoprepona demophoon* (Hübner, [1814]) *andicola* (Fruhstorfer, 1904)

*Prepona laertes* (Hübner, [1811]) complex

**Subfamily: Biblidinae**

*Marpesia petreus petreus* (Cramer, 1776)

**Subfamily: Nymphalinae**

*Historis odius* (Fabricius, 1775) *dious* Lamas, 1995

*Vanessa cardui* (Linnaeus, 1758)

**Subfamily: Heliconiinae**

*Dryas iulia* (Fabricius, 1775) *alcionea* (Cramer, 1779)

*Eueides aliphera aliphera* (Godart, 1819)

**List C. Species needing confirmation from Tobago****Family: Hesperidae****Subfamily: Pyrginae**

*Nisoniades macarius* (Herrich-Schäffer, 1870)

*Pellicia macareus* [sic] Herrich-Schäffer: Barcant (1970, no. 461)

*Nisoniades macarius* (Herrich-Schäffer): Cock (1982), Cock (1991)

Evans (1953) lists a female of this species from Tobago in the NHMUK, but I have been unable to locate this specimen (Cock 1991). This is a rare and localised species in Trinidad, so is unlikely to be found in Tobago, and is discounted pending verification.

*Nisoniades bessus* (Möschler, 1877)

*Pellicia bessus* Möschler: Sheldon (1936, 1949), Barcant (1970, no. 463)

*Nisoniades bessus* (Möschler): Cock (1991)

Sheldon (1936) records this species based on a specimen captured at Bacolet by W.J. Kaye. Neither this specimen nor any other *Nisoniades* or *Pellicia* spp. from Tobago could be located from Kaye's collection in the MGCL (C.V. Covell Jr., pers. comm.), and I have seen no specimens from Tobago. Given that this genus was confused in collections until Evans (1953) sorted the NHMUK collection, it seems rather likely that Kaye's identification was an error.

**Subfamily: Hesperinae**

*Methionopsis ina* (Plötz, 1882)

This new island record is included in List A above based on careful examination of photographs of two female specimens and comparison with the other small brown skippers known from Trinidad (Cock 2013). This is a common species in Trinidad, but confirmation from Tobago, based on dissection of a male, is desirable.

**Family: Nymphalidae****Subfamily: Satyrinae**

*Caligo teucer* (Linnaeus, 1758) *insulanus* Stichel, 1904

I have seen no Tobago specimens. Barcant (1970) lists this species from Tobago with no explanation. There is a specimen of *C. brasiliensis minor* in the ABCT from Tobago, but none of *C. teucer insulanus*, so an error is possible. It seems quite likely that *C. teucer insulanus* is a Tobago species, but confirmation would be desirable.

*Cissia terrestris* (Butler, 1867)

*Euptychia terrestris* Butler: Sheldon (1936, 1949), Barcant (1970, no. 12)

Sheldon (1936) refers to this species being recorded from Tobago by Sir Norman Lamont. However, Lamont (1917) does not include this species in his treatment on the butterflies of Tobago, and I have seen no specimens. This may be an error or a personal communication from Lamont, and so needs confirmation

**List D. Species not accepted from Tobago****Family: Hesperidae****Subfamily: Eudaminae**

*Proteides mercurius angasi* Godman and Salvin, 1884

Evans (1952) records a specimen from Tobago, but Cock (1986, 2002) argues that this specimen was mislabelled, and this subspecies does not occur on Tobago.

*Epargyreus zestos* (Geyer, 1832)

Recorded from Tobago, but not from Trinidad; the single specimen from Tobago is probably mislabelled in the same way as that of *Proteides mercurius angasi* (Cock 1986).

**Subfamily: Hesperinae**

*Synapte silius* (Latreille, [1824])

*Cymaenes silius* (Latreille): Longstaff (1908, 1912), Sheldon (1936, 1949)

The record of *S. silius* from Tobago is based on a specimen captured at Cocoa Wattie in April 1907 by G.B. Longstaff (1908). This specimen is in the OMNH; it was identified as *C. silius* by H.H. Druce and as *C. pericles* by W.J. Kaye. The abdomen is missing, but it is a typical specimen of *Synapte malitiosa pericles*.

*Parphorus decora* (Herrich-Schäffer, 1869)

*Parphorus decora* (Herrich-Schäffer): Evans (1955), Cock (1982, no. 170), Cock (2011)

Evans (1955) listed a specimen of *Callimormus juvenis* from Tobago as *P. decora* in error (Cock 2011).

