

NEW ACCOUNT ON THE BUTTERFLIES (LEPIDOPTERA: RHOPALOCERA) OF SÃO TOMÉ E PRÍNCIPE

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Abstract: Butterflies (Hesperioidea and Papilionoidea) from São Tomé e Príncipe including those recently collected (2004-2010) are studied; specimens reported by Bacelar (1958) and in the Instituto de Investigação Científica Tropical collection, in Lisbon, Portugal are re-examined and material in the Centro de Investigação Agronómica e Tecnológica de São Tomé e Príncipe (CIAT) in the Potó, São Tomé, in the Museu Bocage in Lisbon and in some Portuguese private collections was also studied. Notes are presented on pre-existing records and on the geographical distribution of each one of the 116 species/subspecies names already reported from São Tomé e Príncipe. The correction of some previous identifications is analysed and the rhopaloceran endemicity rates of the country and of each one of its main islands are discussed.

Key words: Lepidoptera, Hesperioidea, Papilionoidea, new data, new records, distribution, endemicity rates, São Tomé, Príncipe.

Nueva aportación al estudio de las mariposas (Lepidoptera: Rhopalocera) de São Tomé e Príncipe

Resumen: Se estudian mariposas (Hesperioidea y Papilionoidea) de São Tomé e Príncipe, incluyendo todo el material cogido en los últimos años (2004-2010); se reexaminaron los ejemplares señalados por Bacelar (1958) y depositados en la colección del Instituto de Investigação Científica Tropical, en Lisboa, Portugal; se estudió además el material del Centro de Investigação Agronómica e Tecnológica de São Tomé e Príncipe (CIAT), en Potó, São Tomé, del Museu Bocage en Lisboa y de algunas colecciones particulares portuguesas. Se presentan notas sobre las citas anteriores y sobre la distribución geográfica conocida de cada una de las 116 especies/subespecies señaladas hasta ahora de São Tomé e Príncipe. Se analiza la corrección de algunas de las identificaciones previas y se discuten las tasas de endemismo de las mariposas diurnas del país y de cada una de sus islas principales.

Palabras clave: Lepidoptera, Hesperioidea, Papilionoidea, nuevos datos, novedades faunísticas, distribución, tasas de endemismo, São Tomé, Príncipe.

Nova contribuição para o estudo das borboletas (Lepidoptera: Rhopalocera) de São Tomé e Príncipe

Resumo: Estudam-se borboletas diurnas (Hesperioidea e Papilionoidea) de São Tomé e Príncipe, incluindo todo o material recentemente obtido (2004-2010); os exemplares referidos por Bacelar (1958) e na coleção do Instituto de Investigação Científica Tropical, em Lisboa, Portugal são reexaminados; observou-se ainda material depositado no Centro de Investigação Agronómica e Tecnológica de São Tomé e Príncipe (CIAT), no Potó, São Tomé, no Museu Bocage em Lisboa e em algumas coleções particulares portuguesas. Apresentam-se notas sobre as citações anteriores relativas à distribuição conhecida de cada uma das 116 espécies/subespécies assinaladas até ao presente em São Tomé e Príncipe. Analisa-se a correção de algumas identificações anteriores e discutem-se as taxas de endemismo dos lepidópteros diurnos do país e de cada uma das suas principais ilhas.

Palavras-chave: Lepidoptera, Hesperioidea, Papilionoidea, novos dados, novidades faunísticas, distribuição, taxas de endemismo, São Tomé, Príncipe.

Introduction

Samples of Hesperioidea and Papilionoidea butterflies obtained in São Tomé e Príncipe are studied, and 116 names of species/subspecies are known to have been assigned to the country.

The more than 2000 studied specimens, integrate representatives of 67 species and subspecies, and belong mainly to the entomological collection of the Instituto de Investigação Científica Tropical – Jardim Botânico Tropical (IICT / JBT) – Zoologia, (the former Centro de Zooloia, in text CZ) which includes also most the samples studied by Bacelar (1958); it integrates also six specimens collected in Uba-Budo in July 1917, recently discovered among the stuff of the extinct “Museu Agrícola do Ultramar” of the JBT – already identified, eventually by A. F. de Seabra (their probable collector), though never published; two more series of samples from São Tomé are also part of the IICT series, that of Carneiro Mendes (in the text CM), not numbered and long ago acquired by the Institute, and that of late Capt. Gastão Pessoa Guerreiro, recently offered (in the text PG) to the IICT; remaining studied specimens belong:

To the Museu Nacional de História Natural / Museu Bocage (abbreviated MBOC), Lisbon, concerning material obtained during the Mission held in June/July 1984 by the Faculty of Science and Museum Bocage (Mendes *et al.*, 1988 – São Tomé island only, intrgrated by the senior co-author);

To the Centro de Investigação Agronómica e Tecnológica de São Tomé e Príncipe, in Potó, São Tomé Island (in the text CIAT, ca 200 specimens, a collection organized in the colonial times by the IICT, then named Junta de Investigação Tropical);

As well as to some private Portuguese collections, namely those of the junior co-author (BS), of Lieut.-Col. António Figueira (AF), and of Mr. João Pedro Cardoso (JPC, obtained by Luis Miguel Cardoso).

Previous references to butterflies from the islands of São Tomé (ST) and Príncipe (PR) are also registered, including those in the NHM (2004).

The following abbreviations, presented by alphabetical order, will be also used along the text: AS – Collected by Artur Serrano, Zoology Professor in the Faculty of Sciences

in Lisbon; BM – Reported as in the Natural History Museum, London (before, British Museum / Natural History); CB – Collected by J. F. Castel-Branco, late researcher of the CZ; CP – Collected by Carlos Pires, retired researcher in the Instituto de Higiene e Medicina Tropical; D – dorsal or upper surface; DP – Collected by Décio de Passos, former meteorologist in the Príncipe Airport; EEA – Collected by the Brigada de Estudos de Entomologia Agrícola (mostly by its late CZ technician L. Paulos); FO – Collected by Fernando de Oliveira; MB – Collection of the Museu Nacional de História Natural / Museu Bocage, in Lisbon, prior to the March 1978 devastating fire (their identifications could never be confirmed); LM – Collected by the senior co-author; MCST – Missão Científica de São Tomé, co-ordinated by F. Frade: main collector L. Paulos, but also F. Frade, A. Bacelar and Castel-Branco; RN – Collected by Rosário Nunes retired researcher of the CZ; nn – no registration number; SB – Collected by A. Frederico de Seabra; ST&PR – São Tomé e Príncipe; TD – Collected by J. A. Travassos Dias, late researcher of the CZ; V – Ventral or under surface.

The country is composed by two main islands, ST and PR, plus a few small islets (total area, ca. 1000 Km²) and is located in the Guinea Gulf being separated from the western coast of Africa (Equatorial Guinea and Gaboon) by ca. 300 Km. minimum; crossed by the Equator at the Ilheu das Rolas, close to the southern coast of ST, it extends between ca. 00°01'–00°25' N and 06°28'–06°46' E (ST) and 01°30'–01°42' N and 07°19'–07°28' E (PR). The islands are volcanic and mountainous.

“Roça” (along the text, R.) is the Portuguese name for big farms in ST&PR, including a main house, worker's houses, transformation area, plantation fields (mainly coffee and/or cocoa according to altitude), almost always forest remains and (in the bigger ones) a school and an hospital. Most of them are today abandoned and/or partially collapsed, some were recuperated and some are transformed in rural tourism institutions, though extensive plantations of cocoa and coffee are still impressive and some of non- or poorly disturbed forest patches remain more or less well preserved. Most of the specimens obtained in Bombom or between Bombom and the Airport (PR) were collected hovering or feeding on thickets of flowering *Stachytarpheta* sp. (Verbenaceae) and those in the R. Bombaim (ST) mainly on coffee blooms (*Coffea arabica* – Rubiaceae).

The almost non-disturbed higher central area of ST, integrates the Santhomese portion of the Obó National Park, with endemic vegetation and a quite well preserved forest; most of the mountainous central and southern part of Príncipe is also covered by pristine forests and concerns the part of the Obó National Park in this island. Only in a reduced marginal area in northern ST it is possible to find original savanna, with abundant Gramineae and in lower coastal areas with trees like the baobab (*Adansonia digitata* – Malvaceae) and the more or less spontaneous tamarind (*Tamarindus indica* – Fabaceae). Higher areas in both islands remain poorly prospected, according to their inaccessibility.

The CIAT registration book, concerning all the zoological collection deposited in this institution (not only the entomological ones), could not be traced when we visited this institution (LM, 2006 and 2010) and it was said to be (eventually) in the correspondent Ministry, in the capital town. Consequently, it was impossible to consult and a few data

only (no precise locations, no dates) concerning each one of the examined specimens could be taken; the existing labels inform exclusively about the island – ST or PR (printed) – and registration number (manual) what will be transcribed ahead.

Taxa not collected nor even observed during more than 50 years (so, none data from 1970 on) are considered as eventually extinct even if the studied samples were originally correctly labelled and even if their original samples were not misidentified.

Photos are presented to each one of the studied endemic species/subspecies, to the more recently assigned faunistic novelties or relatively to species on which special comments are produced; photos of the entire specimen and of the male genitalia concerning *Borbo fatuellus* samples from ST and PR as well as (for comparison) from other countries are also presented, due to the *B. f. thomea* lack of validity relatively to the nominate subspecies as previously discussed (Mendes & Bivar-de-Sousa, 2012); photos are also presented relatively to *Acraea jodutta* populations in ST and in PR. Species geographical range and caterpillars' host-plants are reported mainly according to Ackery *et al.*, 1995 and to D'Abrera, 1997.

Despite the small extension of both islands, their heterogeneity, mainly in what the orogeny is concerned, led to the existence in ST and in PR of very different biotopes in geographically quite close localities; so, a gazetteer is presented concerning the names of the ca 100 localities from where butterflies were till now noticed from the country (Table I); for each locality name the Administrative Province and approximate coordinates (longitude, latitude and altitude) based in the 1: 25000 maps of both islands (JIU, 1962, 1961–1962) are reported. When more than one name is known for one same locality, the less used name is remitted to the recent, commonest one. Two ST localities were considered untraceable even for people from the country and they quite probably concern disappeared “Roças” or misspelling labelled (or published) names.

Taxonomy

Superfamily **HESPERIOIDEA** Latreille, 1809

Family **HESPERIIDAE** Latreille, 1809

Subfamily **Coeliadinae** Evans, 1937

Coeliades bocagei (Sharpe, 1893)

Fig. 1-3.

MATERIAL EXAMINED: **PR**: Bombom to Airport, 26/7-19/8/10, 08.30-11.30 h, LM, 2♂♂1♀, (CZ 5790). **ST**: Ilhéu das Cabras, 13/11/93, 1♂1♀ (JPC 00730074). Two more specimens were seen in the wing (LM), during the 2006 “gravana” (dry season) both in the Bombom, forest edge close to St^a Rita beach (29/7, and 2/8), both flying fast, under completely clouded sky ca 11.00 h. One further specimen was seen and photographed (Fig. 1) feeding on the same *Stachytarpheta* bush where specimens of sample CZ 5790 were collected.

Sharpe (1893, as *Ismene bocagei*) describes the species from Angolares (ST); its holotype and only original specimen was destroyed during the 1978 MB fire (indeed, Fernandes, 1958, reports it was there, though in quite bad condition). Holland (1896, as *Rhopalocampta bocagei*) assigns ST, with no details. Aurivillius (1910) registers 1♂ from Baía Oeste (PR), Riley (1928) 3♂♂5♀♀ and Evans (1937) 5♂♂7♀♀ from ST (BM, no details). There is no sexual dimorphism.

Table I. – Localities from where butterflies samples were assigned in ST and PR Islands, their correspondent Administrative Provinces and approximate longitude, latitude and altitude (in meters).

