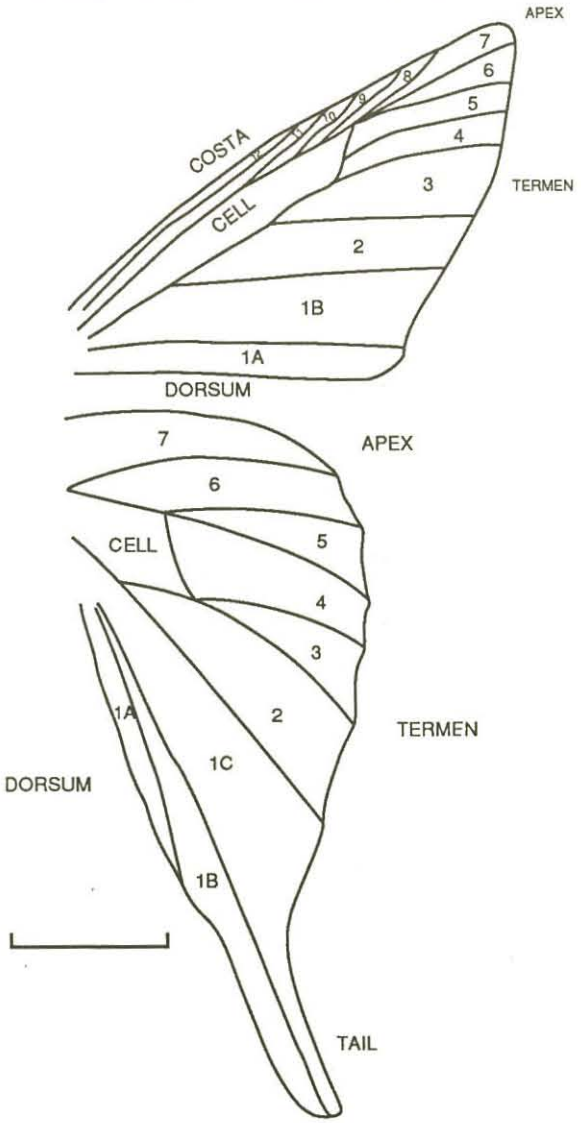
The Skipper Butterflies (Hesperiidae) of Trinidad
Part 5: Pyrginae, Genera Group C concluded

by M.J.W. Cock
C.A.B International Institute of Biological Control, Kenya Station, c/o Kenya Agricultural Research Institute, P.O.Box 30148, Nairobi, Kenya

This contribution follows on directly from Part 4 of this series (Cock 1986). There are no new record here for Trinidad, but *Astraptes fulgerator* (No. 51 below) is a new record for Tobago. I would like to reiterate my thanks to the following for their assistance in examing Trinidad Hesperiidae from various collections: Dr. Phillip Ackery of the British Museum (Natural History) (BMNH); Dr. Jeremy Holloway (C.A.B International Institute of Entomology); Dr. George McGavin of the Hope Department, Oxford University Museum (HD); Dr. Mark Shaw, Royal Scottish Museum, Edinburgh (RSM); and Mr. Scott Alston-Smith who collected records from his own collection (SAS) and the Barcant-Angostura collection (BA) and provided details of his rearing results which are included in the following account. I would also like to thank Dr. Steve Steinhauser (Allyn Museum of Entomology) for his advice, Dr. Chris Prior who took the plate of spread specimens and Dr. C. Dennis Adams (BMNH) who checked the plant names.



Wings of *Urbanus pronta* ♂ illustrating numbering of veins and spaces.

50. *Astraptes talus* Cramer 1777
Plate 1

This species is found from Mexico to South Brazil (TL* Surinam) and also in the Greater Antilles and St. Vincent. Evans (1952) records two males from Trinidad in the BMNH, and Kaye (1921) lists it without comment.

This species is more brown in colour than most of the genus. Basal 1/3 UPF, UPH except costa and margin, body UPS, extreme base UNF bright metallic green; palpi, UNS thorax, disc of UNH dusted with metallic green; UPF hyaline spots tinted yellow; UNH a pale brown bar at 3/4 in space 1C. Illustrations in Lewis (1974, Plate 81, No. 7) and Riley (1975, Plate 21, No. 17) Costal fold; F ♂ 24 mm.

This is a rare species in Trinidad and I know nothing of its habits. Dr. Holloway checked the BMNH collection and located one Trinidad male, collected from St. Anns Valley (ex Adams coll, acquired by BMNH in 1912). June and Floyd Preston captured a male 5.5 Km south of Siparia on the road to Quinam Bay (v.1982), and Scott Alston-Smtih took two males at Haleland Park (vii.1982). The larva is described as "black, the segments divided by a thin transverse dirty yellow line; head grey, with a medium black stripe; prolegs red" (Riley 1975) and feeding on *Paullinia* sp. (Sapindaceae) in Surinam (Sepp cited in Brown and Heineman 1972) and *Guarea* sp. (Meliaceae) in Puerto Rico (Wolcott cited in Brown and Heineman 1972).