*Talides sinois* Hübner, [1819]

*Talides sinon* (Stoll, 1781): Sheldon (1938, 1949), Barcant (1970, p. 135) [preoccupied name; synonym of *T. sinois*]

*Talides sinois sinois* Hübner: Cock (1982, no. 203)

Cock (2005) documented that this record is almost certainly a misidentification of *T. sergestus*.

*Mnasitheus simplicissima* (Herrich-Schäffer, 1870)

*Mnasitheus simplicissima* (Herrich-Schäffer): Sheldon (1936, 1949) [misidentification]

*Mnasitheus simplicissimus* [sic] (Herrich-Schäffer): Barcant (1970, no. 555) [misidentification]

*Anthoptus insignis* (Plötz): Cock (2010), Cock (2013)

Misidentification of *Anthoptus insignis* (Cock 2010, 2013).



*Eprius veleda veleda* (Godman, 1901)

*Epeus veleda* (Godman): Longstaff (1908, 1912), Sheldon (1936, 1949) [*Epeus* is an unavailable homonym]

*Epius* [sic] *veleda* (Godman): Barcant (1970, no. 585)

*Eprius* [sic] *velada velada* (Godman): Cock (1982, no. 147)

Misidentification of *Anthoptus insignis* (Cock 2013).

*Lerema accius* (J.E. Smith, 1797)

*Lerodea phocilides* [sic] (Plötz): Sheldon (1938, 1949), Barcant (1970, p. 135) [a synonym of *Lerema accius* (J.E. Smith); probable misidentification of *Cymaenes tripunctus theogenis*, see Cock (2012)]

*Lerema parumpunctata* (Herrich-Schäffer): Sheldon (1938, 1949) [synonym of *Lerema accius*; probable misidentification, see Cock (2012)]

*Lerema parum punctata* [sic] (Herrich-Schäffer): Barcant (1970, p. 135)

Sheldon (1938) records *Lerodea phocilides* from Tobago based on a specimen collected at Roxborough by F. d'Abadie. This is a misspelling of *phocylides*, which is a synonym of *Lerema accius*, a species from the USA and Central America (Evans 1955). Sheldon (1938) also records *L. parumpunctata* (Herrich-Schäffer), another synonym of *L. accius*, from a single specimen, which he captured at Scarborough. I have not located either of these specimens, and have suggested that both names are probably misidentifications of the rather similar and variable *Cymaenes tripunctus theogenis* (Cock 2012).

*Panoquina ocola ocola* (W.H. Edwards, 1863)

*Prenes ocola* (W.H. Edwards): Sheldon (1936, 1949), Barcant (1970, no. 509)

*Panoquina ocola* (W.H. Edwards): Cock (1982, no. 246)

*Panoquina ocola ocola* (W.H. Edwards): Cock (2003)

I have not located the A. Hall specimen on which this record is based (Sheldon 1936) in either the NHMUK or BMB. Given that there had been significant confusion amongst collectors over the *Panoquina* spp. prior to Evans' (1955) treatment, I considered that this species needed confirmation from Tobago (Cock 2003). Since no specimens have since come to light, I remove it from the Tobago list, whilst recognising that it is a species that may yet be found.

## Family: Pieridae

### Subfamily: Coliadinae

*Aphrissa statira statira* (Cramer, 1777)

*Catopsilia statira* (Cramer): Sheldon (1936, 1949)

*Phoebis statira* (Cramer): Barcant (1970, no. 161)

I have seen no specimens. Sheldon (1936) attributes this record to A. Hall at Speyside, but Hall's unpublished journal only refers to a possible sighting. Accordingly, I do not accept this record.

*Pyrisitia proterpia* (Fabricius, 1775)

*Eurema proterpia* (Fabricius): Barcant (1970, no. 168)

I have seen no specimens. Barcant (1970) records this species from Tobago with no explanation, and there is no Tobago material in the ABCT. Given that Barcant hadn't seen this species in Trinidad since the 1920s, it seems unlikely that he would record it from Tobago without comment. Accordingly, this record is discounted.