Príncipe Island (PR)				
Localities	Adminstr. Province	Latitude	Longitude	Altitude
Airport (= Aeroporto)	Pagué	01° 40' N	07° 25' E	180
Baía das Agulhas	Pagué	01° 37' N	07° 22' E	< 50
Baía Oeste	See <i>Baía das Agulhas</i>	---	---	---
Bombom	Pagué	01° 42' N	07° 24' E	< 50
Bombom to Airport	Pagué	01° 41' N	07° 24' E	ca 90
Maria Correia	Pagué	01° 36' N	07° 20' E	50
Porto Real	Pagué	01° 39' N	07° 24' E	120
Príncipe (NHM, 2004)	Pagué	01° 37' N	07° 27' E	< 50
R. Esperança	Pagué	01° 38' N	07° 25' E	130
R. Francisco	See <i>Maria Correia</i>	---	---	---
R. Francisco Mantero	See <i>Maria Correia</i>	---	---	---
R. Infante D. Henrique	Pagué	01° 34' N	07° 24' E	220
R. S. Carlos do Fundão	Pagué	01° 37' N	07° 23' E	150
R. Sundry	Pagué	01° 40' N	07° 23' E	160
Stª Rita	Pagué	01° 41' N	07° 25' E	150
Stª António town	Pagué	01° 39' N	07° 25' E	< 50
Terreiro Velho	Pagué	01° 37' N	07° 26' E	220
Id. (NHM, 2004)	Pagué	01° 37' N	07° 25' E	?

São Tomé Island (ST)				
Locality	Admin. Province	Longitude	Latitude	Altitude (m)
Agostinho Neto	Lobata	00° 22' N	06° 39' E	160
Água Bomba	See <i>R. Bombaim</i>	---	---	---
Água Izé	Cantagalo	00° 13' N	06° 44' E	< 50
Água João	Caué	00° 11' N	06° 39' E	150
Ana Chaves, Baía de	See <i>S. Tomé (town)</i>	---	---	---
Angolares	Caué	00° 08' N	06° 40' E	< 50
Angra Toldo	Caué	00° 10' N	06° 40' E	< 50
Bindá	Lembá	00° 13' N	06° 28' E	120
Boavista	Mé Zóchi	00° 17' N	06° 38' E	900
Boavista to S. Nicolau	Mé Zóchi	00° 17' N	06° 38' E	900
Bobo-Forro	Lobata	00° 20' N	06° 48' E	120
Bombaim	See <i>R. Bombaim</i>	---	---	---
Bom Sucesso	Mé Zóchi	00° 17' N	06° 37' E	1150
Bongoló	Untraceable	?	?	?
Buenos Aires	Untraceable	?	?	?
Fernão Dias	Lobata	00° 25' N	06° 41' E	< 50
Guadalupe	Lobata	00° 23' N	06° 39' E	150
Guinquelheró	Água Grande	00° 22' N	06° 44' E	< 50
Ilhéu das Cabras	Água Grande	00° 25' N	06° 43' E	< 50
Ilhéu das Rolas	Caué	00° 00' N	06° 32' E	50
Lagoa Amélia	Mé Zóchi	00° 17' N	06° 36' E	1400
Lagoa (= Laguna) Azul	Lembá	00° 25' N	06° 37' E	< 50
Macambrará	Mé Zóchi	00° 17' N	06° 37' E	1200
Manuel Carogo	See <i>Rio Ió Grande</i>	---	---	---
Margens do Caué	Caué	00° 06' N	06° 35' E	< 50
Monte Café	See <i>R. Monte Café</i>	---	---	---
Morro do Peixe	Lobata	00° 24' N	06° 39' E	60
Neves	Lembá	00° 21' N	06° 33' E	< 50
Obó Vermelho	Lobata	00° 24' N	06° 37' E	200
Ponta Furada	Lembá	00° 16' N	06° 29' E	150
Porto Alegre	Caué	00° 02' N	06° 32' E	< 50
Potó	Mé Zóchi	00° 20' N	06° 40' E	300
Praia das Conchas	Lobata	00° 25' N	06° 37' E	< 50
Praia de Diogo Nunes	Água Grande	00° 23' N	06° 42' E	< 50
Praia Jalé	Caué	00° 02' N	06° 31' E	< 50
Praia Melão	Mé Zóchi	00° 18' N	06° 46' E	< 50
Praia Pantufo	Água Grande	00° 19' N	06° 45' E	< 50
Ribeira Palma	Lembá	00° 20' N	06° 35' E	400-600
Ribeira Peixe	See <i>R. Preserverança</i>	---	---	---
Rio Ió Grande	Caué	00° 07' N	06° 38' E	< 50
R. Água Izé	See <i>Água Izé</i>	---	---	---
R. Amparo II	Mé Zóchi	00° 19' N	06° 43' E	80
R. Bombaim	Mé Zóchi	00° 15' N	06° 38' E	450
R. Chamiço	Mé Zóchi	00° 19' N	06° 36' E	850
R. Colónia Açoreana	Cantagalo	00° 11' N	06° 42' E	200
R. Diogo Vaz	Lembá	00° 19' N	06° 30' E	150
R. Granja	Caué	00° 09' N	06° 38' E	200
R. Macaco	Mé Zóchi	00° 21' N	06° 39' E	250

São Tomé Island (ST)				
Locality	Admin. Province	Longitude	Latitude	Altitude (m)
R. Monte Café	Mé Zóchi	00° 18' N	06° 39' E	700
Ibid. S. Pedro	Mé Zóchi	00° 18' N	06° 38' E	1100
R. Monte Forte	Lembá	00° 20' N	06° 32' E	80
R. Nova Moka	Mé Zóchi	00° 17' N	06° 34' E	800
R. Ponta Figo	Lembá	00° 21' N	06° 33' E	80
R. Porto Alegre	See <i>Porto Alegre</i>	---	---	---
R. Preserverança	Caué	00° 05' N	06° 37' E	< 50
R. Rio do Ouro	See <i>Agostinho Neto</i>	---	---	---
R. Stª Catarina	See <i>Stª Catarina</i>	---	---	---
R. S. João	Caué	00° 09' N	06° 39' E	100
R. S. Nicolau	See <i>S. Nicolau</i>	---	---	---
R. Saudade	Mé Zóchi	00° 17' N	06° 39' E	800
R. Ubabudo	Cantagalo	00° 16' N	06° 43' E	280
Santana	Cantagalo	00° 15' N	06° 45' E	< 50
Stª Catarina	Lembá	00° 16' N	06° 29' E	< 50
Stª Maria	Mé Zóchi	00° 21' N	06° 36' E	500
S. Gabriel	Mé Zóchi	00° 19' N	06° 45' E	< 50
S. Miguel	Lembá	00° 08' N	06° 30' E	50
S. Nicolau	Mé Zóchi	00° 17' N	06° 38' E	900
S. Tomé (town)	Água Grande	00° 20' N	06° 44' E	< 50
Id. (NHM, 2004)	Água Grande	00° 19' N	06° 43' E	?
Saudade	See <i>R. Saudade</i>	---	---	---
Trindade	Mé Zóchi	00° 18' N	06° 41' E	300
Uba-Budo	See <i>R. Ubabudo</i>	---	---	---
Vista Alegre	Mé Zóchi	00° 19' N	06° 41' E	220
Zampalma	Mé Zóchi	00° 16' N	06° 37' E	700

C. bocagei is endemic from ST&PR and flies in both islands; it is considered as “Vulnerable” by the ECOFAC (1995).

Coeliades forestan forestan (Stoll, 1782)

MATERIAL EXAMINED: **PR**: Bombom, near beach, garden and forest margin vegetation, 31/7/04, LM, 1♀ (CZ 5212); 2/8/04, 1♂ (CZ 5213); 4/8/04, 1♀ (CZ 5216); 11/8/05, 1♂2♀♀ (CZ 5246); 15/8/05, 1♂ (CZ 5251); 27/7-9/8/06, 6♂♂4♀♀ (CZ 5273); 26/7-16/8/10, 16♂♂2♀♀ (CZ 5788). Bombom to Airport, forest margins, 12/8/05, LM, 1♂2♀♀ (CZ 5247); 15/8/05, 3♂♂1♀ (CZ 5250); 28/7-5/8/06, 6♂♂1♀ (CZ 5274); 26/7-19/8/10, 27♂♂8♀♀ (CZ 5789). Id, 26/7-19/8/10, 08.30-11.30 h, LM, 4♂♂ (CZ 5790). R. Sundry, 16/8/05, LM, 1♂ (CZ 5244). **ST**: Água Izé, 19/6/84, 4♂♂ (MBOC nn). Ilhéu das Rolas, 3/8/05, LM, 1♀ (CZ 5239); 30/10-3/11/05, AS, 4♂♂ (CZ 5260). Morro Peixe, 16/6/84, 1♂ (MBOC nn). R. Porto Alegre, 11/10/54, MCST, 1♀ (CZ 2358). S. Tomé (town) *ex larva*, 1/2/71, 1♂ (PG 0184). Not labelled, 3♂♂ (CIAT 175-176) plus 1♂ (CIAT 494, det. as *Callopostria* sp.). The species was very abundant in Rolas (ST), in Bombom and along road Bombom-Airport (PR) during 8/05 and 11/05 and in two last areas in 7-8/06 and mainly in the same months of 2010, so that much more specimens were seen than collected (LM and AS).

Sharpe (1893, no details), Riley (1928, 11♂♂14♀♀, BM) and Evans (1937, no details), all sub *Rhopalocampta*, assign ST and last one PR also, though none precise location is noticed. Bacelar (1958a) reports the reexamined Porto Alegre female.

C. f. forestan is known along Africa south of Sahara except for Western Cape, plus in Reunion, Mauritius and Comoro. In ST&PR it flies in both islands and seems to be one of the commonest species at least during the dry season.

Caterpillars feed on several families (Asclepiadaceae, Combrretaceae, Fabaceae, Geraniaceae, Malpighiaceae, Malvaceae, Rhizophoraceae, Rutaceae and Solanaceae) and may be found, further, on cocoa (*Theobroma cacao*, Sterculiaceae). People eat them along West Africa (v. g. Angola, Congo, Zaire), though this is not the case for ST&PR.

Coeliades hanno (Plötz, 1879)

MATERIAL EXAMINED: None.

The species was reported from ST by Riley (1928, sub *Rhopalocampta* – no localities, no dates, 1♂2♀♀, BM) and later, by Evans (1937, same material?). Larsen (2005) points, again without details,

the same island and confirms the BM sample existence. However, *C. hanno* was not seen in the country from, at least, the last eight decades, probably one century.

C. hanno flies from Senegal to Kenya and Tanzania, and to Angola.

Caterpillar's host-plants are Malpighiaceae.

Subfamily **Pyrginae** Burmeister, 1878

Tagiades flesus (Fabricius, 1781)

MATERIAL EXAMINED: **PR**: Bombom to Airport, 26/7-19/8/10, on *Stachytarpheta* flowers, LM, 2♂♂ (CZ 5789); Id, 08.30-11.30 h, LM, 1♂ (CZ 5790). One more specimen was seen (not collected) in the morning, feeding in the same vegetation thicket; *T. flesus* appearance (size, shape, colour and wings position when in rest) prevents any chance of misidentification.

Sharpe (1893) assigns material from ST (no details) and Bacelar (1948, MB) points 1 disappeared ♂ (from 5/1888, det. E. Sharpe sub *Pterygospidea*, MB) obtained in Angolares by F. Newton. Evans (1937) reports 3♂♂5♀♀ from PR (no details, BM).

T. flesus is known in Africa south of Sahara except for Western Cape, mainly along forests and well-wooded areas. It is known in both, ST and PR.

Caterpillars are known on *Dioscorea* (Dioscoreaceae), *Grewia* (Tiliaceae), and exceptionally, on *Teclaea* (Portulacaceae).

Subfamily **Hesperiinae** Latreille, 1809

Andronymus neander thomasi Riley, 1928

MATERIAL EXAMINED: None.