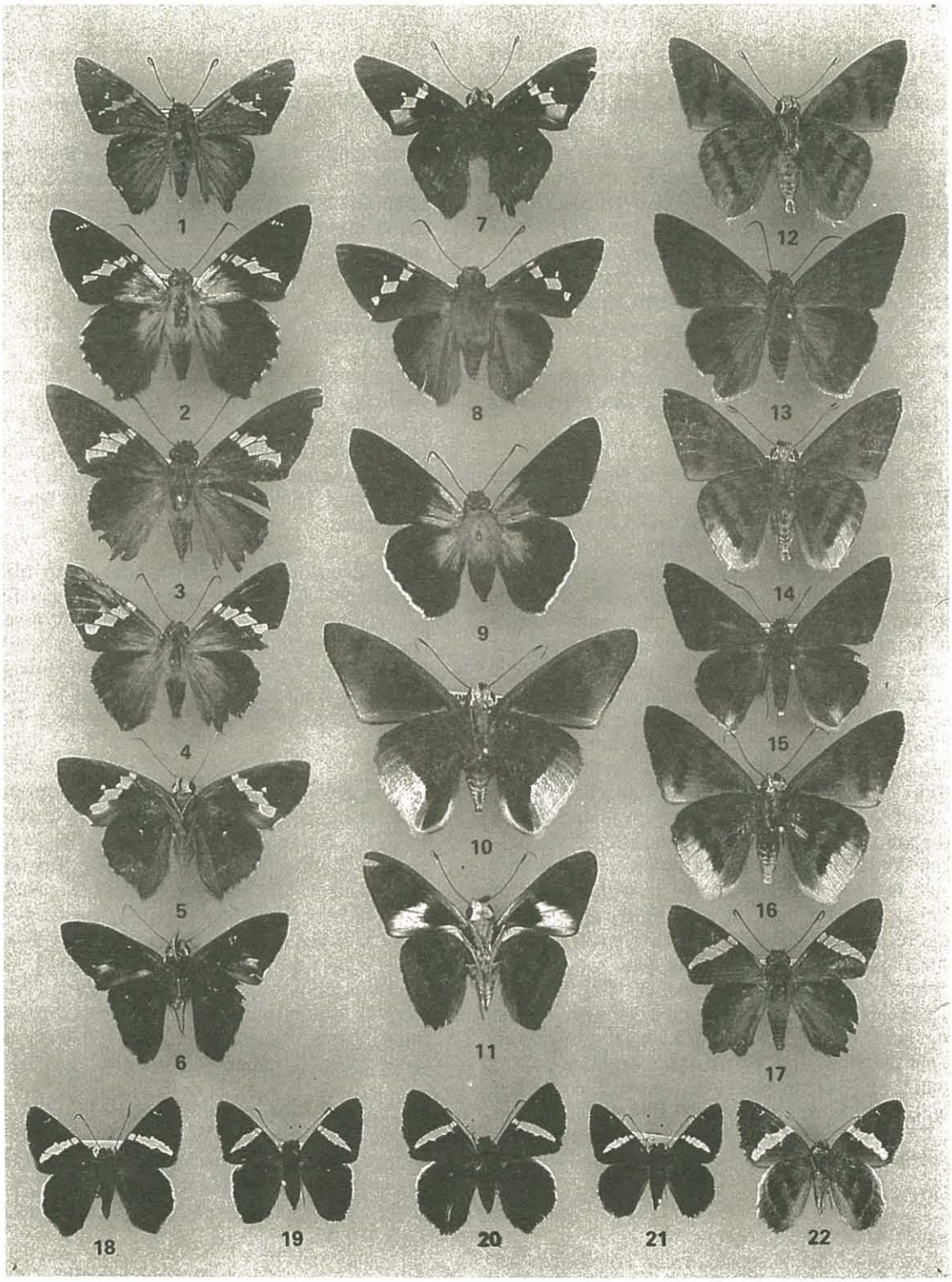
51. *Astraptes fulgerator fulgerator* Walch 1775
Plate 2

This species occurs in two subspeices: *A. f. azul* Reakirt from Texas to Venezuela and down the Andean countries to Bolivia, and *A. f. fulgerator* from the Guyanas to Argentina (TL unspecified). The Trinidad subspecies is *fulgerator*, matching Guyana rather than Venezuela. It was first recorded from Trinidad by Kaye (1904). I have captured a female on the ridgetop between Speyside and Charlotteville, Tobago, and this is a new record for that Island.

Ground colour UPS blackish brown, UNS brown. Basal 1/4 of UPS wings, thorax UPS, head UPS, basal 1/4 of UNF costa bright metallic green; white hyaline spots F; cilia UPF space 1 and margin UPH except at end of veins, basal 1/3 UNH costa, patch distal to hyaline spot space 1B UNF, cilia space 1 UNF, head UNS white; thorax UNS light brown; cilia margin UNH pale brown except at end veins; UNH with two indistinct bars of darker brown. Illustration in Lewis (1974, Plate 81, No. 3). Costal fold; F ♂ 25 mm, ♀ 29 mm.

This species is to be found occasionally in forested areas throughout Trinidad, but not apparently on the higher parts of the Northern Range. I have taken it at flowers only once, but

* TL= type locality. For other abbreviations, UPF, UPH etc., see Part 4, Living World 1985-1986 p. 33



Plates 1-22

Adult Trinidad Hesperiidae (coll. MJWC except as stated) 1, *Astraptes talus* ♂, 6.5 km. S. of Siparia on road to Quinam Bay, 24.v.1982, J. & F. Preston (in coll. Prestons); 2, *A. fulgerator* ♀, Trinity Hills, Morne Derrick summit, 4.iv. 1983; 3, *A. apastus* ♂ Brigand Hill, 25.xi.1980; 4, *A. enotrus* ♀, Curepe, 23.x.1981; 5, *A. enotrus* ♀ UNS, Moreau, 28.xii.1937 [Sir N. Lamont] (in coll. UWI); 6, *A. enotrus* var. ♂ UNS, Quinam, 16.i.1936 [Sir N. Lamont] (in coll. RSM); 7, *A. aulestis* ♂ UNS, Moreau, 28.xii.1937 [Sir N. Lamont] (in coll RSM); 8, *Narcosius colossus* ♂, Moreau, 4.i.1938 [Sir N. Lamont] (in coll. UWI); 9, *Astraptes alardus* ♀, Curepe, larva on *Erythrina poepiggiana*, adult 18.xii.1981; 10, *A. alardus* ♀ UNS, Morne Bleu Textel Road, *Eupatorium* flowers, 5.x.1979; 1, *A. alector* ♂ UNS, Trinity Hills, Morne Derrick, 4.iv.1980; 12, *A. anaphus anoma* ♂ UNS, Andrews Trace, 9.iv.1980; 13, *A. a. anoma* ♀, West Moreau, 31.xii.1979; 14, *A. a. anetta* ♂ UNS, Blanchisseuse-Paria Bay track, 22.i.1980; 15, *A. a. anetta* ♀, Morne Bleu Textel Road, 11.x.1979; 16, *A. a. anetta* ♀ UNS, Parrylands, *Eupatorium* flowers, 13.ix.1980; 17, *Calliades zeutus* ♂, N. of Mt. Tabor, 22.xi.1981; 18, *Autochton neis* ♀, Fort George, 2.viii.1981; 19, *A. zarex* ♂, Morne Bleu Textel, 27.xi.1980; 20, *A. longipennis* ♀, Morne Catharine, 1500 ft., 6.viii.1979; 21, *A. itylus* ♂, Waller Field, 2.xii.1980; 22, *A.bipunctatus* ♀ UNS, 5.5 km. S. of Siparia on road to Quinam Bay, 1.v.1982, J. & F. Preston (in coll. Prestons). (Photo C. Prior).

Kaye (1921, p. 125) states that Sir Norman Lamont 'secured quite a number in the south at *Eupatorium* blooms'. I have found it most common in patches of sunlight along forest paths.