## Family: Riodinidae

### Tribe: Incertae Sedis

*Emesis cereus cereus* (Linnaeus, 1767)

*Emesis coeneus* [sic] (Linnaeus): Lamont (1917) [a preoccupied name]

*Emesis caeneos* [sic] (Linnaeus): Sheldon (1936, 1949) [a preoccupied name]

*Emesis caeneus* (Linnaeus): Barcant (1970, no. 231) [preoccupied name]

I have not seen any specimens. This name was misapplied to *Calephelis laverna* (see discussion under that name).

**List E. Species which might occur in Tobago, but haven't been recorded****Family: Hesperidae****Subfamily: Eudaminae**

*Polygonus savigny savigny* (Latreille, [1824])

This species is found in Trinidad (Cock 2014b) and the Lesser Antilles at least as far south as St. Lucia (Smith et al. 1994), so it could well occur in Tobago.

*Astraptes talus* (Cramer, 1777)

This species is found in Trinidad (Cock 2014b) and the Lesser Antilles at least as close as St. Vincent (Smith et al. 1994), so it might be expected in Tobago.

*Astraptes anaphus* (Cramer, 1777)

This species occurs as two subspecies in Trinidad, *A. anaphus annetta* Evans and *A. anaphus anoma* Evans (Cock 2014b, 2015), and as *A. anaphus anausis* (Godman and Salvin) in the Lesser Antilles as far south as Grenada (Smith et al. 1994), so it can be expected in Tobago.

**Subfamily: Pyrginae**

*Chiomara asychis* (Stoll, 1780)

This species occurs as *C. asychis simon* Evans in Trinidad (Cock 2014b), as *C. asychis grenada* Evans in St. Lucia, the Grenadines and Grenada, and as subspecies *C. asychis vincenta* Evans in St. Vincent (Smith et al. 1994). It seems likely that it will also be found on Tobago.

**Family: Pieridae****Subfamily: Coliadinae**

*Rhabdodryas trite trite* (Linnaeus, 1758)

This species is known from Trinidad (Barcant 1970) and the Lesser Antilles (Smith et al. 1994), so could well occur in Tobago.

**Subfamily: Pierinae**

*Ganyra josephina* (Godart, 1819) *janeta* (Dixey, 1915)

This species is associated with coastal habitats, where the food plants are trees of the genus *Capparis* (Capparaceae). It is found in the dry northwest of Trinidad (Cock 1984a; Morrall 2016) and has been reported from the Lesser Antilles (Smith et al. 1994), so it could also occur in Tobago.

**List F. Species and subspecies recorded from Tobago, but not from Trinidad****Family: Hesperidae**

*Mysoria barcastus* (Sepp, [1851]) *venezuelae* (Scudder, 1872)

This is the mainland subspecies that is not found in Trinidad, where it is replaced by *M. barcastus alta* Evans (Evans 1951; Cock 1981; Cock 2014b).

*Ouleus fridericus* (Geyer, 1832) *sheldoni* **ssp. nov.**

*Ouleus fridericus sheldoni* is described from Tobago above and differentiated from *O. fridericus sine-punctis* from Trinidad.

*Callimormus juvenus* Scudder, 1872

It seems unlikely that this species has been overlooked in Trinidad, but it may be very localised or rare.

**Family: Pieridae**

*Phoebis agarithe* (Boisduval, 1836)

Cock (2014a) did not know this species from Trinidad. However, while preparing the present list, the possibility that *P. agarithe* might also occur in Trinidad was considered. As a result, existing specimens of *P. agarithe* from Trinidad were located in the ABCT as will be reported elsewhere.

**Discussion**

There are now 150 species of butterfly recorded from Tobago (List A), compared to 124 recorded by Sheldon (1936, 1938), although five of these need confirmation (List C) and eight are not accepted (List D). This compares with approximately 765 butterfly species known from Trinidad (Cock 2014a), and represents about 16% of the Trinidad butterfly fauna. However, the Trinidad butterfly fauna is much better known, collected and documented. For example, of the 130 Trinidad Lycaenidae, only two have not been collected in the last 30–35 years (Cock and Robbins 2016). In contrast, a remarkable 33% (49 species, List B) of Tobago butterflies have not been documented since Sheldon (1938). While it is possible that some of these are not resident or have become extinct, it seems more likely that most have simply not been found in the last 80 years.