The subspecies was described as species (Riley, 1928,) upon 1♂ from ST (no data, BM) and later Evans (1937) assigns 1♂ from ST and 1♀ from PR and recognises the taxon subspecific status. No more material was ever registered (neither collected nor seen) though at least the ♂ remains in the BM (Larsen, *com. pers.*). The species wing pattern is unique among the country's butterflies. None specimen was reported during the last seven decades.

The species flies from West Africa southwards to Angola and eastwards to Kenya and Natal (South Africa). *A. neander thomasi*, if not extinct, will occur in both, ST and PR Islands.

Host-plants for nominate subspecies are Fabaceae and Malpighiaceae.

Borbo borbonica borbonica (Boisduval, 1833)

MATERIAL EXAMINED: **PR**: Bombom, near beach, 26/7-16/8/10, LM, 1♀ (CZ 5788). Bombom to Airport, forest margins among dense herbaceous vegetation, close to a brook, 28/7-5/8/06, LM, 1♀ (CZ 5274). Id, forest margins, 26/7-19/8/10, LM, 1♂2♀♀ (CZ 5789). Near Terreiro Velho, forest margin, 3/8/04, LM, 1♀ (CZ 5215). Not labelled, 3♂♂1♀ (CIAT 648-649, nn). **ST**: Ilhéu das Rolas, 30/10-3/11/05, AS, 1♀ (CZ 5260). R. Bombaim, 23-27/7/06, LM, 2♀♀ (CZ 5268); 20-23/8/10, 1♂1♀ (CZ 5791).

Aurivillius (1910, sub *Pelopidas*) reports 1♀ from R. Infante D. Henrique (PR) and Mendes & Bivar-de-Sousa (2012) assign, without details, the species presence in the two islands based in the examined material listed above.

B. b. borbonica is widely dispersed along Afrotropical and Madagascan Regions except for Seychelles.

Caterpillars feed on Poaceae (*Erharta*, *Saccharum*, *Oryza*, *Pennisetum*, *Leersia*, *Sorghum* and *Zea*).

Borbo perobscura (Druce, 1912)

MATERIAL EXAMINED: None.

Riley (1928, sub *Pelopidas detecta* – 2♂♂2♀♀ coll. Barns) and Evans (1937, sub *B. detecta* – 2♂♂2♀♀, in the BM – same material?) assigne the species from ST – precise collecting localities, unknown. Larsen (*com. pers.*) saw BM material from the Boavista (ST), quite probably concerning the previously reported sample(s). The species was not found in the country from the last seven decades on.

Ackery *et al.* (1995) reports *B. detecta* (as it was formerly identified) to occur along most of sub-Saharan Africa, but Larsen (2005) considers *B. detecta* as probably exclusive from East and South Africa, where it eventually vicariates *B. perobscura* (it occurs also in part of Angola).

Caterpillars live on Poaceae.

Borbo fatuellus fatuellus (Hopffer, 1855)

(= *Borbo fatuellus thomea* (Evans, 1937) after Mendes & Bivar-de-Sousa, 2012)

Fig. 4-17.

MATERIAL EXAMINED: **PR**: Airport, 25/11/55, DP, 1♂ (CZ 2413). Bombom to Airport, forest margins, 26/7-19/8/10, LM, 1♂ (CZ 5789). Id, 08.30-11.30 h, LM, 2♂♂ (CZ 5790). R. Sundry, 9/11/54, MCST, 1 ex. without abdomen (CZ 2309). **ST**: Boavista to S. Nicolau, 15/6/84, 3♂♂2♀♀ (MBOC nn). R. Bombaim, low vegetation, 23-27/7/06, LM, 1♂ (CZ 5268); 20-23/8/10, 2♂♂ (CZ 5791). Near S. Gabriel, 17/6/84, 2♀♀ (MBOC nn). No locality, no date, 1♂ (AF HES11106).

Aurivillius (1910, as *Baoris fatuellus*) assigns 4♂♂ from Água Izé (ST) and Riley (1928, sub *Parnara fatuellus*) reports 17♂♂18♀♀ from the same island (though neither localities nor dates were detailed, BM). Evans (1937) describes *Baoris fatuellus thomea* upon 7♂♂7♀♀ from PR and 13♂♂14♀♀ from ST (precise localities and dates once again omissives, BM). ST and PR examined specimens from 1954-55 were identified by Bacelar (1958a) as *Pelopides aff. fanta*.

The species flies along sub-Saharan Africa and in southern Arabia, and two subspecies were described by Evans, one, as noted, from ST&PR, the other from Comoros. Larsen (2005) suspects, however, of *B. fatuellus thomea* validity and notes that “smaller” is reported as being the only difference between this one and the nominate subspecies. The examined material has, indeed, slightly smaller forewing length than a few further specimens in the CZ collection from other geographical origins: (♂♂): 14.5-15.2 mm (ST) (Fig. 7) and 14.4-16.0 mm (PR) (Fig. 8) – Evans, 1937 reports 15.5 mm for his subspecies – against 16.9 mm in 1♂ from Angola / Cabinda (Fig. 9), 16.6 mm in a ♂ from Angola / Luanda (Fig. 10), 17.0 mm, in a ♂ from Angola / Novo Redondo (Fig. 11) and 16.8 mm in 1♂ from Guinea-Bissau / Cufada Lagoon National Park (Fig. 12); Evans (1937) assigned 17 mm to the nominate subspecies.

The valves of some specimens from ST and from PR shall be slightly more protruding apically than those of males from Angola and from Guinea-Bissau, but these differences are so slight (Fig. 11-17) and this feature is so variable even inside one same specimen (cf. Figs. 11 and 12 concerning left and right valves of one same male, CZ, 5791, from PR) that following Larsen (2005), with base on the wingspan analysis and on the male genitalia variability, we sustained the non-validity of *Borbo fatuellus thomea* (Evans, 1937) (Mendes & Bivar-de-Sousa, 2012). Caterpillars feed on Poaceae (e.g. *Setaria*, *Pennisetum*, *Panicum* and *Digitaria*).

Gegenes niso brevicornis (Plötz, 1884)

MATERIAL EXAMINED: **PR**: Bombom to Airport, forest margins in dense low vegetation, 26/7-19/8/2010, 08.30-11.30 h, LM, 1♂ (CZ 5790).

Sharpe (1893, sub *Parnara* – no details) reported the subspecies from ST more than one century ago in what concerned its only known reference to the country till now. Its occurrence in the PR (the above reported male, though without details) was previously pointed by Mendes & Bivar-de-Sousa (2012).

The subspecies distributes along Africa south of Sahara except for its southernmost areas.

Host-plants are *Zea*, *Pennisetum*, *Erharta*, *Imperata* and *Hyparrhenia* (Poaceae).

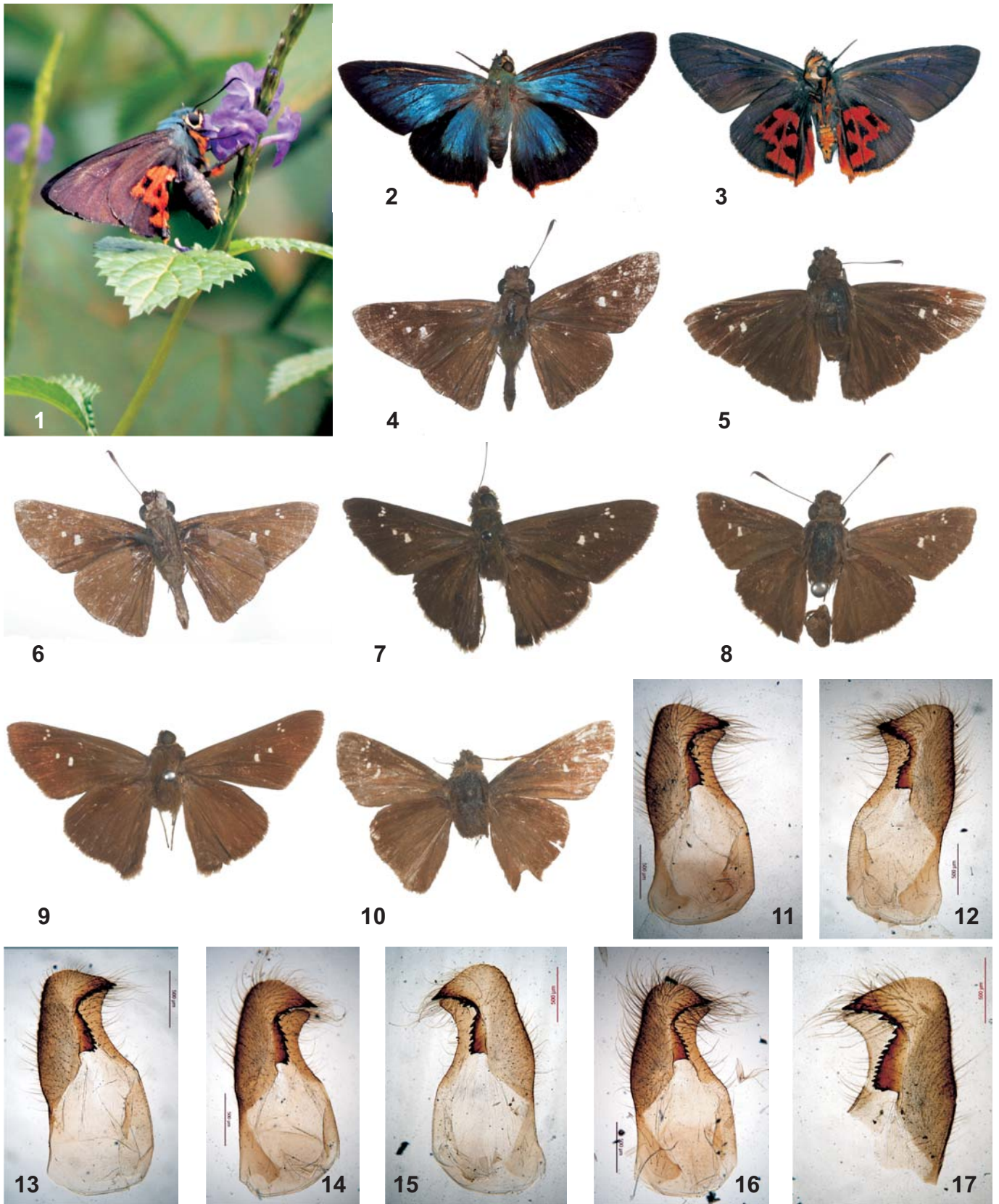


Fig. 1. *Coeliades bocagei* specimen feeding on *Stachytarpheta* flowers; road berm between Bombom and Airport (PR). **Fig. 2.** *Coeliades bocagei* male D. **Fig. 3.** *Coeliades bocagei* male V. **Fig. 4.** *Borbo fatuellus* male D from ST (AF HES11106). **Fig. 5.** *Borbo fatuellus* male D from PR: Bombom to Airport (CZ 5790). **Fig. 6.** *Borbo fatuellus* male V from ST (AF-HES11106). **Fig. 7.** *Borbo fatuellus* male D from Guinea-Bissau: Cufada Lagoons National Park (CZ 5186) – for comparison. **Fig. 8.** *Borbo fatuellus* male D from Angola: Cabinda: Buco Zau (CZ-nn) – for comparison. **Fig. 9.** *Borbo fatuellus* male D from Angola from Luanda: Luanda (BS-14537) – for comparison. **Fig. 10.** *Borbo fatuellus* male D from Angola: Kuanza Sul: Novo Redondo (BS 14151) – for comparison. **Fig. 11.** *Borbo fatuellus* male valve from ST: R. Bombaim (CZ, 5791). **Fig. 12.** *Borbo fatuellus* male, same specimen of Fig. 11, the opposite valve. **Fig. 13.** *Borbo fatuellus* male valve. PR: Bombom to the Airport (CZ 5790). **Fig. 14.** *Borbo fatuellus* male valve. Guinea-Bissau: Cufada L. Nat. Park (CZ-5186) – for comparison. **Fig. 15.** *Borbo fatuellus* male valve. Angola: Cabinda – for comparison. **Fig. 16.** *Borbo fatuellus* male valve. Angola: Luanda – for comparison. **Fig. 17.** *Borbo fatuellus* male valve. Angola: Novo Redondo – for comparison.