The subspecies *azul* is recorded feeding on *Karwinskia humboldtiana* (R. & S.) Zucc. (Rhamnaceae) in Texas and Mexico (Kendall 1975) and *Vitex mollis* HBK (Verbenaceae) in Mexico (Comstock and Vazquez 1961). However, Moss (1949) records the foodplants of subspecies *fulgerator* as *Inga* spp., *Casssia hoffmanseggii* Mart ex Benth (Caesalpiniaceae) and an unidentified legume vine in Belem, Brazil, while Beizanko and Mielke (1973) list *Cassia corymbosa* Lam., *C. ferruginea* Schrad. ex DC., *Delonix regia* (Boj. ex Hook.) Raf. and occasionally *Erythrina crista-galli* L. (Papilionaceae) and *Sesbania punicea* (Cav.) Benth. (Caesalpiniaceae) in Rio Grande do Sul, Brazil.

I have found the larvae in Trinidad on *Cassia fruticosa* Mill. saplings in light forest. The larvae match those described and illustrated by Moss and resemble in colour and pattern those of *Pyrrhopyge phidias* Linnaeus (see Cock 1981). Mature larva 3.5 cm; head large (17 mm diameter), rounded, indented at vertex and narrowed behind to a neck of about 2/3 width of head at widest; head colour reddish brown, dark brown streak down centre of front of head capsule, the ventral part of head capsule pale brown; three narrow streaks dorsally on each half of head - the inner pair diverge on face so that a corresponding dark brown triangle is apparent adjacent to the dark central streak; white hair on head, especially prominant laterally. Thoracic and abdominal segments brown-red, brighter below and on prothorax; mesothorax, metathorax and abdominal segments 1-9 each with a thin circular yellow band which dorsally lies at about 2/3 on each segment and laterally swings forward to reach the spiracle; thorax and abdomen with white, moderately dense hairs. Pupa brown, covered with white wax layer except for narrow clear lines delineating the appendages and body segments. The young larva shelters in an *Epargyreus*-type flap; the full grown larva spins two or three leaves together and pupates in the final shelter. One larva (x. 1981, Curepe) had three macrotype tachinid eggs upon it - one ventrally on the neck of the head capsule and the other two dorso-laterally on the meso and metathorax; twenty days after pupation two tachinid larvae emerged from the pupa, but unfortunately the resultant puparia failed to complete development. A larva collected in the third instar (xi.1981, Mt. Tabor) pupated 21 days later and the adult emerged 14 days after that.

[*Astraptes egregius* Butler 1870]
Evans (1952) does not list this species from Trinidad in the BMNH collection giving Mexico to Ecuador as the principal range (in two subspecies) with only one male from Venezuela, suggesting that it is unlikely to be a Trinidad species. Kaye (1940) records it from Trinidad on the basis of specimens captured at Siparia (20.xi.1920; W.J. Kaye) and Quinam (16.i.1936, Sir N. Lamont). Kaye's collection which has been incorporated into the Allyn Museum of Entomology does not include any *Astraptes* spp. with the data of his purported specimen (L.D. Miller pers. comm.), nor does Sir Norman Lamont's collection at UWI. However, Lamont's collection at the RSM includes a specimen from Quinam collected 16.i.1936 and labelled *Telegonus egregius* - clearly the specimen to which Kaye referred. Lamont's specimen resembles certain atypical individuals of *A. egregius* in the BMNH which lack the white hyaline spots F, and it seems likely that this is why the name was used. However, dissection of the genitalia shows that this is an aberrant specimen of *A. enotrus* (S.F. Steinhauser pers. comm. 1986) under which it is treated below.

Accordingly, until Kaye's specimen is found (which now seems unlikely), I conclude that his inclusion of this species is based upon this aberant specimen. In Cock (1982) I suggested that the species intended may have been *A. colossus* but this is now shown to be incorrect and *A. egregius* sensu Kaye should now be inserted in the synomy of *A. enotrus*.

52. *Astraptes apastus apastus* Cramer 1777
Plate 3
The nominate subspecies occurs from Nicaragua to the Upper Amazons and the Guyanas (TL Surinam), while a second subspecies, *A. a. pusa* Evans, occurs in South Brazil. Crowfoot (1893) first recorded *A. apastus* from Trinidad; Kaye records both *A. apastus* (Kaye 1904, 1921) and *A. briccius* Plotz (Kaye 1940) from Trinidad, but Evans lists the latter as a synonym of *A. apastus*.

Ground colour UPS black with deep blue tint in fresh specimens, UNS brown; white hyaline spots F; base UPF, UPH except costal 1/3, thorax UPS, head UPS, basal 1/4 UNF costa, base UNH metallic green; head UNS white; palpi UNS pale brown-green; UNS body,UNH greenish brown; UNF white spot extending from hyaline spot space 1B to vein 1, wing mauve from this spot to termen. No costal fold; F ♂ 31-32 mm, ♀ 33mm.

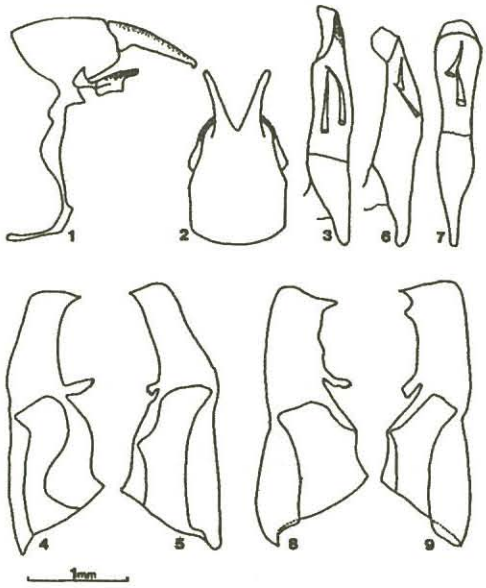
This is a widely distributed but scarce species in Trinidad. I have seen specimens from Maraval (ix.1891, [S. Kaye] in BMNH), Balandra Bay (xii.1981), Brigand Hill (x.1980), Grande Ravine (x.1977, J.O. Boos), Siparia (i.1921, Sir N. Lamont in RSM), Moreau (xii.1937, Sir N. Lamont in RSM) and S. Alston-Smith reports specimens from Maracas Lookout (iii.1972, BA), Arima-Blanchisseuse Road milestone 16 (i.1977, BA) and Parrylands (ii.1983, SAS). All dated captures are from the period September to March. Moss describes the larva as "strongly yellow, faintly freckled with brown and the pupa...brown and lightly covered with white wax"; the foodplant in Brazil is *Erythrina corallodendron*.