Of Sheldon's 124 species records, eight are not accepted here (List D), so that the number of new records since Sheldon's work is greater than the difference between the two lists. These new records include some species previously misidentified, but are mostly new captures. Given the relatively small amount of collecting in the last 80 years, the implication is that there are likely to be a quite a number of species yet to be recorded from the island. Some of these should be included in List E of species known from Trinidad and the Lesser Antilles. Only one species (*Callimormus juvenus*) and two subspecies recorded from Tobago represent mainland taxa not known from Trinidad (List F).

It seems clear that the butterfly fauna of Tobago merits further study, in particular with regard to the 49 species that have not been recorded for 80 years. Year-round fieldwork in different habitats and areas, using a variety of techniques, will surely fill in many of the current gaps in our knowledge.

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## Literature Cited

- Ackery, P. R., and R. I. Vane-Wright. 1984.** Milkweed butterflies their cladistics and biology. British Museum (Natural History); London, UK. i–ix, 425 p.
- Barcant, M. 1970.** Butterflies of Trinidad and Tobago. Collins; London, UK. 314 p.
- Barcant, M. 1982.** Two new subspecies of Heliconiinae (Lepidoptera: Nymphalidae) from Tobago, West Indies. Bulletin of the Allyn Museum 68: 1–5.
- Brower, A. V. Z., and M. M. Jeansonne. 2004.** Geographical populations and “subspecies” of New World monarch butterflies (Nymphalidae) share a recent origin and are not phylogenetically distinct. Annals of the Entomological Society of America 97: 519–523.
- Brown, F. M., and B. Heineman. 1972.** Jamaica and its Butterflies. E.W. Classey; London, UK. i–xv, 476 p.
- Brush, R. 1960.** Collecting diurnal Lepidoptera in the Lesser Antilles. Journal of the New York Entomological Society 68: 101–102.
- Burns, J. M., D. H. Janzen, M. Hajibabaei, W. Hallwachs, and P. D. N. Hebert. 2008.** DNA barcodes and cryptic species of skipper butterflies in the genus *Perichares* in Area de Conservación Guanacaste, Costa Rica. Proceedings of the National Academy of Sciences of the United States of America 105: 6350–6355.
- Callaghan, C. J., and Lamas, G. 2004.** 99. Riodinidae. p. 141–170. *In*: G. Lamas. (ed.). Checklist: Part 4A Hesperioidea – Papilionoidea. Atlas of Neotropical Lepidoptera. Scientific Publishers; Gainesville, Florida, USA. 439 p.
- Clark, A. H. 1941.** Notes on some North and Middle American danaid butterflies. Proceedings of the United States National Museum 90: 531–542, pl. 71–74.
- Clench, H. K. 1975.** Systematic notes on *Dryas iulia* (Heliconiidae). Journal of the Lepidopterists’ Society 29: 230–235.
- Cock, M. J. W. 1982a.** The skipper butterflies (Hesperiidae) of Trinidad. Part I. Introduction and Pyrrhopyginae. Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1981–1982: 52–56.
- Cock, M. J. W. 1982b.** The skipper butterflies (Hesperiidae) of Trinidad. Part II. A systematic list of the Trinidad and Tobago Hesperidae. Occasional Papers, Department of Zoology, UWI, St. Augustine, Trinidad 5: 1–49.
- Cock, M. J. W. 1984a.** Lepidoptera Notes I–VI. Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1983–1984: 35–37.
- Cock, M. J. W. 1984b.** The skipper butterflies (Hesperiidae) of Trinidad Part 3 Pyrginae (first section). Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1983–1984: 38–42.
- Cock, M. J. W. 1986.** The skipper butterflies (Hesperiidae) of Trinidad Part 4 Pyrginae (second section). Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1985–1986: 33–47.
- Cock, M. J. W. 1988.** The skipper butterflies (Hesperiidae) of Trinidad Part 5 Pyrginae genera group C concluded. Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1987–1988: 24–31.
- Cock, M. J. W. 1991.** The skipper butterflies (Hesperiidae) of Trinidad. Part 7, genera group E (first section). Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1990–1991: 46–56.
- Cock, M. J. W. 1996.** The skipper butterflies (Hesperiidae) of Trinidad. Part 8, Genera group E (second section). Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1995–1996: 27–37.
- Cock, M. J. W. 1998.** The skipper butterflies (Hesperiidae) of Trinidad. Part 9, Genera group E concluded (third section) with a description of a new species of *Clito*. Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1997–1998: 33–45.
- Cock, M. J. W. 2000.** The skipper butterflies (Hesperiidae) of Trinidad. Part 10, Pyrginae completed; genera groups F and G. Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 1999–2000: 49–71.
- Cock, M. J. W. 2002.** *Proteides mercurius grenadensis* Pinchon & Enrico (Hesperiidae) in Grenada, with notes on *Nyctelius nyctelius* Latreille (Hesperiidae) and other Lepidoptera observed, October 1995. Living World, Journal of the Trinidad and Tobago Field Naturalists’ Club 2002: 45–48.