Papilio nerminae Koçac, 1983(= *Papilio bromius furvus* Joicey & Talbot, 1926)(= *P. chrapkowskoides nerminae* Koçac, 1983)

Fig. 18-19.

MATERIAL EXAMINED: **ST**: Uba-Budo, 7/1917, n. 1582, 1♂ (CZ 5800), det. as *P. bromius*. Not labelled, 1♂ (CIAT 74, det. as *P. bromius*) 2♂♂ (CIAT 549, 689).

Sharpe (1893 sub *P. bromius*) is the first author to report the taxon to the country, from Angolares. Joicey & Talbot (1926) describe *Papilio bromius furvus* upon 2♂♂ collected by Barns in ST (precise localities and dates unknown, only registered "...interior of the island... elevation of about 800 m...") and assign they are deposited in the Hill Museum. Bacelar (1948, as *P. bromius*, coll. Newton, MB) registers 1♀ from R. Saudade and 1♀ from Angolares (E. Sharpe det.) disappeared in the 1978 fire or even before that. Viejo (1984, as *P. bromius*) points the species to the same island based in Joicey & Talbot (1926). Pyrcz (1992, as *P. bromius furvus*) reports Bombaim and Água João. Wojtusiak & Pyrcz (1997) consider the revalidation of *Papilio furvus* upon material from Bombaim, and report new samples from Bombaim, Macambará, Zampalma, Manuel Carço, Angra Toldo, Água João, Rio Ió Grande and S. Miguel. D'Abreu (1997, as *P. b. furvus*) comments the species name and Larsen (2005) justifies the recent nomenclatural modification due to homonymy, considering the taxon as *P. chrapkowskoides nerminae* Koçac, 1983. We believe quite probable that the specimen from Uba-Budo, acconditioned among a few other butterflies in a small box recently found in the former Museu Agrícola do Ultramar assets (today integrated in the JBT, and now registered as CZ 5800) was collected by A. F. de Seabra or by someone in his team, according to the known records (Seabra, 1922).

The species is endemic from ST.

Caterpillars feed (Wostusiak & Pyrcz, 1997) on *Zanthoxylum* sp. and cultivated *Citrus* (Rutaceae).

Papilio dardanus sulfurea Palisot de Beauvois, 1806

MATERIAL EXAMINED: None.

Ackery *et al.* (1995) notice the subspecies as described from PR and D'Abreu (1997) register it is endemic from Bioko (Fernando Po) and PR – detailed distribution unknown for both islands. Larsen (2005) assigns Bioko only, despite the holotype eventually collected in PR. As far as we know, after its description the species was never more seen in ST&PR and its real presence in the country remains, so, uncertain. Indeed, Pyrcz (1992, as *P. d. f. sulphurous* Brown) reports one PR unconfirmed Canu's citation of the subspecies, though later Canu (1994) himself states «...je n'ai jamais rencontré *Papilio dardanus sulfureus* à Principe; *Thomas PYRCZ non plus; a-t-il jamais existé ici? N'y a-t-il pas confusion de localité avec Fernando-Po? A-t-il disparu? ...*». The species presence in the country remains, so, quite dubious and *P. dardanus* is not reported by the ECOFAC (1995).

Host-plants known to other *P. dardanus* subspecies are *Calodendron*, *Clausena*, *Citrus*, *Fagara*, *Teclea*, *Vepris*, *Toddalia* (Rutaceae) and *Xymalus* (Monimiaceae).

Papilio demodocus demodocus Esper, 1798

MATERIAL EXAMINED: **PR**: Airport, 2/11/1955, DP, 1♂ (CZ 2405); 9/11/1955, 1♀ (CZ 2407); 17/11/1955, 1♂1♀ (CZ 2409). Bombom, close to beach, garden in forest margin, 12/8/2005, LM, 1♂ (CZ 5247); 17/8/2005, 1♂ (CZ 5253); 27/7-9/8/2006, 1♂3♀♀ (CZ 5273); 26/7-16/8/2010, 2♂♂2♀♀ (CZ 5788). Bombom to Airport, forest margins, 12/8/2005, LM, 1♀ (CZ 5247); 13/8/2005, 1♀ (CZ 5248); 28/7-5/8/2006, 1♀ (CZ 5274); 26/7-16/8/2010, 6♂♂1♀ (CZ 5789). Id, 08.30-11.30 h, LM, 1♂ (CZ 5790). Maria Correia, 26/5/1986, CP, 2♂♂1♀ (BS 18761, 1893-18938). R. Esperança,

13/9/1954, MCST, 1♂1♀ (CZ 2380). R. Sundry, 8/11/1954, MCST, 2♂♂1♀ (CZ 2327). **ST**: Água Izé, 19/6/1984, 4♂♂ (MBOC nn). Boavista, 6/1984, 1♂ (MBOC nn). Boavista to S. Nicolau, 2/5/1986, CP, 2♂♂ (BS 18792-18793); 17/5/1986, 3♂♂1♀ (BS 18792-18795). Guinguelheró, 17/7/1955, MCST, 1♂ (CZ 2512). Ilhéu das Cabras, 13/11/1993, 1♂1♀ (JPC 0070-0071). Ilhéu das Rolas, 12/10/1954, MCST, 1♀ (CZ 2281); 2/8/2005, LM, 1♂ (CZ 5328). Morro Peixe, 4/7/1984, 1♂ (MBOC nn). Porto Alegre, 12/10/1954, 1♀ (CZ 2384); 22/6/1984, 2♂♂ (MBOC nn). Praia de Diogo Nunes, 27/11/1954, MCST, 1♀ (CZ 2387). R. Bombaim, 23-25/7/2006, LM, 1♀ (CZ 5268); 20-23/8/2010, 1♂ (CZ 5791). R. Perserverança, Ribeira Peixe, 6/10/1954, MCST, 1♀ (CZ 2360). R. Rio do Ouro, 27/12/1970, 1♀ (PG 0009). R. Saudade, 24/11/1954, MCST, 1♂ (CZ 2283); 9/12/1954, 1♂ (CZ 2506). R. Ubabudo, 5/12/1954, MCST, 1♀ (CZ 2499). S. Nicolau, 6/1984, 1♂ (MBOC nn). S. Tomé (Ana Chaves Bay), 29/12/190, 1♂ (PG 0011). Uba-Budo, 7/1917, 1♂1♀, n. 562, already identified (CZ 5800). Vista Alegre, 17/5/1986, CP, 1♀ (BS 18794). No locality, 1915 and 1920, SB, 2♂♂1pupa (CZ 2). Not labelled, 6ex (CIAT 56, 128, 147, 633, nn). During 7-8/2004-2006 and 2010, much more specimens were seen in the wing (LM) all over PR (Bombom, Bombom to Airport, St António, roads to Sundry and Terreiro Velho) and ST (Água Izé, Angolares, Bombaim, Guadalupe, Ilhéu das Rolas, Neves, Porto Alegre, Potó, Praia das Conchas, Praia Jalé, R. Monte Forte, R. S. João, Santana, S. Catarina, S. Nicolau, São Tomé town, and Trindade plus all intermediate roads). Though none specimen has been collected in 11/2005, AS (*pers. com.*) noted it was quite common around R. Sundry, Bombom and Rolas islet.

Snellen (1873) and Sharpe (1893), both as *P. demoleus*, assign the species respectively from PR and ST (no details). Aurivillius (1910) reports 1♂1♀ from Água Izé, 1♀ from "Praia" (beach) – eventually in the capital town – and 9♂♂4♀♀ from R. Infante D. Henrique. Bacelar (1948) registers samples determined by E. Sharpe, from Angolares (3♀♀) and Saudade (2♂♂) (MB); later Bacelar (1958a, sub *P. demodocus* and its ab. *nubila*), reports most of the re-examined specimens; she registers also 2♂♂, 3/11/1954 (CZ-2515) (MCST, CB, in the field-book dated as 2/8/1955) from R. Sundry, impossible to trace, that must be considered lost, and assigns the Porto Alegre ♀ (ST: CZ, 2384) as collected in the R. Sundry (PR) – field-books, consulted. Viejo (1984) reports the species to ST based in Bacelar (1948). Pyrcz (1992) saw material from Stº António, Terreiro Velho, Bombaim, Água João, Água Izé and Lagoa Azul. Large and strikingly yellow and black, the species is quite noticeable, even when driving, being very common except in deep forest. Like a few small Lycaenidae and as *Coeliades forestan*, it will be one of the commonest butterflies in ST&PR all around the year. As assigned relatively to *P. nerminae*, we believe that the two specimens above reported as from Uba-Budo were collected by A. F. de Seabra or by someone in his team, according to the known records (Seabra, 1922).

Nominate subspecies of *P. demodocus* occurs along Afro-tropical Region except for Socotra Island where an endemic subspecies flies, and is known to be widespread in both, ST and PR.

Caterpillars feed on a wide variety of host-plants, mainly on Rutaceae.

Graphium angolanus baronis Ungemach, 1932

MATERIAL EXAMINED: None.

Smith & Vane-Wright (2001, as *G. a. calabar* – BM) register the subspecies from ST certainly upon the same material that was later reported (NHM, 2004) as obtained in São Thome, West Africa – 0° 19' N, 6° 43' E. They support (and we agree) that it shall concern an accidental colonization or a label error. Larsen (2005) notes also that the subspecies occurs along most of Africa but that its real occurrence in ST&PR must not be considered.

Host-plants are *Annona*, *Uvaria* (Annonaceae), *Landolphia* (Apocynaceae) and *Sphedammocarpus* (Malpighiaceae).