53. *Astraptes enotrus* Stoll 1781
Plates 4-6, Figures 1-5
Evans (1952) records this species from Mexico to Paraguay (TL unspecified), but judging from the number of specimens in the BMNH it is generally scarce. First recorded from Trinidad by Kaye (1921).

Ground colour blackish brown with deep blue sheen in fresh specimens; F hyaline spots white; basal 1/4 UPF, UPH (except costal 1/3), thorax and head UPS metallic blue-green; UNF white area basal to hyaline spot in space 1B; palpi UNS pale brown; head UNS white; UNH a small spot at end cell and scattered scales along dorsum and in submarginal and discal bands yellowish white. Cilia concolorous except white on lower half of space 1B F. This species is very similar to *A. aulestis* Stoll in appearance; differences are discussed under that species below. Costal fold; F ♂ 22-25 mm, ♀ 25-26 mm.

As discussed under *A. egregius* above, there is a unique aberrant specimen of *A. enotrus* in coll. Lamont at RSM, taken at Quinam, 16.i.1936. UPS ground colour blackish brown with dark blue sheen; basal 1/3 UPF, UPH except costa and margin,

UPS head and body metallic bluish-green. UNF dark brown with cell, basal half spaces 2-5, basal 1/3 spaces 6, 7, basal 1/2 spaces 8, 9 with inconspicuous deep blue sheen; at about 2/3 in upper 1/2 of space 1B a white, near quadrate spot, concave on distal side; diffuse white area just above vein 2 at about 1/2 in space 2; space 1A pale brown. UNH dark brown, marginal 1/3 slightly paler; scattered yellow scales form two diffuse bands. Cilia brown except lower 1/2 space 1B F. Weak costal fold; F ♂ 23 mm.



Figs. 1-9 Male genitalia of *Astraptes* spp.
1-5: aberrant *A. enotrus* (coll. Quinam, 16.i.1936, N. Lamont); 1, genitalia with valves removed, lateral view; 2, uncus and gnathus, dorsal view; 3, aedaeagus, lateral view from left; 4, left valve, internal view; 5, right valve, internal view.
6-8: *A. aulestis* (coll. Moreau, xii. 1937, N. Lamont); 6, aedaeagus, lateral view from left; 7, aedaeagus, ventral view; 8, left valve, internal view; 9, right valve, internal view.

This is a generally scarce species; there are specimens in the BMNH (♂ St. Anns; 2♂, ♀ Trinidad), BA (♂,♀ St. Anns, ix. 1938) and in the Admiral Bourke Collection (HD). In Sir Norman Lamont's collection at UWI there are a male and three females from Moreau all captured between 26.xii.1937 and 4.i.1938, and I have caught two females at Curepe (vii.1981; x.1981). Moss (1949) records the larva as much commoner than the adult at Para, Brazil, but was unable to identify its leguminous host plants. The larva he describes as olive green, light ochre dorsally with a brown dorsal line, six dorsal yellow or brown V shape marks and a brown head with red eye spots.

54. *Astraptes aulestis* Stoll 1780
Plate 7, Figures 6-8
This is the species treated as *A. granadensis* Möschler 1878 by Evans (1952) and listed as such by Cock (1982). Steinhauser (1986) states that the type of *A.granadensis* is a male "*A. colossus rhoda*" (see under *Narcosius colossus* below); but in any event *A. aulestis* is an earlier valid name. This is a generally scarce species found from Central America to Paraguay including Venezuela and the guyanas (TL Surinam). Evans's (1952) listing of one male from Trinidad in the BMNH was the first record from the island.

Markings as *A. enotrus* except green-brown on UPS rather than blue-green and following differences UNH. UNH brown with green (basal) and blue (distal) sheen; small white spot end cell; scattered yellow scales along dorsum and in two diffuse bands, one through end cell, other about 3 mm from termen; beyond the distal band there are scattered grey scales which tint this marginal area. To distinguish *A. enotrus* from *A. aulestis* without having specimens of both side by side is not easy. On the UPS *A.aulestis* is more green-brown and *A. enotrus* more blue-green, but the difference is slight; UNH *A. enotrus* lacks the blue sheen and grey margin of *A. aulestis*. the male genitalia are also similar (Figs 6-8) and are somewhat variable, but the valves of *A. aulestis* are consistantly shorter and heavier, and the dorsal processes stouter; also the thorns of the cornutus are straighter and stouter than in *A. enotrus* (S.R. Steinhauser pers. comm.). Illustration in Lewis (1974, Plate 80, No. 48, as *A. "aulestes"*). Costal fold; F ♂ 25 mm.

The male in the BMNH recorded by Evans (1952) is labelled simply "Trinidad/ 29.xii.1934", and there is a male in the RSM from Moreau (xii.1937, Sir N. Lamont). Although this species is easily confused with *A. enotrus*, it would seem to be somewhat rarer in Trinidad. Foodplant and life history unknown.

55. *Narcosius colossus granadensis* Moschler 1878
Plate 8
This is the species treated as *Astraptes colossus rhoda* Evans by Evans (1952) and hence Cock (1982). In fact, Evans had misused the name *granadensis* (see *A. aulestis* above) as the type is of the same subspecies as Evan's *A. colossus rhoda* (Steinhauser 1986). Accordingly *rhoda* Evans is a junior synonym of *granadensis* Möschler. Steinhauser (1986) has reviewed this group of species and erected a new genus, *Narcosius*, in which *A. colossus*, *A. parisi* and other, non-Trinidad species are now placed. As Steinhauser plans to review further groups of this section of Pyrginae, I have, for the time being retained the species sequence used by Evans (1952) and Cock (1982) although this means that the two species of *Narcosius* are bracketed by the remainder of *Astraptes* for the present.

Steinhauser (1986) recognises two subspecies of *N. colossus*: *N.c. colossus* (TL Venezuela) from Mexico to Venezuela, and *N. c. granadensis* (TL Venezuela) from Venezuela to the Guyanas, Brazil, Ecuador, Peru and Bolivia. Kaye (1921) lists Astraptes grenadensis Schaus from Trinidad, but this is a synonym of *A. anaphus* (No. 59 below) and does not refer to *N. c. granadensis*. Cock (1982) recorded this species from Trinidad on the basis of a male in the collection of Sir Norman Lamont at UWI.