- Cock, M. J. W. 2003.** The skipper butterflies (Hesperiidae) of Trinidad Part 11, Hesperinae, Genera group O. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2003: 14–48.
- Cock, M. J. W. 2005.** The Skipper Butterflies (Hesperiidae) of Trinidad. Part 13, Hesperinae, Genera group K. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2005: 23–47.
- Cock, M. J. W. 2006.** The Skipper Butterflies (Hesperiidae) of Trinidad. Part 14: Hesperinae, Genera group L. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2006: 8–26.
- Cock, M. J. W. 2007.** The Skipper Butterflies (Hesperiidae) of Trinidad. Part 15, Hesperinae, Genera group M. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2007: 38–56.
- Cock, M. J. W. 2009.** The skipper butterflies (Hesperiidae) of Trinidad Part 16, Hesperinae, Genera Group J, *Vettius* – *Naevolus*. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2009: 11–31.
- Cock, M. J. W. 2010.** The skipper butterflies (Hesperiidae) of Trinidad Part 17, Hesperinae, Anthoptini and the remainder of Evans' Genera Group I. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2010: 11–30.
- Cock, M. J. W. 2011.** The skipper butterflies (Hesperiidae) of Trinidad. Part 18, Hesperinae, Moncini: eight genera of relatively distinctive species: *Callimormus*, *Eutocus*, *Artines*, *Flaccilla*, *Phanes*, *Monca*, *Vehilius* and *Parphorus*. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2011: 14–36.
- Cock, M. J. W. 2012.** The skipper butterflies (Hesperiidae) of Trinidad. Part 19. Hesperinae, Moncini: the remaining genera with pale spots: *Cymaenes*, *Cobalopsis*, *Arita*, *Lerema*, *Morys* and *Tigasis*. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2012: 20–40.
- Cock, M. J. W. 2013.** The skipper butterflies (Hesperiidae) of Trinidad. Part 20. Hesperinae, Moncini: the remaining genera of mostly unmarked brown species: *Eutocus*, *Eprius*, *Mnasicles*, *Methionopsis*, *Sodalialia*, *Thargella*, *Nastra*, *Mnasilus*, *Mnasitheus*, and *Papias*. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2013: 14–36.
- Cock, M. J. W. 2014a.** A revised checklist of the Trinidad butterflies of the families Papilionidae, Pieridae and Nymphalidae (Lepidoptera). Insecta Mundi 0353: 1–41.
- Cock, M. J. W. 2014b.** A revised checklist of the Trinidad butterflies of the families Hedylidae and Hesperiidae (Lepidoptera). Insecta Mundi 0393: 1–40.
- Cock, M. J. W. [2016].** Observations on the biology of skipper butterflies in Trinidad, West Indies: *Urbanus*, *Astrartes*, and *Narcosius* (Hesperiidae, Eudaminae). Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 2015: 1–14.
- Cock, M. J. W., and S. Alston-Smith. 1990.** The skipper butterflies (Hesperiidae) of Trinidad. Part 6, Pyrginae, genera group D. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club 1989–1990: 46–56.
- Cock, M. J. W., and R. K. Robbins. 2016.** Annotated checklist and biogeographic composition of the Lycaenidae (Lepidoptera) of Trinidad, West Indies. Insecta Mundi 4173(4), 301–350.
- D'Abrera, B. 1994.** Butterflies of the Neotropical Region. Part VI Riodinidae. Hill House; Black Rock, Victoria, Australia. 219 p. [i–vii, 878–1096]
- D'Abrera, B. 1995.** Butterflies of the Neotropical Region. Part VII Lycaenidae. Hill House; Black Rock, Victoria, Australia. 183 p. [i–xi, 1098–1270]
- Donahue, J. 2013.** Metamorphosis. Jeffrey Stuart Ingraham. News of the Lepidopterists' Society 55(3): 108–109.
- Druce, H. H. 1907.** On Neotropical Lycaenidae, with descriptions of new species. Proceedings of the Zoological Society of London 1907: 566–632, pl. 31–36.
- Evans, W. H. 1951.** A Catalogue of the American Hesperiidae in the British Museum (Natural History). Part I Introduction and Pyrrhopyginae. British Museum (Natural History) Publication; London, UK. 92 p. pl. 1–9.
- Evans, W. H. 1952.** A Catalogue of the American Hesperiidae in the British Museum (Natural History). Part II. Pyrginae Section 1. British Museum (Natural History) Publication; London, UK. 178 p. pl. 10–25.
- Evans, W. H. 1953.** A Catalogue of the American Hesperiidae in the British Museum (Natural History). Part III. Pyrginae Section 2. British Museum (Natural History) Publication; London, UK. 246 p. pl. 26–53.