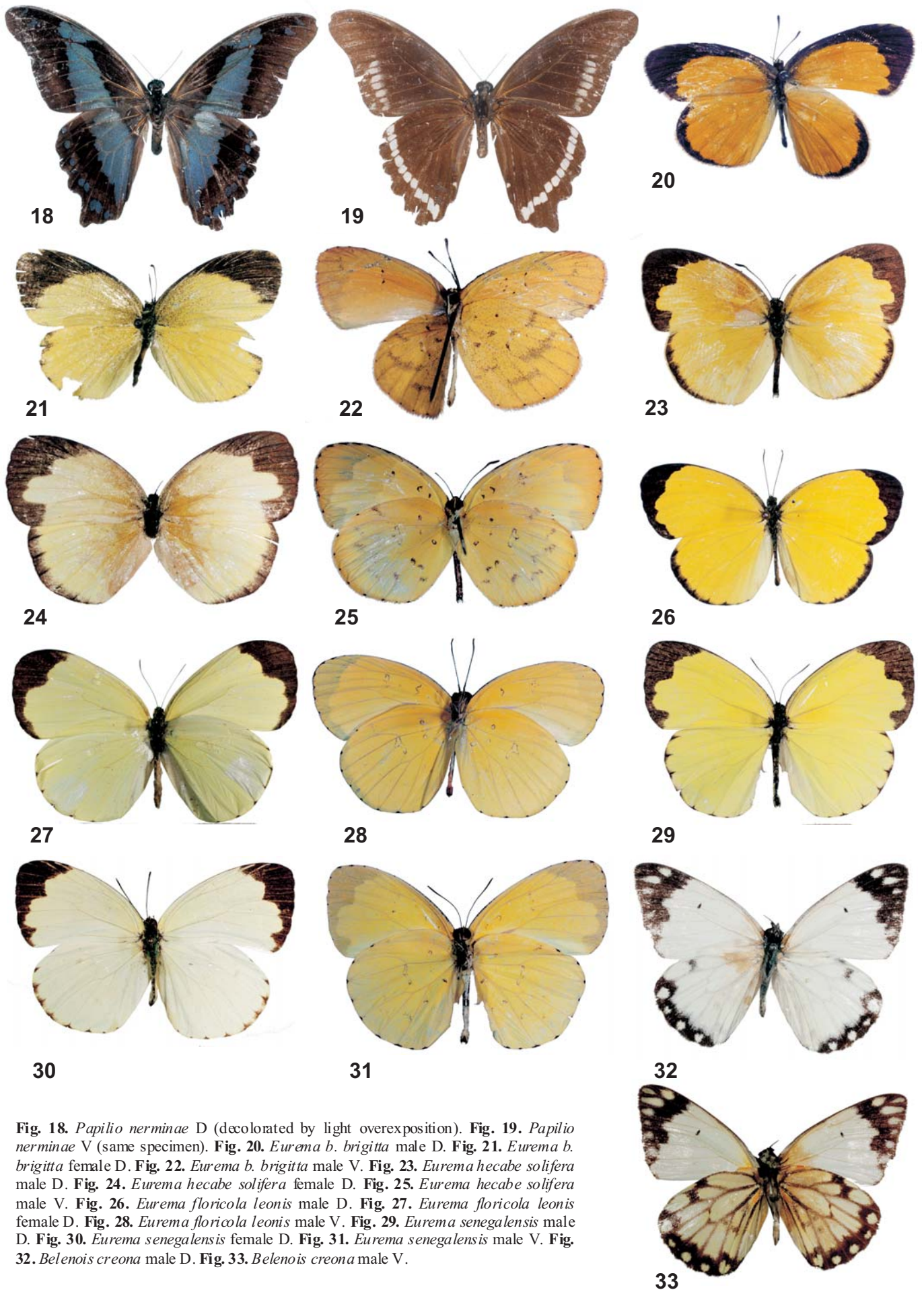


Fig. 18. *Papilio nerminae* D (decolored by light overexposition). **Fig. 19.** *Papilio nerminae* V (same specimen). **Fig. 20.** *Eurema b. brigitta* male D. **Fig. 21.** *Eurema b. brigitta* female D. **Fig. 22.** *Eurema b. brigitta* male V. **Fig. 23.** *Eurema hecabe solifera* male D. **Fig. 24.** *Eurema hecabe solifera* female D. **Fig. 25.** *Eurema hecabe solifera* male V. **Fig. 26.** *Eurema floricola leonis* male D. **Fig. 27.** *Eurema floricola leonis* female D. **Fig. 28.** *Eurema floricola leonis* male V. **Fig. 29.** *Eurema senegalensis* male D. **Fig. 30.** *Eurema senegalensis* female D. **Fig. 31.** *Eurema senegalensis* male V. **Fig. 32.** *Belenois creona* male D. **Fig. 33.** *Belenois creona* male V.

Graphium latreillianus theorini (Aurivillius, 1881)

MATERIAL EXAMINED: None.

The species was assigned from ST (unknown details) by Smith & Vane-Wright (2001) in what certainly concerns the sample reported from San Thome – 0° 19' N, 6° 43' E (NHM, 2004). No more data are known from the country and, as for preceding species, this sample must correspond to an accidental capture or, what we believe more credible, to wrongly labelled material.

The subspecies flies from Nigeria and Cameroon to Angola and western Uganda, being its presence in ST&PR quite dubious.

Graphium leonidas santamarthae Joicey & Talbot, 1927

MATERIAL EXAMINED: None.

The subspecies, endemic from PR, was described (Joicey & Talbot, 1927, sub *Papilio*) upon 1♂ collected by Barns (unknown precise locality) in 4-5/1926, referred also by Bacelar (1958). The NHM (2004) registers material from St. Principe (sic!) – 1° 37' N, 7° 27' E and Principe: Terreiro Velho – 1° 37' N, 7° 25' E. Viejo (1984) based in D' Abrera (1980) reports, at species level, that it flies in this island. Later, it was assigned again as exclusive from PR (Ackery *et al.*, 1995, D' Abrera, 1997, Smith & Vane-Wright, 2001). New material was noticed by Pyrcz (1992) from Terreiro Velho, though none specimen was flying there in August 2006 when we (LM) visited the area. *Graphium leonidas* subspecies distribution in ST&PR was mistaken by Larsen (2005) who pointed *G. l. santamarthae* from ST and *G. l. thomasius* from PR. The subspecies is reported by the ECOFAC (1995) as endangered.

Host-plants known to the nominate subspecies are *Annickia*, *Annona*, *Monanthes*, *Popowia*, *Uvaria* (Annonaceae) and *Landolphia* (Apocynaceae).

Graphium leonidas thomasius (Le Cerf, 1924)

MATERIAL EXAMINED: ST: Not labelled, 1♂2♀♀ (CIAT 623).

Le Cerf (1924, sub *Papilio*) describes the subspecies and Joicey & Talbot (1926, again sub *Papilio*, coll. Barns) reinforce its occurrence in ST only (details never reported). In the NHM (2004) the species is assigned from “both the localities”, Sao Thome and Sao Tome: Lagoa Azul (*error pro* Lagoa Azul) – 00° 19' N, 06° 43' E. Viejo (1984) reports its occurrence in the island at species level based in D' Abrera (1980). Pyrcz (1992, as *G. l. sanctithomae*) assigns again (same material?) “Lagoa” Azul; it was not flying in ST when we (LM) visited the savanna region in that island; indeed, in the August 2005 and 2006 the area was extremely dried, and in the same month of 2010 (always dry season) it was almost completely burned.

Ackery *et al.* (1995), D' Abrera (1997) and Smith & Vane-Wright (2001) register *G. l. thomasius* as one ST endemic. The two ST&PR islands' subspecies were mutually replaced by Larsen (2005) as just noted. The ECOFAC (1995) consider the subspecies as endangered.

For the host-plants, see previous subspecies.

Graphium ridleyanus (White, 1843)

MATERIAL EXAMINED: None.

Smith & Vane-Wright (2001) assign the species from ST (none detail) certainly based in the material later noticed as “San Thome – 0° 19' N, 6° 43' E” by the NHM (2004). This unmistakable species is certainly not established in the country and, as for the remaining Papilionidae samples reported to be in the NHM, it almost certainly corresponds to wrongly labelled material.

G. ridleyanus is a forest-dwelling species, known from Nigeria to western Tanzania and Angola.

The known host-plant (Zaire population) is *Popowia congoensis* (Annonaceae).

Family **PIERIDAE** Swainson, 1820

Subfamily **Coliadinae** Swainson, 1821

Catopsilia florella (Fabricius, 1775)

MATERIAL EXAMINED: PR: Bombom, garden close to sea, 17/8/2005, LM, 1♂ (CZ 5253). Bombom to Airport, forest margins, 26/7-

16/8/2010, LM, 2♂♂4♀♀ (CZ 5789). Id, 08.30-11.30 h, LM, 4♂♂2♀♀ (CZ 5790). ST: Guadalupe, road berm, on flowers, 26/7/2006, LM, 1♀ (CZ 5272). R. Água Izé, 27/10/1954, MCST, 1♀ (CZ 2355). Ilhéu das Rolas, 31/7/2005, LM, 1♂1♀ (CZ 5237); 3/8/2005, 1♂ (CZ 5239); 30/10-3/11/2005, AS, 1♂ (CZ 5260). R. Bombaim, 23-25/7/2006, LM, 1♂ (CZ 5268). Not labelled, 1♂2♀♀ (CIAT 630, 675, 680). More specimens were seen in the wing (LM, 7-8/2005, 2006 and 2010) in the Rolas, where the species was, then common, and in Stº Amaro, Guadalupe, Bombaim (ST), Bombom and Bombom to the Airport (PR), where it was not rare.

Bacelar (1958a) reports the species from ST&PR upon the re-examined Água Izé female, the only sample known till now from ST; Pyrcz (1992) assigns material from Terreiro Velho and Stº António (PR) but do not consider its presence in ST.

C. florella flies in the Afrotropical, Madagascan, and probably Oriental Regions (Larsen, 2005) and it is present in ST&PR in both islands.

Caterpillars feed along continental Africa, on *Cassia* and occasionally, on *Sesbania* spp. (Fabaceae).

Eurema brigitta brigitta (Stoll, 1780)

Fig. 20-22.

MATERIAL EXAMINED: PR: R. Sundy, 18/12/1972, FO, 1♂ (CZ 3804). ST: Praia das Conchas, savanna, 9/12/1972, FO, 1♂2♀♀ (CZ 3796); 26/7/2006, LM, 1♀ (CZ 5270). Morro Peixe, 16/6/1984, 1♂ (MBOC nn).

The species was recently reported as new to both, ST and PR islands, and so, newly assigned from the country (Mendes & Bivarde-Siousa, 2012); in ST, it shall occur exclusively in the north-eastern savannah area, where it seems stabilized, and the only place where it was obtained in the PR corresponds also to a low altitude, littoral and exposed area.

E. b. brigitta occurs along a quite extended range in Afrotropical and, eventually, Madagascan Regions – indeed, Larsen (2005) considers it is represented in Madagascar by a distinct subspecies.

Caterpillars are known mainly on *Albizia*, *Cassia*, *Sesbania*, *Tephrosia* (Fabaceae) and *Hypericum* sp. (Clusiaceae).

Eurema hecabe solifera (Butler, 1875)

Fig. 23-25.

MATERIAL EXAMINED: PR: R. S. Carlos do Fundão, 10/11/1954, MCST, 2♂♂1♀ (CZ 2325). R. Sundy, 9/11/1954, 1♂ (CZ 2309).

Snellen (1882, as *Terias hecabe*) assigns the species from PR without details (or shall it correspond to a misidentification of the following species?) and Bacelar (1958a) registers as belonging to the present species the (misidentified) CZ re-examined samples ahead considered under *E. floricola leonis* and under *E. senegalensis*. Pinhey (1972) reports *E. hecabe* occurrence «...along the low areas of the São Tomé Island...» in what certainly concerns *E. senegalensis*, as a matter of fact the only species of the genus that flies abundantly in the ST lowlands (see also ahead).

The subspecies ranges along most of Afrotropical Region (except for Western Cape) and in Madagascar, though D' Abrera (1997) questions its presence in the last country; in ST&PR it is known in the PR Island only.

Main host-plants are Fabaceae (*Aeschynomene*, *Albizia*, *Caesalpinia*, *Cassia*, *Dichrostachys*, *Entada*, *Lepedeza*, *Sesbania*, *Mimosa*) and Clusiaceae (*Hypericum*), but caterpillars may feed on a number of other families' representatives as it happens out of Africa.

Eurema floricola leonis (Butler, 1886)

Fig. 26-28.

MATERIAL EXAMINED: PR: Airport, 21/10/1955, DP, 1♂ (CZ 2425); 30/10/1955, 1♀ (CZ 2417); 31/10/1955, 1♀ (CZ 2418); 26/11/1955, 1♂ (CZ 2414, as *E. hecabe senegalensis*). Bombom, garden close to sea, 11/8/2005, LM, 1♂ (CZ 5246); 17/8/2005, 1♀ (CZ 5253); 27/7-9/8/2006, 2♂♂1♀ (CZ 5273); 26/7-16/8/2010, 2♂ (CZ 5788). Bombom to Airport, forest margins, 12/8/2005, LM, 2♂♂1♀ (CZ 5247); 15/8/2005, 1♂2♀♀ (CZ 5250); 28/7-5/8/2006, 1♂8♀♀ (CZ 5274); 26/7-16/8/2010, 3♂♂1♀ (CZ 5789). R. Infante D. Henrique,

9/11/1954, MCST, 1♂1♀ (CZ 2310, as *E. hecabe senegalensis*). R. S. Carlos do Fundão, 10/11/1954, MCST, 1♂ (CZ 2325). R. Sundry, 12/10/1954, MCST, 3♂♂ (CZ 2384, as *E. hecabe f. floricola*); 8/11/1954, 1♂ (CZ 2327); 2/8/1954, MCST, CB, 1♀ (CZ 2514, as *E. hecabe senegalensis*); 5-9/11/2005, AS, 1♂1♀ (CZ 5262).