Ground colour black above, dark brown UNF, green tinted dark brown UNH; white hyaline spots F spaces 1B, 2, 3, cell, costa. Basal 1/4 UPF, UPH cell and spaces 1A to 3, body UPS with dark green-blue hairs; cilia of lower 1/2 space 1B F white; cilia H white, dark at end of veins; UNH with scattered yellow scales indistinctly grouped into bands; UNS head pale brown. Note that there is no overlap between the spots in spaces 1B and 2 unlike the similar *N. parisi* which follows; also the outer edge of the spot in space 2 F is convex. *Narcosius narcosius* Stoll and *N. samson* Evans are also similar and occur in Venezuela or the Guyanas, but have the spot in space 1B closer to the termen than to the spot in space 2. Costal fold; F ♂ 29 mm.

Sir Norman Lamont's specimen in UWI was collected at

Moreau, 4.i.1938; there is another male with the same data in the RSM. In view of the date and the habits of the genus, it may well have been at flowers of *Chromolaena odorata (L.)* King & Robinson. Nothing else is known of this species in Trinidad. Life history and foodplant unknown.

56. *Narcosius parisi parisi* Williams 1927

Steinhauser (1986) transferred this species from *Astraptes* to his new genus *Narcosius* (see comments under *N. colossus* above). Evans (1952) and Steinhauser (1986) recognise two subspecies: the nominate *parisi* Williams from Venezuela to Paraguay (TL South Brazil) and the central American *helen* Evans. Evans (1952) records five males from Trinidad in the BMNH; Steinhauser (1986) lists six in the BMNH and a female in the American Museum of Natural HIstory. Kaye ought to have seen some of these, but does not record this species. Possibly his inclusion of *A. briccius* (a synonym of *A. alardus*)which is already listed in Kaye (1921) actually refers to *A. parisi*.

Ground colour dark brown; distal half UPF, UPH, disc UNF blue-black; white hyaline spots F in spaces 1B (upper half of space, at 4/5 to termen), 2 (under origin of vein 3; inner margin oblique; outer margin deeply excavate), 3 (small; above outer 1/2 of upper margin of spot in space 2), cell (across whole cell; outer margin excavate; outer margin reaches base of vein 3) and costa (parrallel to cell spot); basal 1/4 UPF, spaces 1, 2, base of 3 and cell UPH, UPS body green-brown. UNH overlaid with pink-mauve scales in margin; scattered yellow scales on disc forming two indistinct bands. UNF a white spot in space 12 between the hyaline spots in costa and cell. Cilia concolorus except white at lower part of space 1B F and spaces 1C, 2 UPH. Rather similar to *A. colossus rhoda*, but can be most easily distinguished by the concave outer edge of the spot in space 2 F.Costal fold; F ♂ 27-29 mm.

Four of the specimens in the BMNH are labelled "Trinidad", the fifth is from St. Anns (G.E. Tryhane). Nothing more is known of this species in Trinidad. Life history and foodplant unknown.

57. *Astraptes alardus alardus* Stoll 1790
Plates 9, 10

The nominate subspecies occurs from Columbia to Bolivia and Argentina (TL Surinam) but, judging from the collection of the BMNH, is only common in Venezuela and Trinidad - perhaps a reflection of the extensive use of its foodplant, Immortelle, as a shade tree for cocoa. There are separate subspecies found in Central America and the Cauca Valley (Colombia); specimens from Cuba and Haiti are now treated as a distinct species (Riley 1975). First recorded from Trinidad by Kaye (1904).

Ground colour blackish brown; UPF basal 1/4, UPH basal 1/2, UPS head, UPS body metallic green. UNS paler brown than UPS; UNS head and a broad band UNH termen white. Illustration in Lewis (1974, Plate 80, No. 45). No costal fold; F ♂ 31 mm, ♀ 31-35 mm.

This species is widespread and fairly common in Trinidad where its foodplant, Immortelle, grows. It can be taken along forest paths, at flowers (Kaye 1921, p. 125, mentions 'scentless jasmine') and on hill tops. It rests under leaves with the wings closed and suns itself with the wings partially spread - the hindwings more so than the forewings. As mentioned above, the larvae feed on Immortelle, *Erythrina poepiggiana* (Walp.) O.F. Cook. (Papilionaceae) and the characteristic *Epargyreus*-type larval shelters are easily found on the large leaves of saplings or suckers from cut stumps of this tree. Mature larva c. 3.5 cm; head black, large, 7 mm across, slightly chordate, with short pale setae and a pair of large orange or red eye spots; prothorax red-brown with red legs; mesothorax, metathorax and abdomen dark translucent green liberally speckled with yellow to give a yellow-green appearance; an orange spot above the spiracle of abdominal segment 8 and orange around the posterior margin of segment 9; true legs, prolegs and spiracles red. Young larvae lack the eye spots on the head and have the prothorax dark brown or black dorsally, but are otherwise similar. I have found larvae of this type in October, November, January and March.

I have also found a larva on the same hostplant (v.1982, Morne Catharine) which had a brown head with black eye spots; prothorax red; mesothorax and abdomen laterally yellow-green, dorsally dark translucent green; a pair of dorsolateral orange spots on abdominal segment 8. In due course this specimen emerged - apparently a normal female *A. alardus*. Whether this is a different, sibling species, a variety of *A. alardus* or even a seasonal form, cannot be resolved without rearing additional larvae of this form.

The pupa (of the black-headed form) is reddish brown, covered with a light, white wax bloom; although the spiracles are dark, the appendages, unlike *A. fulgerator* above, are not delineated. A 9 mm larva collected x.1981 pupated after 20 days while one of the same size collected in ix.1981 pupated after 22 days; pupal durations noted include 12, 14, 14 and 16 days. Of five small to medium sized larvae collected on La Laja Ridge (iii.1982) one, when in the fourth instar, produced three small tachinid larvae which pupated but failed to complete development. Moss (1949) gives a minimal description of the larva (compatible with either of the above) and records the foodplant in Belem, Brazil, as *Erythrina corallodendrun*.which is, however, most likely to be a mis-identification (C.D. Adams pers. comm.). Further south, in Rio Grande do Sul, Biezanko & Mielke (1973) record *Erythrina crista-galli* and *Bauhinia candicans* Benth. (Caesalpiniaceae) as foodplants.

58. *Astraptes alector hopfferi* Plötz 1882
Plate 11

This generally scarce species occurs from Mexico to the Amazons, although the nominate subspecies is restricted to Central Colombia. It was first recorded from Trinidad by Cock (1982). Kaye (1914, 1921) lists *A. parmenides* Stoll from Trinidad on the basis of a G.E. Tryhane specimen from St. Ann's Valley. *A. parmenides* is a synonym of *A. creteus* Cramer (Evans 1952) and not otherwise known from Trinidad. It occurs widely in Central and South America including Venezuela and the Guyanas. As it closely resembles *A. alector* (but lacks the white base of costa UNH), until Tryhane's specimen is located or further specimens are obrtained from Trinidad, I prefer to regard Kaye's record as a misidentification for *A. alector*.