- Evans, W. H. 1955.** A Catalogue of the American Hesperidae in the British Museum (Natural History). Part IV. Hesperinae and Megathyminae. British Museum (Natural History) Publication; London, UK. 499 p. pl. 54–88.
- Field, W. D. 1967.** Preliminary revision of butterflies of the genus *Calycopis* Scudder (Lycaenidae: Theclinae). Proceedings of the United States National Museum 119(3552): 1–48.
- Godman, F. D., and O. S. Salvin. 1879–1901.** Biologia Centrali-Americana. Insecta. Lepidoptera-Rhopalocera. Vol. 1. (Text.). Dulau & Co., Bernard Quaritch; London, UK. i-xlvi, 487 p.
- Guppy, H. L. 1933.** *Heliconius h. hydarus*, Hew., in Little Tobago I. Proceedings of the Royal Entomological Society 7: 65–66.
- Hancock, E. G. 1995.** Handkerchiefs in Trinidad and Tobago (Lepidoptera: Nymphalidae). Bulletin of the Amateur Entomologists' Society 54: 36–37.
- Hebert, P. D. N., E. H. Penton, J. M. Burns, D. H. Janzen, and W. Hallwachs. 2004.** Ten species in one: DNA barcoding reveals cryptic species in the Neotropical skipper butterfly *Astraptes fulgerator*. Proceedings of the National Academy of Sciences of the United States of America 101: 14812–14817.
- Janzen, D. H., W. Hallwachs, P. Blandin, J. M. Burns, J.-M. Cadiou, I. Chacon, T. Dapkey, A. R. Deans, M. E. Epstein, B. Espinoza, J. G. Franclemont, W. A. Haber, M. Hajibabaei, J. P. W. Hall, P. D. N. Hebert, I. D. Gauld, D. J. Harvey, A. Hausmann, I. J. Kitching, D. Lafontaine, J.-F. Landry, C. Lemaire, J. Y. Miller, J. S. Miller, L. Miller, S. E. Miller, J. Montero, E. Munroe, S. R. Green, S. Ratnasingham, J. E. Rawlins, R. K. Robbins, J. J. Rodriguez, R. Rougerie, M. J. Sharkey, M. A. Smith, M. A. Solis, J. B. Sullivan, P. Thiaucourt, D. B. Wahl, S. J. Weller, J. B. Whitfield, K. R. Willmott, D. M. Wood, N. E. Woodley, and J. J. Wilson. 2009.** Integration of DNA barcoding into an ongoing inventory of complex tropical biodiversity. Molecular Ecology Resources 9(Suppl. 1): 1–26.
- Janzen, D. H., W. Hallwachs, J. M. Burns, M. Hajibabaei, C. Bertrand, and P. D. N. Hebert. 2011.** Reading the complex skipper butterfly fauna of one tropical place. PLoS ONE 6(8): e19874. doi:10.1371/journal.pone.0019874
- Kaye, W. J. 1921.** A catalogue of the Trinidad Lepidoptera Rhopalocera (butterflies). Memoirs of the Department of Agriculture, Trinidad and Tobago 2: 1–163.
- Kelly, R. 2014.** A tour of insect collections in the UK: first stop – the Cole Museum of Zoology. Antenna 38(2): 103–112.
- Lamas, G. 2004a.** 96. Papilionidae. p. 87–98. *In*: G. Lamas. (ed.). Checklist: Part 4A Hesperioidea – Papilionoidea. Atlas of Neotropical Lepidoptera. Scientific Publishers; Gainesville, Florida, USA. 439 p.
- Lamas, G. 2004b.** 97. Pieridae. p. 99–117. *In*: G. Lamas. (ed.). Checklist: Part 4A Hesperioidea – Papilionoidea. Atlas of Neotropical Lepidoptera. Scientific Publishers; Gainesville, Florida, USA. 439 p.
- Lamas, G. 2004c.** Polyommatainae. p. 138–140. *In*: G. Lamas. (ed.). Checklist: Part 4A Hesperioidea – Papilionoidea. Atlas of Neotropical Lepidoptera. Scientific Publishers; Gainesville, Florida, USA. 439 p.
- Lamas, G., M. M. Casagrande, A.L. Vilorio, and T.W. Pyrcz. 2004.** 101. Nymphalidae. p. 171–274. *In*: G. Lamas. (ed.). Checklist: Part 4A Hesperioidea – Papilionoidea. Atlas of Neotropical Lepidoptera. Scientific Publishers; Gainesville, Florida, USA. 439 p.
- Lamont, N. 1917.** Note on the butterflies of Tobago. Proceedings of the Agricultural Society of Trinidad and Tobago 17: 400–402.
- Longstaff, G. B. 1908.** On some of the butterflies of Tobago. Transactions of the Entomological Society of London 1908: 53–57. [Reprinted: Agricultural Society Paper (Port of Spain) 586: 81–87.]
- Longstaff, G. B. 1912.** Butterfly-hunting in many lands. Notes of a field naturalist. Longmans, Green & Co., London, UK. 728 p. [Tobago section is a reprint of Longstaff (1908) with additional information on moths and other insects.]
- McAlpine, W. S. 1971.** A revision of the butterfly genus *Calephelis* (Riodinidae). Journal of Research on the Lepidoptera 10: 1–125.
- Mielke, O. H. H. 1968a.** Lepidoptera of the Central Brazil Plateau. II. New genera, species and subspecies of Hesperidae. Journal of the Lepidopterists' Society 22: 1–20.
- Mielke, O. H. H. 1968b.** Lepidoptera do planalto central Brasileiro. V. Novas espécies de Hesperidae e anotacoes sobre outras espécies conhecidas. Revista Brasileira de Biologia 28: 447–455.