The subspecies was noticed with base on the examined material just listed as a faunistic novelty to ST&PR (Mendes & Bivar-de-Sousa, 2012) and seems to be restricted in the country to the PR Island. It is known along the forested areas (forest/savanna border) of Africa and Larssen (2005) emphasizes it is the same subspecies that was described by Berger as *E. f. nivea*.

Caterpillars are known to feed in *Caesalpinia*, *Desmanthus*, *Leucaena*, *Mimosa* and *Entada* (Fabaceae).

Eurema senegalensis (Boisduval, 1836)

Fig. 29-31.

MATERIAL EXAMINED: **PR**: Airport, 17/11/1955, DP, 1♀ (CZ 2409 as *E. hecabe f. brenda*); 22/11/1955, 1♂1♀ (CZ 2411 as *E. hecabe f. brenda*). Bombom, garden close to sea, 16/8/2005, LM, 1♀ (CZ 5252); 26/7-16/8/2010, 2♂5♀♀ (CZ 5788). Bombom to Airport, forest margins, 2/8/2004, LM, 1♀ (CZ 5213); 5-6/11/2005, AS, 1♀ (CZ 5261); 28/7-5/8/2006, LM, 6♂♂5♀♀ (CZ 5274); 26/7-16/8/2010, 11♂♂6♀♀ (CZ 5789). Id, 08.30-11.30 h, 1♀ (CZ 5790). R. São Carlos do Fundão, 10/11/1954, MCST, 2♂♂2♀♀ (CZ 2325, partially misidentified as *E. hecabe f. floricola*). R. Sundry, 8/11/1954, MCST, 1♂ (CZ 2327); 9/11/1954, 1♀ (CZ 2309). **ST**: Margens do Caué (south of the island), 11/10/1954, MCST, 1♂1♀ (CZ 2341, as *E. hecabe f. brenda*). Porto Alegre, 13/10/1954, MCST, 2♂♂ (CZ 2385, as *E. hecabe f. brenda*); 22/6/1984, 10♂♂13♀♀ (MBOC nn); 6/5/1986, CP, 2♂♂ (BS 18796-18797) 1♂5♀♀ (BS 18801-18805); 18/5/1986, 3♀♀ (AF 132030-132032). R. Perserverança, Ribeira Peixe, 8/10/1954, MCST, 1♂ (CZ 2376, as *E. hecabe f. brenda*). Not labelled, 2♀♀ (CIAT 161, 185, as *E. hecabe*).

Sharpe (1893, as *Terias hecabe senegalensis*) assigns the species from ST (no details), Aurivillius (1910, as *E. hecabe* subspecies) reports 1♀ from Água Izé, and Bacelar (1948, as *Terias brenda f. maculata*) 1♀ (no details, MB, coll. F. Newton, det. E. Sharpe) obtained in the same island. Part of the material noticed by Bacelar (1958a) includes, for true and as reported, samples of *E. hecabe solifera*. Note of Pinhey (1972) on *E. hecabe* in ST must concern, as just noted, *E. senegalensis*. Pyrcz (1992) points Terreiro Velho and Água João.

E. senegalensis flies in most of Africa south of Sahara, though its presence in East Africa and Madagascar seems unclear. In ST&PR, it occurs on both, ST and PR.

Caterpillars live on *Cassia* and *Acacia* (Fabaceae).

Subfamily **Pierinae** Swainson, 1820

Colotis doubledayi (Hopffer, 1862)

MATERIAL EXAMINED: None.

D'Abreu (1997) reports the species explicitly from ST tough without details, when he assigns its range: Sierra Leone, São Tomé and Zaire to Angola, Namibia and South Africa (north-eastern Cape Province). The notice of the occurrence in ST (and also in Sierra Leone) of this quite typical xerophile species shall correspond to incorrectly labelled material as previously defended by Larsen (2005) or to an incidental and not well accomplished colonization of the north-eastern ST savanna area (Praia das Conchas and Lagoa Azul); otherwise, it shall reflect no more than field work held in that area exclusively during the "wrong" season (everything dried and burned in July-August) as recent field work we never accomplished during the rainy season.

Belenois creona creona (Stoll, 1780)

Fig. 32-33.

MATERIAL EXAMINED: **ST**: Praia das Conchas, savanna, 9/12/1972, FO, 1♂ (CZ 3796).

Mendes & Bivar-de-Sousa (2012) assign the species as new from ST and from ST&PR upon this only examined male.

B. c. creona is a typical savannicole known from West Africa (Senegal to Nigeria) to Ethiopia and Sudan. The scarcity of the observed material may imply that it shall correspond to a non-established population or to an erratic male or it may reflect no more than the scarcity of the field work developed in the course of the rainy season.

Caterpillars feed mainly on Capparaceae (*Maerua*, *Capparis*, *Boscia*, *Niebhuria*, *Ritchiea*) and Cleomaceae (*Hypericum* sp.).

Dixeia piscicollis Pinhey, 1972

Fig. 34-36.

MATERIAL EXAMINED: **ST**: Floresta do Morro Peixe, 2/5/1971, 1♂1♀ paratypes off. E. Pinhey (CZ 4126). Both re-examined specimens are part of the CZ type-collection and are registered under numbers I-LEP.1.1 and I-LEP.1.2.

The species is an endemic from ST described upon 7♂♂ 17♀♀ from the Morro Peixe forest (Pinhey, 1972). Further observations held in the same area (MBOC in June/July 1984 and LM in July-August 2004-2006 and 2010) revealed no further material (neither collected, nor seen), but in the meantime, Pyrcz (1992) reports new samples obtained in Lagoa Azul and in Água Izé (both areas visited also by us without any positive result); besides, he discusses the eventuality of the species occurrence outside ST (Equatorial Guinea), previously reported by D'Abreu (1980) and later corrected by himself (D'Abreu, 1997).

Concerning the type-specimens, Pinhey (1972) wrote «...one paratype of each sex will be presented to Dr. Castelbranco for Museu Bocage; and to the Laboratory of the Brigade H-Q on São Tomé...». The CZ re-examined specimens are certainly those sent in 1973 to CB (Mendes *et al.*, 1989) who always worked in this institution and not in the MB, where he never worked. Those said to be in ST, are certainly not there, as in the CIAT, where the only entomological collection exists in the country, there is none *Dixeia* sample and none type-material is (or was) deposited (as previously noted, visited by LM in 2006 and 2010).

Host-plants for *Dixeia*, when known, are *Capparis* (Capparaceae) though eventually the caterpillars can feed on other genera of the same family.

Appias epaphia aequatorialis Mendes & Sousa, 2006

Fig. 37-40.

MATERIAL EXAMINED: **ST**: Ilhéu das Cabras, 13/11/1993, 1♂ paratype (JPC 72). Morro Peixe, 16/6/1984, AS, 1♂ holotype, 2♂♂ paratypes (BS 18816, 19041-19042); MZFCUL, 1♂ paratype (MBOC nn). Porto Alegre, 12/10/1954, MCST, 1♀ allotype 1♀ paratype (CZ 2370). St.^a Catarina, 21/6/1984, AS, 1♀ paratype (BS 18817). The specimens, all deposited in the CZ, are numbered as part of the type-series as I-LEPI-3A.1 to I-LEPI-3A.4.

The subspecies was recently described upon the reported, and re-examined, material collected in ST (Mendes & Sousa, 2006), from where it is exclusive. Pyrcz (1992, at species level) references to Água Izé and "Laguna" Azul certainly belong here.

Caterpillars of the nominal subspecies are known on *Maerua*, *Capparis*, *Boscia*, *Niebhuria*, *Ritchiea* (Capparaceae) and *Cleome* (Cleomaceae).

Appias epaphia piresi Mendes & Sousa, 2006

Fig. 41-44.

MATERIAL EXAMINED: **PR**: Airport, 17/11/1955, DP, 1♀ paratype (CZ 2409). Maria Correia, 26/5/1986, CP, 2♂♂2♀♀ paratypes (BS 18939-18942). R. Esperança, 20/11/1954, MCST, 2♀♀ paratypes (CZ 2328). R. Sundry, 7-8/11/2005, AS, 1♂ holotype 1♀ allotype 1♂ paratype (CZ 5262); 12/11/1954, MCST, 1♂ paratype (CZ 2299); 2/8/1955, MCST, 2♂♂1♀ paratypes (CZ 2514). Locality?, 1969, RN, 1♂1♀ paratypes (CZ 4918). Bombom, close to St^a Rita beach, small garden in the forest margins, 26/7-16/8/2010, LM, 1♂ (CZ 5788). Types and paratypes are numbered as part of the type-collection as I-LEPI-6.1 to I-LEPI-6.14.

A. e. piresi is endemic from PR, from where it was recently described (Mendes & Sousa, 2006 – all samples re-examined); 1♂

1 ♀ from R. Infante D. Henrique assigned by Aurivillius (1910) and references to St^o António and to Terreiro Velho at species level by Pyrcz (1992), certainly belong here.

Relatively to the host-plants, see note on the previous subspecies.

Appias phaola phaola (Doubleday, 1847)

MATERIAL EXAMINED: None.

The species was registered in ST by Bacelar (1948) upon 3 ♂♂ 1 ♀ collected by F. Newton (unknown details, MB, identification impossible to rectify as they disappeared in the 1978 fire or before that), and said to have been determined by E. Sharpe. Viejo (1984) assigns the subspecies to ST based in Bacelar (1948), and Pyrcz (1992) reports both citations without comments. If Bacelar's reference is correct, the species was not observed in ST&PR during more than one century, what means that the colonizing population was not able to survive. However, we strongly suspect that Bacelar sample included, for true, dark specimens of *A. epaphia aequatorialis* or a misidentified sample of *Mylothris rembina* (see ahead).

A. p. phaola is known from Liberia to Congo (Ackery *et al.*, 1995, D'Abreu, 1997) and Larsen (2005) assigns Bioko Island also (from where it was described) but not ST nor even the geographically closer PR.

Leptosia alcesta alcesta (Stoll, 1781)

Fig. 45.

MATERIAL EXAMINED: PR: R. Esperança, 20/11/1954, MCST, 1 ♂ (CZ 2328).

Snellen (1873) reports two butterflies to PR (none detail), both today in the *L. a. alcesta* synonymy: *Pontia xiphia* and *Leptosia alcesta f. narica* (see Ackery *et al.*, 1995); later (Snellen, 1882) he registers again *P. xiphia* to PR and Bacelar (1958a) assigns the now re-examined specimen from the same island. No more specimens were seen from then on, what strongly suggests that even if Snellen's (1873) specimens were correctly identified (or their synonymy were well understood), more than half a century has passed till the capture of the R. Esperança specimen and so, that all the existing references (including this last one, from 1954) shall correspond to erratic specimens.

After Bernardi (1959) *L. alcesta* nominate subspecies flies from Senegal to Cameroon and Gabon, and Ackery *et al.* (1995) and D'Abreu (1997) add Bioko. This is one more species that may have attained the islands but which colonizing populations were unable to survive.

Leptosia medusa (Cramer, 1777)

MATERIAL EXAMINED: None.

Bacelar (1948) reports 4 ♂♂ of *L. medusa* and 1 ♀ of *L. m. ab. immaculata* from ST (unknown details, coll. F. Newton) upon material said to be determined, at least partially, by E. Sharpe; samples were in the MB, and their identification couldn't be rectified as they disappeared in the 1978 fire or even before that and they represented the only reference of the species to ST&PR. Viejo (1984) assigns without comments its presence in ST, based in Bacelar's reference.

After Larsen (2005) the species ranges all along West Africa, from Guinea-Bissau to Nigeria.

Despite Bacelar (*op. cit.*) reference, we strongly suspect of *L. medusa* (even accidental) presence in ST&PR due to the species known range and because of the similitude presented by the several species known in the genus.