Above this species resembles *A. alardus* but the female has a diffuse white band UPF from near tornus to mid cell. UNS brown except UNF costa to 1/2, broad band UNF tornus to mid cell, UNH costa to 1/3 and head white; UNH with two darker brown bands. Evans (1952, p. 113) states that the base of the costa UNF is shining green, but in Trinidad specimens there is only a faint green tint. The white costa UNH distinguishes this species from the otherwise similar *A. creteus*. Illustration in

Lewis (1974, Plate 81, No. 4; ♀, as *A. hopfferi*). No costal fold; F ♂ 24-25 mm (an atypical ♂ from the Northern Range has a trace of the white band UPF and F 19 mm only); ♀ 26 mm.

In Cock (1982) I listed 10 captures of this species (3 from Moreau; 1 from Parrylands; 5 from Trinity Hills; 1 from Andrew's Trace) and S. Alston-Smith has taken 3 ♂, 1 ♀ from the south-west (Guapo, Parrylands, Los Bajos), showing this species to be much more common in the south of Trinidad than the north. My female was captured at flowers of *Chromolaena odorata*, and on one occasion five males were captured in the summit clearing of Morne Derrick, Trinity Hills. The specimen from Andrew's Trace, as mentioned above, is atypical and further captures from the north of Trinidad would be of interest. Life history and foodplant unknown.

59. *Astraptes anaphus anetta* Evans 1952
Plates 14, 15
***Astraptes anaphus anoma* Evans 1952**
Plates 12, 13

Two of the five subspecies of *A. anaphus* recognised by Evans (1952) occur in Trinidad. Of these five subspecies, *anausis* Godman & Salvin is restricted to the Caribbean islands, but the other four have rather unlikely distributions - all four occurring in Peru for example - such that I am inclined to think the use of the term "form" would be more appropriate than subspecies. To a degree the Trinidad specimens of the two subspecies intergrade and the distinguishing characters of *anetta* (TL Costa Rica) with "UPH tornal yellow colouring narrow, not reaching vein 2 and divided by a brown tongue to end vein 1: UNH the broad yellow border shaded to vein 2" and *anoma* (TL Trinidad) with "UPH no yellow at tornus; UNH the yellow border outwardly edged by conical brown spots" (Evans 1952, pp. 118-119) do not adequately serve to describe the range of variation or sexual dimorphism of the two subspecies in Trinidad. Breeding the different forms would be an interesting project and might help resolve their taxonomic status. This species was first recorded from Trinidad as *Telegonus grenadensis* Schaus (a synonym) by Crowfoot (1893) and by Kaye (1904).

Ground colour brown; indistinct dark brown bands UPS and UNS. Yellow markings variable:

anoma ♂ sullied yellow at UNH tornus,
♀ space 1C UNH distal to the discal dark brown band sullied yellow,

anetta ♂ UPH margin space 1B and a triangle on the termen of space 1C yellow; UNH margin of space 1B, space 1C beyond the discal band yellow; UNH space 2 and parts of space 3 beyond the discal band yellow sullied with brown,
♀ UPH 2 mm margin of space 1B, space 1C distal to the discal band yellow; UNF sullied yellow at tornus; UNH margin and apex of space 1B, spaces 1C and 2 distal to the discal band yellow; UNH spaces 3 and 4 distal to the discal band sullied yellow.

Illustrations in Barcant (1970, Figure 4, No. 14; cf. ♀ ssp. *anetta*), Brown & Heineman(1972, Plate IX, No. 6; ♀ ssp. *anausis*, cf. ♂ ssp. *anoma*), Lewis (1974, Plate 80, No.46; cf. ♀ ssp. *anetta* UPS), Riley (1975, Plate 21, No. 18; ♂ ssp. *anausis*, cf. ♂ ssp. *anoma*) and Smart (1976, p. 112, No. 21; ssp. *anetta*). No costal fold; F ♂ 25 mm, ♀ 28-29 mm.

This is not a particularly common species in Trinidad, and is obtained more frequently in the south than the north; thus, I have seen 17 specimens from the south (mostly in colls. Lamont) and 5 from the north. It occurs up to 2,000 ft in the Northern Range and is quite common at *Eupatorium* (s.l.) spp. flowers. I have observed a female oviposit on *Chromolaena odorata* (West Moreau, xii.1979) but believe it was misled by the legume vine growing on the bush; certainly Cruttwell (1974) in her survey of the insects of *C. odorata* never found this species. The larvae are plain yellow, have a large, round, brown head with prominant eye spots and feed on a legume vine in Brazil (Moss 1949). Kendall (1976) reared ssp. *anetta* from larvae on *Pueraria lobata* (Willd.) Ohwi (Leguminosae) in Mexico, and it seems likely that similar legume vines are used in Trinidad.

60. *Calliades zeutus* Möschler 1878
Plate 17

This is a rare species; Evans (1952) lists just four males in the BMNH, one each from Guyana, Peru, Bolivia and "South America". The type locality is Colombia. De Jong (1983) records one female from Surinam and Cock (1982) added this species to the Trinidad list on the basis of one male.

Ground colour brown; F hyaline bar in spaces 1b, 2, 3, cell and costa; slight green sheen body and disc UPH; UNF base costa, UNF dorsum, base UNH pale brown; UNH with an indistinct dark brown discal band, and beyond this a few yellow scales in space 2; cilia brown. Similar in appearance to next genus, but larger. The illustration in Lewis (1974, Plate 81, No. 21) of *C. oryx* Felder (as *C. phrynicus*) is very similar to *C. zeutus*, but lacks the white hyaline spot at the base of space 3 F. No costal fold; F ♂ 23 mm.

I can add little to my record (Cock 1982) of a male taken on the ridge to the north of Mt. Tabor at about 1,400 ft (xi.1981). The specimen rested with its wings closed on the thin trunks of sapling trees and was difficult to capture. S. Alston-Smith has a male from Trinidad with no data. Clearly this is a rare species everywhere. Life history and foodplant unknown.

Autochton

This is a genus of rather similar species, of which five are represented in Trinidad. All are blackish brown above, with a white hyaline bar across the F, and lighter brown below with indistinct markings on UNH. They can be distinguished as follows:

A. neis has three apical spots, no white on termen UNH, a green sheen to the body UPS, and H produced at vein 1B.

A. longipennis has no apical spots, white margin to termen UNH, usually a tiny dark spot at the origin of vein 3 within the hyaline band and vein 2 within the hyaline bandusually dark.