- Mielke, O. H. H. 2004. 95. Hesperidae. p. 25–86. *In*: G. Lamas. (ed.). Checklist: Part 4A Hesperioidea – Papilionoidea. Atlas of Neotropical Lepidoptera. Scientific Publishers; Gainesville, Florida, USA. 439 p.
- Morrall, J. [2016]. *Ganyra josephina janeta* (Dixey) (Lepidoptera: Pieridae), a butterfly recorded on the mainland of Trinidad for the first time in over 100 years. *Journal of the Trinidad and Tobago Field Naturalists' Club* 2015: 73–74.
- Nieukerken, E. J. van, L. Kaila, I. J. Kitching, N. P. Kristensen, D. C. Lees, J. Minet, C. Mitter, M. Mutanen, J. C. Regier, T. J. Simonsen, N. Wahlberg, S.-H. Yen, R. Zahiri, D. Adamski, J. Baixeras, D. Bartsch, B. A. Bengtsson, J. W. Brown, S. R. Bucheli, D. R. Davis, J. De Prins, W. De Prins, M. E. Epstein, P. Gentili-Poole, C. Gielis, P. Hättenschwiler, A. Hausmann, J. D. Holloway, A. Kallies, O. Karsholt, A. Y. Kawahara, S. Koster, M. V. Kozlov, J. D. Lafontaine, G. Lamas, J.-F. Landry, S. Lee, M. Nuss, K.-T. Park, C. Penz, J. Rota, A. Schintlmeister, B. C. Schmidt, J.-C. Sohn, M. A. Solis, G. M. Tarmann, A. D. Warren, S. Weller, R. V. Yakovlev, V. V. Zolotuhin, and A. Zwick. 2011. Order Lepidoptera Linnaeus, 1758. p. 212–221. *In*: Z.-Q. Zhang (ed.) Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. *Zootaxa* 3148: 1–237.
- Pelham, J. P. 2008. A catalogue of the butterflies of the United States and Canada with a complete bibliography of the descriptive and systematic literature. *Journal of Research on the Lepidoptera* 40: i–xiii, 1–652.
- Plester, L. 1994. De fus' time in Tobago. *Bulletin of the Amateur Entomologists' Society* 53: 89–96, 99–103, 151–156.
- Riley, N. D. 1975. *A Field Guide to the Butterflies of the West Indies*. Collins; London, UK. 224 p.
- Robbins, R. K. 1991. Evolution, comparative morphology, and identification of the eumaeine butterfly genus *Rekoa* Kaye (Lycaenidae: Theclinae). *Smithsonian Contributions to Zoology* 498: 1–64.
- Robbins, R. K. 2004. Theclinae Tribe Eumaeini. p. 118–138. *In*: G. Lamas. (ed.). Checklist: Part 4A Hesperioidea – Papilionoidea. Atlas of Neotropical Lepidoptera. Scientific Publishers; Gainesville, Florida, USA. 439 p.
- Robbins, R. K., and A. Aiello. 1982. Foodplant and oviposition records for Panamanian Lycaenidae and Riodinidae. *Journal of the Lepidopterists' Society* 36: 65–75.
- Robbins, R. K., R. A. Anderson, and J. B. Sullivan. 2012. The Nicaraguan hairstreak butterfly fauna (Theclinae: Eumaeini), its biogeography, and the history of Nicaraguan collectors. *Journal of the Lepidopterists' Society* 66(2): 61–75.