Leptosia nupta nupta (Butler, 1873)

MATERIAL EXAMINED: PR: Airport, 19/10/1955, DP, 1 ♂ (CZ 2420); 21/10/1955, 1 ♀ (CZ 2425); 31/10/1955, 1 ♂ (CZ 2418). Bombom to Airport close to St^a Rita, on herbaceous, 28/7-5/8/2006, LM, 4 ♂♂ 2 ♀♀ (CZ 5274); 26/7-16/8/2010, 1 ♂ (CZ 5789). R. Esperança, 13/9/1954, MCST, 1 ♂ (CZ 2380); 6/11/1954, 1 ♂ (CZ 2305). R. Francisco, 16/11/1954, MCST, 1 ♀ (CZ 2369). R. Infante D. Henrique, 9/11/1954, MCST, 2 ♂♂ 1 ♀ (CZ 2310). R. Sundry, 12/10/1954, MCST, 1 ♂ (CZ 2384); 2/8/1955, 2 ♂♂ (CZ 2514); 18/12/1972, FO,

1 ♂ (CZ 3084). ST: Boavista to S. Nicolau, 6/1984, 25 ♂♂ 10 ♀♀ (MBOC nn). Bom Sucesso botanical garden, 12/8/2004, LM, 2 ♂♂ 2 ♀♀ (CZ 5220). Id, track to Lagoa Amélia, 6/8/2005, LM, 1 ♂ 1 ♀ (CZ 5241). Morro da Trindade, 6/6/1958, EEA, 3 ♂♂ 1 ♀ (CZ 3020). R. Bombaim, 6/8/2005, LM, 2 ♀♀ (CZ 5242). R. Monte Café, 19/4/1958, EEA, 1 ♂ 1 ♀ (CZ 2977); 21/4/1958, 2 ♂♂ (CZ 2979); 10/6/1958, 1 ♂ (CZ 3022); 30/4/1992, 2 ♂♂ (JPC 0067-0068). Id, S. Pedro, 27/9/1954, MCST, 1 ♂ (CZ 2359). R. Nova Moka, 22/9/1954, EEA, 1 ♀ (CZ 2334); 23/9/1954, 1 ♂ (CZ 2366). R. Ponta Figo, 12/5/1958, EEA, 3 ♂♂ 1 ♀ (CZ 2997). R. Saudade, 2/12/1954, MCST, 2 ♀♀ (CZ 2367); 4/12/1954, 5 ♂♂ 1 ♀ (CZ 2365). S. Nicolau, 3/12/1954, MCST, 2 ♂♂ (CZ 2372); 25/8/2010, LM, 6 ♂♂ 3 ♀♀ (CZ 5794). Not labelled, 22ex (CIAT 130, 223), almost all det. as *L. alcesta f. nupta*. The species was quite common in the 8/2010 around S. Nicolau waterfall (ST) and much more specimens were seen than collected in 2004-2006 in Monte Café, Nova Moka and Bom Sucesso (ST) and in the way to St^a Rita (Bombom to Airport – PR).

Sharpe (1893, sub *Nychitona*) is the first author to assign the species to the country, in Angolares and R. Saudade; Aurivillius (1910, as *L. alcesta* ab. *nupta*) reports 3 ♂♂ from Água Izé, Schultze (1917, as *L. alcesta* var. *nupta*) points Monte Café and Bernardi (1953) registers its presence in the island. Bacelar (1948, as *L. alcesta f. nupta*) reports 3 ♂♂ 4 ♀♀ from Angolares, 2 ♂♂ 3 ♀♀ from Saudade and 1 ♂ 2 ♀♀ from St^a Maria (all MB, all disappeared), and informs that the ♂♂ of this last series were identified by E. Sharpe. Later, Bacelar (1958a, as *L. alcesta* ab. *nupta* and *L. a. ab. nuptilla*) records the 1954/1955 re-examined samples though with some errors relatively to the collecting dates and to the specimens sex; furthermore, she assigns 2 ♂♂ from R. Sundry (MCST, CB, 2/8/1955 – error for 2/12/1954, CZ-2514, according to the field note-book, both disappeared). Pinhey (1972 as *L. alcesta nuptilla*) notes it is common at ST high elevations and that it is a "...distinctive race..." and not a variety. Viejo (1984), partially based in this last author, says that the species flies in ST. At last, Pyrcz (1992) reports Terreiro Velho, Bombaim, Água João and Água Izé, and notes small differences between the two islands populations.

The subspecies was reported by Bernardi (1953) to Fernando Po and Spanish Guinea (today Bioko and Equatorial Guinea), São Tomé, Cameroon, Central African Republic (Bangui), Gabon, Angola (type-locality), Belgian Congo (Zaire), Ethiopia, Uganda, Kenya and Tanganyika (Tanzania). Ackery *et al.* (1995) add Ghana and D'Abreu (1997) and Larsen (2005) Nigeria. Pyrcz (*op. cit.*) suggests that the species is a weak flyer and could have been introduced in both islands. The observed specimens of ST and PR seem, indeed, identical to Angolan samples (some of them almost topotypical) we could study in the CZ and BS collections.

► **Fig. 34.** *Dixeia piscicollis* paratype male D. **Fig. 35.** *Dixeia piscicollis* paratype female D. **Fig. 36.** *Dixeia piscicollis* paratype male V. **Fig. 37.** *Appias epaphia aequatorialis* holotype male D. **Fig. 38.** *Appias epaphia aequatorialis* allotype female D. **Fig. 39.** *Appias epaphia aequatorialis* holotype male V. **Fig. 40.** *Appias epaphia aequatorialis* allotype female V. **Fig. 41.** *Appias epaphia piresi* holotype male D. **Fig. 42.** *Appias epaphia piresi* allotype female D. **Fig. 43.** *Appias epaphia piresi* holotype male V. **Fig. 44.** *Appias epaphia piresi* paratype female V. **Fig. 45.** *Leptosia alcesta* male D. **Fig. 46.** *Mylothris rembina* male D. **Fig. 47.** *Mylothris rembina* female D. **Fig. 48.** *Mylothris rembina* male V. **Fig. 49.** *Mylothris rembina* female V. **Fig. 50.** *Deudorix (Virachola) a. antalus* male D. **Fig. 51.** *Deudorix (Virachola) a. antalus* female D. **Fig. 52.** *Deudorix (Virachola) a. antalus* male V. **Fig. 53.** *Deudorix (Virachola) a. antalus* male valves. **Fig. 54.** *Deudorix (Virachola) antalus* male uncus and subunci. **Fig. 55.** *Deudorix (Virachola) odana chalybeata* male D. **Fig. 56.** *Deudorix (Virachola) odana chalybeata* female D. **Fig. 57.** *Deudorix (Virachola) odana chalybeata* male V. **Fig. 58.** *Deudorix (Virachola) odana chalybeata* male valves. **Fig. 59.** *Deudorix (Virachola) odana chalybeata* male uncus and subunci.



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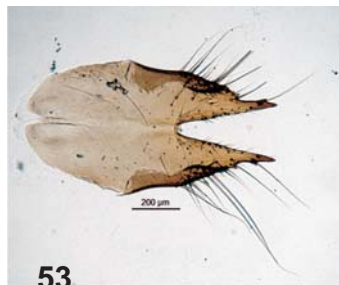
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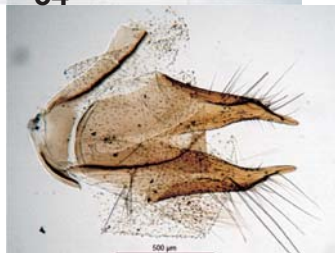
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Host-plants are *Capparis* (Capparaceae), though Brassicaceae have also been assigned; indeed, in São Nicolau and Bom Sucesso areas and near St^a Rita, these butterflies were abundant around cabagages (*Brassica oleracea* var.) vegetable-gardens.

***Mylothris asphodelus* Butler, 1888**

MATERIAL EXAMINED: None.

The species was registered by Bacelar (1948, no locality, no date, coll. F. Newton, MB) upon 1♀ from ST noticed as studied by E. Sharpe, which identification couldn't be rectified before the 1978 MB fire. Pyrcz (1992, as *M. poppea* f. *asphodelus*, without comments) reports the Bacelar (*op. cit.*) citation. No other author assigns *M. asphodelus* presence in the country, what means that the species, if correctly identified by Bacelar (1948), was not reported from ST&PR during the last 100-150 years (Newton's samples were obtained in the second half of the XIX century). Bacelar's only female shall concern, however, a misidentification of *M. rembina*, almost certainly the only *Mylothris* present in ST.

Ackery *et al.* (1995) and D'Abrera (1997) assign the species from Cameroon to Zaire, Uganda, Tanzania and (?) Angola – material under study shows that it really flies in this last country – and Larsen (2005) adds Nigeria, but none of them assign its occurrence in ST&PR.

***Mylothris bernice* (Hewitson, 1862)**

MATERIAL EXAMINED: None.

Sharpe (1893), Schultz (1917) and Aurivillius *in* Seitz (1928) point *M. bernice* to ST (no details). Bacelar (1948) reports 5♂♂6♀♀ from Angolares (no date, under *M. nubile*, coll. F. Newton) and said to have been (at least partially) determined by E. Sharpe; all were destroyed in the MB 1978 fire or before that; she suggests, however, that they may belong at least partially to *M. nubile*. The same is commented by Pyrcz (1992). We consider that *M. bernice* quite doubtfully integrates (or have integrated) ST&PR fauna and that even if previous identifications were correct, its presence was not rectified in the island for long (indeed, Newton's material from ST dates from the last decades of the XIX century). We strongly doubt, further, that the assigned samples belongs to *M. n. nubile* as the only species of this complex genus that is definitely known from ST&PR is *M. rembina*; and also because the material we re-examined and that was labelled (and published by Bacelar) as part of *M. nubile* was not correctly identified (see under *M. rembina*).

Ackery *et al.* (1995) reports *M. bernice* to Cameroon, Zaire and Uganda, but D'Abrera (1997) considers the two former countries only.

***Mylothris nubile nubile* (Möschler, 1884)**

MATERIAL EXAMINED: None.

Talbot (1945) registered the species from ST (without details), Schultze (1917, 6♂♂7♀♀) from the "Ciudad de São Thomé", and Aurivillius (*in* Seitz, 1928) and Bacelar (1948) from Angolares (see note on the previous species). Bacelar (1958a) assigns PR samples from the fifties identified under this name, that when re-examined revealed to correspond all of them to *M. rembina* (see ahead); two more specimens from the R. Sundry – 1♂, 12/11/1954 (CZ-2299), and 1♀, 12/12/1955 (CZ-2514) – were not found in the CZ and their correct identification remains impossible to rectify (they must be considered lost). Viejo (1984), based in Bacelar (1948), assigns *M. nubile* to ST without comments.

The subspecies range is assigned by Ackery *et al.* (1995) as Cameroon, Gabon and São Tomé, though, as pointed, we strongly suspect of its real presence in ST&PR.

***Mylothris poppea* (Cramer, 1777)**

MATERIAL EXAMINED: None.

Viejo (1984: 363-368) reports *M. poppea* as part of the ST and Fernando Po faunas based, he states, in Bacelar (1948) and/or in Talbot (1945); however, the species do not integrate neither Bacelar (*op. cit.*) contribution nor it is considered by Talbot (*op. cit.*) as part of the ST&PR fauna. The only plausible interpretation is that Viejo

citation will correspond to the Bacelar (1948) reference to *M. asphodelus*, considered by Pyrcz (1992) as a *M. poppea* subspecies – indeed, he don't assign *M. asphodelus* to ST. So, *M. poppea* definitely doesn't fly in ST&PR.

The species ranges after Ackery *et al.* (1995) from Ghana to Cameroon, Zaire and northern Angola, and a distinct subspecies is endemic from Bioko (Fernando Po), but not from ST&PR. After Larsen (2005) it flies in West Africa always West from the Dahomey Gap and all the remaining data concern misidentifications.