A. zarex usually has no apical spots but sometimes there is one small one; it has a white margin to the termen UNH and the white hyaline bar F is clear at the origin of vein 3 and along vein 2.

A. bipunctatus has two apical spots, no white on termen UNH, no green sheen to body and H rounded.

A. itylus never has a white hyaline spot at the base of space 3 UPF; all the other species do.

A. longipennis and *A. zarex* are a little difficult to distinguish, especially the females, but the males have very distinct genitalia (Figures 10,11). It is a straightforward matter to brush

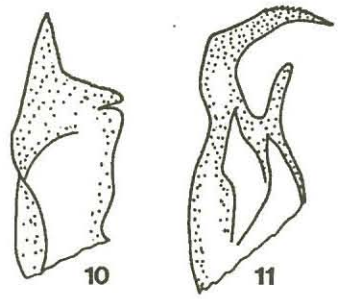
the scales from the tip of the abdomen of a pinned specimen with a stiff, cut-short paint brush to show the shape of the end of the valves.
All species seem to be restricted to secondary forest and none is fond of flowers. They rest with the wings held closed above the body.

61. *Autochton neis* Geyer 1832
Plate 18
No subspecies are recognised of this common skipper which can be found from Mexico to Paraguay (TL Brazil). First recorded from Trinidad by Kaye (1904).

Ground colour blackish brown; metallic green sheen above on body and base of wings; white hyaline spots F, a continuous bar through spaces 1B, 2, 3, cell and costa, and apical spots in spaces 6, 7 and 8; cilia of H termen pale, otherwise dark; UNH paler brown, with two brown discal bands, brown spot towards base of space 7, and in space 2 on outer margin of the outer discal band a few pale scales. Illustrations in Lewis (1974, Plate 81, No. 33; as *Cecropterus neis*) and Riley (1975, p. 167, Fig. 18). No costal fold; F ♂ 16-17mm, ♀ 18mm.

This is the commonest and most widespread member of the genus in Trinidad. It occurs in lowland secondary forest throughout the island and up to 1,700 ft. in the Northern Range. Moss (1949) describes the larva from Brazil as "grey with a round head" and his illustration shows it to have the sides and dorsal line paler. It feeds on *Miconia* sp. (Melastomataceae) in Brazil.

62. *Autochton longipennis* Plötz 1882
Plate 20, Figure 11
This species is found from Mexico to southern Brazil (TL "South America") and is generally common. The listing by Evans (1952) of eight specimens in the BMNH is the first published record for Trinidad.



Figs. 10-11 Male genitalia of *Autochton* spp.
10, *A. zarex* (coll. Morne Bleu Textel Road, 27.xi. 1980) left valve, internal view; 11, *A. longipennis* (coll. Maracas Valley, 500 ft., 9.i.1980) left valve, internal view.

Colouring similar to *A. neis*; UNH termen spaces 4-7 narrowly white; no apical spots F; veins, including base of vein 3, within the hyaline band are dark; UNH darker than *A. neis* except spaces 1A, 1B and 1C which are paler brown; discal bands UNH narrower. No costal fold; F ♂ 18-19mm, ♀ 18-20mm.

This is a moderately common species in secondary forest of the Northern Range up to 2,300 ft. I have seen only one specimen from the south of Trinidad (Siparia, i. 1916, Sir N. Lamont in RSM). Life history and foodplant unknown.

63. *Autochton zarex* Hübner 1818
Plate 19, Figure 10
This common species occurs from Mexico to Argentina (TL Surinam). Kaye (1904) records *A. zarex* as well as its synonym *aunus* Fabricius on the basis of a record by GB Longstaff (Kaye 1914). If Kaye actually recognised two different species, one may have been *A. longipennis* (No. 62 above which he does not record), as the two are very similar.

Colouring as *A. longipennis*, but veins in F. hyaline band concolorous. Illustration in Lewis (1974, Plate 81, No. 32; as *Cecropterus aunus*). No costal fold; F ♂ 16-18mm, ♀ 18mm.
This is a common species in the secondary forest of the Northern Range; it is usually found in the valleys, but I have seen it up to 2,300 ft. I have seen no specimens from central or south Trinidad, but it probably occurs in woodland throughout the island.

In Trinidad the larva feeds upon *Desmodium incanum* DC. and perhaps other members of the genus. Mature larva: 2.3 cm; head rounded, slightly indented at vertex, black; prothorax narrow relative to head, dark dorsally; rest of thorax and abdomen dark green tinted brown-orange especially posteriorly and with yellow-white speckling; segments paler posteriorly; dorsal line clear, darker; metathorax and abdominal segments 1-8 with a dorso-lateral yellow spot on anterior margin; legs concolorous. Medium sized larva: 1.0 cm; head and thorax shiny black; rest of thorax, abdomen dark green with white speckles giving a milky green appearance, tinted yellow anteriorly; a dorso-lateral row of white spots. Small larva: 0.5 cm; head and prothorax shiny black; rest of throax, abdomen dark green with a faint dorso-lateral longitudinal stripe. The small larva was found in an *Epargyreus*-type leaf flap in light woodland (x.1981, Curepe). The larva, its habits and foodplant are similar to those of *Urbanus dorantes* Stoll (Cock 1986) but perhaps *A. zarex* prefers shady situations whereas *U. dorantes* prefers open sunny habitats.

63a. *Autochton bipunctatus* Gmelin 1790
Plate 22
Although recorded from Mexico to Brazil, there are only scattered records of this species outside Colombia and Venezuela. In Cock (1982) I suggested that this was not a Trinidad species as Kaye (1921) only lists it on the authority of Crowfoot (1893) who could easily have misidentified it for one of the common species which he didn't record. Since then I have been able to confirm that this is a Trinidad species on the basis of captures by June and Floyd Preston (Cock 1984).

Ground colour dark brown, rather than blackish brown; F hyaline bar in spaces 1B, 2, 3, cell, costa and apical spots in spaces 7 and 8. H termen from vein 4 to vein 7 very narrowly white, with white cilia; UNH paler brown with two slightly indistinct brown discal bands; the outer margin of the outer band is quite clearly delineated by a pale brown border. F ♀ 18 mm.

The only Trinidad specimens I have seen are the two taken by June and Floyd Preston 5.5 - 6.0 km south of Siparia on the road to Quinam Bay (♂ xi.1981; ♀ v.1982). This is apparently a rare species, perhaps restricted to the south-west peninsula. Larval foodplant and life history unknown.