- Robson, E. A. 1973. Arthur Knyvett Totton. *Nature* 244(20 July 1973), 187–188.
- Sahoo, R. K., A. D. Warren, N. Wahlberg, A. V. Z. Brower, V. A. Lukhtanov, and U. Kodandaramaiah. 2016. Ten genes and two topologies: an exploration of higher relationships in skipper butterflies (Hesperidae). *PeerJ* 4:e2653 doi:10.7717/peerj.2653
- Scoble, M. J. 1990. A catalogue of the Hedyliidae (Lepidoptera: Hedyloidea), with descriptions of two new species. *Entomologica Scandinavica* 21: 113–119.
- Sepp, J. [1829–1843]. *Natuurlijke Historie van Surinaamsche Vlinders, naar het leven geteekend. Papillons de Surinam dessinés d'après nature. Volume 1. Jan Christian Sepp en Zoon; Amsterdam, i–viii, 108 p., 50 pl.*
- Sheldon, W. G. 1936. Tobago and its butterflies. *The Entomologist* 69: 200–208.
- Sheldon, W. G. 1938. Additions to the butterflies of Tobago. *The Entomologist* 71: 29–31.
- Sheldon, W. G. 1949. The butterflies of Tobago. p. 70–81. *In*: C. E. R. Alford. *The Island of Tobago (British West Indies)*. 3rd edition. Longmans Ltd.; Dorchester, UK. 127 p.
- Smith, D. S., L. D. Miller, and J. Y. Miller. 1994. *The butterflies of the West Indies and southern Florida*. Oxford University Press; Oxford, UK. i–x, 264 p.
- Sookdeo, K. 2015. Lepidoptera. *The Field Naturalist, Quarterly Bulletin of the Trinidad and Tobago Field Naturalists' Club* 2015(4): 17–18.
- Springer, J. 2002. Butterflying to the beat of a steel drum: Trinidad & Tobago. *American Butterflies* 10(3): 24–29.
- Warren, A. D., K. J. Davis, E. M. Stangeland, J. P. Pelham, and N. V. Grishin. 2016. Illustrated Lists of American Butterflies (North and South America) 14-II-2014. (Available at <http://butterfliesofamerica.com/L/Neotropical.htm>. Last accessed July 2016.)

- Warren, A. D., J. R. Ogawa, and A. V. Z. Brower. 2008.** Phylogenetic relationships of subfamilies and circumscription of tribes in the family HesperIIDae (Lepidoptera: Hesperioidea). *Cladistics* 24: 1–35.
- Warren, A. D., J. R. Ogawa, and A. V. Z. Brower. 2009.** Revised classification of the family HesperIIDae (Lepidoptera: Hesperioidea) based on combined molecular and morphological data. *Systematic Entomology* 34: 467–523.
- Worms, C. G. M. de. 1969.** Barbados, Grenada, Trinidad, Tobago (April-May, 1968). *Entomologist's Record and Journal of Variation* 81: 33–39.

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