64. *Autochton itylus* Hübner 1823
Plate 21
This species occurs in Venezuela, the Guyanas (TL Surinam), Brazil and the Amazon basin. Kaye (1904, 1921) listed it from

Trinidad on the basis of Crowfoot's (1893) list, but there are no specimens from Trinidad in the BMNH (Evans 1952). However, I have been able to confirm this as a Trinidad species (Cock 1982).

Ground colour blackish brown; white hyaline discal bar in spaces 1B, 2, cell, costa and apical spots in space 8 and sometimes 7. UNH brown with indistinct brown discal bands; all cilia concolorous in male, pale brown from vein 4 to 7 UNH in female. Illustration in Smart (1976, Page 112, No. 16). No costal fold; F ♂ 16mm, ♀ 16 mm.

This is not a common species, and seems to be restricted to lowland forest in eastern Trinidad - e.g. Cunapo Southern Road, milestone 9 1/2 (ii.1980), Valencia Forest (viii.1979, iv.1980), Aripo Savanna (i.1986, S. Alston-Smith) and Waller Field (xii.1980). Larval foodplant and life history unknown.

65. *Cabares potrillo reducta* Mabille & Boullet 1917

The subspecies *reducta* (TL Venezuela) occurs from Panama to Trinidad (Evans 1952), while the nominate subspecies occurs north of this to Mexico and in the Greater Antilles. Kaye (1914) adds this species to the Trinidad list from a St. Ann's record by G. E. Tryhane.

Ground colour brown; white hyaline spots F spaces 1 (vertical dash in upper 1/2 at 3/4; a dot immediately below this in lower 1/2), 2 (near vertical dash, excavate on inner and outer margins; the upper margin starting just beyond origin vein 3; the lower margin reaching level of spot in space 1B), 3 (a small vertical dash just beyond outer margin of spot in space 2), 7 (dot), 8 (dot), two in cell (lower spot: parrallel to spot in space 2; excavate inner and outer margin; lower margin just before origin of vein 3; upper spot: in two parts, the lower parrallel to spot in space 2, the upper along edge of cell parrallel to costa; the latter about twice as long as the former), 12 (parrallel to and about 2/3 as long as upper part of upper cell spot), costa (parrallel and contiguous to last; about 2/3 as long as last); the spots in cell, space 12 and costa form a straight line; head below pale brown; UNH with two weak discal bands of dark brown, extending indistinctly to UNF, the basal line terminating just basal to the costal hyaline spots and the distal line terminating just distal to the apical hyaline spots. Hyaline spots larger in female. Illustrations in Lewis (1974, Plate 81, No. 18, ssp. *potrillo* UNS), Riley (1975, Plate 22, No. 8, ssp. *potrillo* ♂), Brown & Heineman 1972, Plate IX, No. 13; ssp. *potrillo* ♂). No costal fold; F ♂ 17-18 mm, ♀ 20mm.

I have not taken this species in Trinidad. I have seen 3 males from St. Ann's (xi.1931-ii.1932, A. Hall in BMNH; 2 of iiii.1932, A. Hall in BMNH), one from St. Joseph (at 400 ft (i.e. probably on the slopes of Maracas Valley), xii. 1921, F.W. Jackson in HD), one from Arima (xii.1931-ii, 1932. A. Hall in BMNH) and a female labelled Trinidad in the BMNH; S. Alston-Smith reports a male in BA (St. Ann's, 5.v.1927). Thus all specimens with data were taken in the north during the dry season. Brown & Heineman (1972) suggest the habitat of ssp. *potrillo* in Jamaica is low vegetation under coconut palms. Such localities in Trinidad would be worth checking for this elusive skipper. On the other hand, the fact that no specimens have been taken for 50 years, indicates this species may no longer be resident in the island. Kendall & Rickard (1976) record the larval foodplant in Texas and Mexico as *Priva lappulacea* (L.) Pers. (Verbenaceae) mentioning that the small larvae are glossy black and that the larval shelers are difficult to find and recognise.

References

As this paper follows on directly from Cock (1986), only those references which are not cited in that paper are listed here. Thus, for details of Barcant 1970, Brown & Heineman 1972, Cock 1982, Evans 1952, Kaye 1921, 1940, Lewis 1974, Moss 1949, and Riley 1975 the references for Part 4 of this series (Cock 1986) should be consulted.

Biezanko, C.M. & Mielke, O.H.H. (1973). Contribução ao estudo faunístico dos Hesperiidae Americanos. IV Espécies do Rio Grande do Sul, Brasil, com notas taxonômicas e descrições de espécies novas (Lepidoptera). Acta Biologiae Parana, 2, 51-102.

Cock, M.J.W. (1984). Lepidoptera notes I-VI. Living World. Journal of the Trinidad and Tobago Field Naturalists' Club, 1983-1984, 35-37.

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.

Comstock, J. A. & Vazquez G. L. (1961). Estudios de los ciclos biologicos en Lepidopteros Mexicanos. Anales del Instituto de Biologia, 31, 349-448.

Cruttwell, R. E. (1974). Insects and mites attacking *Eupatorium odoratum* in the neotropics. 4. An annotated list of the insects and mites recorded from *Eupatorium odoratum* L., with a key to the types of damage found in Trinidad. Technical Bulletin of the Commonwealth Institute of Biological Control, 17, 87-125.

Kaye, W.J. (1904). A catalogue of the Lepidoptera Rhopalocera of Trinidad. Transactions of the Entomological Society of London, 1904, 159-224.

Kaye, W.J. (1914). Additions and corrections to my catalogue of the Lepidoptera Rhopalocera of Trinidad (1904). Transactions of the Entomological Society of London, 1913, 545-585.

Kendall, R.O. (1976). Larval foodplants for thirty species of skippers (Lepidoptera: Hesperiidae) from Mexico. Bulletin of the Allyn Museum, 39, 9 pp.

Kendall, R. O. & McGuire, W.W. (1975). Larval foodplants for twenty-one species of skippers (Lepidoptera: Hesperiidae) from Mexico. Bulletin of the Allyn Museum, 27,7 pp.

Kendall, R. O. & Rickard, M.A. (1976). Larval foodplants, spatial and temporal distribution for five skippers (Hesperiidae) from Texas. Journal of the Lepidopterists' Society, 30, 105-110.

Smart, P. (1976). The illustrated encyclopedia of the butterfly world. Hamlyn, Salamander Books, London, 275 pp.

Steinhauser, S.R. (1986). A review of the skippers of the *narcosius* group of species of the genus *Astraptes* Hübner (sensu Evans, 1952) and erection of a new genus. Lepidoptera: Hesperiidae. Bulletin of the Allyn Museum, 104, 43 pp.