***Mylothris rembina* (Plötz, 1880)**

Fig. 46-49.

MATERIAL EXAMINED: PR: Not labelled, 2♀♀ (CIAT 355, 364). ST: R. Água Izé, 27/10/1954, MCST, 2♂♂5♀♀ sub *M. nubile* (CZ 2355); 28/10/1954, 2♂♂4♀♀ sub *M. nubile* (CZ 2336); 29/10/1954, 2♂♂1♀ sub *M. nubile* (CZ 2324); 26/8/1956, 7♂♂ (CZ 2762). Airport, 6/12/1954, MCST, 2♂♂4♀♀, sub *M. nubile* (CZ 2340). Margens do Caué (south of the island), 11/10/1954, MCST, 2♂♂ sub *M. nubile* (CZ 2341). Praia Melão, 7/12/1954, MCST, 1♀ sub *M. nubile* (CZ 2354). Praia Pantufo, 7/12/1954, MCST, 1♀ sub *M. nubile* (CZ 2498). R. Bombaim, 20-23/8/2010, LM, 8♂♂ (CZ 5791). R. S. João, 25/8/2010, LM, 3♂♂ (CZ 5795). S. Tomé, cidade, Praia do Lagarto, garden, 25/8/2010, LM, 1♂ (CZ 5793). No locality, 1915 and 1920, SB, 2♂♂ sub *M. nubile* (CZ 2). All examined specimens belong to the "yellow form".

Talbot (1945) described two morphs of this species upon material partially collected in PR: f. *semifusca* (1♂) and f. *arctata* (1♀) (localities unknown, both coll. W. H. T. Tams, 2/12/1932) and Viejo (1984) reports this information without comments. Pyrcz (1992) assigns the two morphs from ST, the f. *arctata* (yellow form), from Água Izé and Porto Alegre, and f. *semifusca* (orange form) from "Lagua" Azul, and discusses the complexity of the genus. D'Abrera (1997) presents photos of both sexes upon material from ST which fairly agrees with the samples under study, though none locality is detailed. Larsen (2005) registers PR only. As considered behind, *M. nubile* sample noticed by Bacelar (1948) with doubts to Angolares (5♂♂6♀♀, MB) certainly belong to this species. *M. rembina* seems not uncommon on ST but we believe that its actual presence in PR needs to be rectified.

M. rembina is known from Gambia to Cameroon, western Zaire and northern Angola.

***Mylothris rhodope* (Fabricius, 1775)**

MATERIAL EXAMINED: None.

Berger (1979) is the only author to support this species presence in ST in what almost certainly corresponds to a misidentification of *M. rembina* or to a wrongly labelled sample.

M. rhodope flies from Gambia to Angola and Tanzania, but Larsen (2005) considers that the westernmost data from West Africa shall concern *M. sylvia* misidentifications; Its presence in ST&PR seems so, quite dubious.

***Mylothris spica spica* (Möschler, 1884)**

MATERIAL EXAMINED: None.

Berger (1979, without details) is the only author to assign the species from ST. Our comments on *M. spica* are the same ones we presented relatively to *M. rhodope*.

The subspecies ranges from Burkina Faso to Ghana, Cameroon and Bioko, and D'Abrera (1997) questions its presence in Angola (from where another subspecies is known). Larsen (2005) rejects all the data excluding those from Ghana.

***Mylothris sulphurea* Aurivillius, 1895**

MATERIAL EXAMINED: None.

Pyrcz (1992) reports *M. sulphurea* as assigned by Viejo (1984) from ST, but as a matter of fact, Viejo (*op. cit.*) do not registers the species in his lists of butterfly species flying in the Guinea Gulf Islands; so, there are no real data considering this species presence in ST&PR and it certainly not integrates the country's fauna.

M. sulphurea is reported from Sierra Leone to Cameroon and northern Zaire but Larsen (2005) restricts its range to eastern Nigeria and western Cameroon and supports that all remaining references will concern misidentifications.

Family LYCAENIDAE Leach, 1815

Subfamily Lipteninae Rober, 1892

Liptena evanescens xanthis (Holland, 1890)

MATERIAL EXAMINED: None.

Stempffer *et al.* (1974) assigns the subspecies to ST upon 2♂♂ collected by Barnes in 1926 (no precise location). Larsen (2005) points also that the species occurs in ST and registers it distributes also from Ivory Coast to Nigeria, Cameroon, and Gabon, as well as in Bioko. Due to the long period of time without new data (almost 90 years from its only capture by Barnes), we doubt about the recent presence of the species in the country, what means that the only reported males may correspond to a non-established population.

Subfamily Miletinae Reuter, 1896

Spalgis lemolea lemolea Druce 1890

MATERIAL EXAMINED: **PR:** Bombom, garden close to sea, around mango trees, 10/8/2005, LM, 1♀ (CZ 5245); 11/8/2005, 2♀♀ (CZ 5246); 13/8/2005, 1♀ (CZ 5249); 15/8/2005, 1♀ (CZ 5251); 17/8/2005, 1♀ (CZ 5253); 27/7-9/8/2006, 9♀♀ (CZ 5273); 26/7-16/8/2010, 4♀♀ (CZ 5788). Bombom to Airport, forest margin with dispersed mango and bread-fruit trees, 12/8/2005, LM, 1♀ (CZ 5247); 13/8/2005, 1♀ (CZ 5248); 15/8/2005, 4♀♀ (CZ 5250); 26/7-16/8/2010, 1♂15♀♀ (CZ 5789); Id, 08.30–11.30 h, LM, 2♀♀ (CZ 5790). Many other specimens were seen in the wing (not collected) close to mango-trees, from the Bombom to the Airport (2005, 2006 and 2010).

Pyrz (1992) is the only author who previously registered the species from ST&PR upon material he obtained in the Terreiro Velho (PR) only; there are also a number of mango-trees in the Terreiro Velho, though none *S. lemolea* specimen was collected nor seen there when we (LM) visited the area during the 2006 “gravana” (despite well before the end of the dry season, it was raining that day).

The species is common along wooded biotopes (to the 2000 m) from Gambia to Ethiopia, Kenya, Zambia and Mozambique and the nominate subspecies flies from Gambia to Cameroon. Abundant in PR at least in the North, it remains unknown in ST.

Ackery *et al.* (1995), Larsen (2005) and others, report the caterpillars to predate on Coccidae and Pseudococcidae Homoptera, independent from ants. Indeed, mango trees on the Bombom and surrounding areas were heavily parasitized and dead leaves mainly of bread-fruit on the soil in the berm of the road to the Airport showed also quite numerous Pseudococcidae scale-insects.

Subfamily Theclinae Swainson, 1830

Iolaus (Epamera) bellina maris (Riley, 1928)

MATERIAL EXAMINED: None.

The subspecies was described from ST by Riley (1928, sub *Epamera*) and noticed from the same island (also without details) by Stempffer (1967) and D’Abrera (1980). Pyrcz (1992) reports the species from the secondary forest along Água Bomba.

I. bellina maris is endemic from ST where it shall be rare; it was considered as eventually extinct by the ECOFAC (1995); other subspecies fly from Sierra Leone to Zaire and Uganda.

Hypomyrina fournieri Gabriel, 1939

MATERIAL EXAMINED: None.

H. fournieri was listed by Libert (2004: 193) as present in “Sao Th. & Pr.”, though in the correspondent text (:123-124) none material is reported from the country; he, and later D’Abrera (2010), assign material from Sierra Leone, East Nigeria, Cameroon, Congo, Gabon, Northeastern Zaire and Western Uganda but ST&PR is not

considered. For the moment, the species is, so, considered as inexistent in the country.

Deudorix (Virachola) antalus antalus Hopffer, 1855

Fig. 50-54.

MATERIAL EXAMINED: **PR:** Bombom, garden close to sea, on flowers, 10/8/2005, LM, 1♀ (CZ 5245); 26/7-19/8/2010, 1♀ (CZ 5788). Bombom to Airport, 26/7-19/8/2010, LM, 1♀ (CZ 5789). **ST:** Bongolô, 20/10/1984, TD, 1♀ (CZ 4000). Guadalupe, along road, close to houses on flowers, 26/7/2006, LM, 2♂♂ (CZ 5272).

Pyrz (1992) reports by the first time the species from ST&PR from Água Izé (ST), and its presence in both islands was pointed by Mendes & Bivar-de-Sousa (2012) at island level only and upon the material listed above.

In the PR specimens, the male valvas are apically pointed, welded along more than half their length and apically toothed along the outer margin (Fig. 54), being the subunci elongate and clearly curved (Fig. 55).

D’Abrera (1980, under *Virachola*) and Libert (2004) assign it is very common throughout Ethiopian and Madagascan Regions (Reunion, Mauritius and Comoro included), especially in open biotopes.

Caterpillars, extremely polyphagous, were assigned on *Nymannia* (Aitoniaceae), *Paphia* (Apiaceae), *Quisqualis* (Combretaceae), *Acacia*, *Albizia*, *Baphia*, *Bauhinia*, *Caesalpinia*, *Cajanus*, *Canavalia*, *Cassia*, *Crotalaria*, *Dolichos*, *Phaseolus*, *Pisum*, *Schottia*, *Sutherlandia*, *Vigna* (Fabaceae), *Syzygium* (Myrtaceae), *Olea*, *Ximania* (Oleaceae), *Prunus* (Rosaceae), *Cardiospermum* (Sapindaceae) and *Capsicum* (Solanaceae).

Deudorix (Virachola) caliginosa Lathy, 1903

MATERIAL EXAMINED: None.

The species was pointed to fly in ST by Larsen (2005) with no details, but recently it was recognizes (Larsen, *com. pers.*) it shall not attain the island; however, Libert (2004) reports 1♂ from “Sao Thomé et Principe” though not even the island from where the specimen proceeds was detailed; D’Abrera (2009) assigns also “Sao Thome, Principe” as part of the species range. It flies from Ivory Coast, Ghana, Togo, Nigeria and Cameroon to East Africa.

Deudorix (Virachola) odana chalybeata (Joicey & Talbot, 1926)

Fig. 56-59.

MATERIAL EXAMINED: **PR:** Bombom, forest margins, on flowers, 27/7-9/8/2006, LM, 2♂♂1♀ (CZ 5273). **ST:** Porto Alegre, 28/6/1984, 1♀ (MBOC nn).

The subspecies was described from ST (Joicey & Talbot, 1926 as *Deudorix chalybeata*) though without any detail, upon material collected by Barnes. Viejo (1984) and Pyrcz (1992), both as *V. chalybeata* and based in the original description, include the species among those living in the island. Libert (2004) reports that 1♂ collected in Terreiro Velho (PR, as Tereiro Velho) by Wojtusiak and Pyrcz and deposited in the Jagiellonian University Museum in Krakow, Poland, will concern this same species. It is considered by Libert (2004) and by D’Abrera (2009) as a subspecies of *V. odana* Druce, 1887, a species known to fly also from Senegal to Nigeria, Zaire, Uganda, western Kenya and Tanzania.

Relatively to the male genitalia and in what the PR material is concerned, the valvas are apically pointed and welded along less than half their length, slightly undulated along the outer distal area, and the subunci (Fig. 59) are basally wider and distally less curved than those of *D. (V.) antalus*.

The absence of males among the ST known material (only the Porto Alegre female was studied and the holotype – see Libert, 2004 – is also a female) do not allow to compare the general wings shape, color and pattern nor the male genitalia characteristics in the two islands populations. We believe that this subspecies shall be the one present in ST and in PR and it will concern one more endemic taxon for the country; however, only the study of male specimens from ST and their comparison with the PR material will allow solve definitely the problem.

Deudorix (Virachola) lorisona lorisona Hewitson, 1862

MATERIAL EXAMINED: **PR**: Bombom, garden close to sea, on flowers, 13/8/2005, LM, 1♂ (CZ 5249); 27/7-9/8/2006, 1♂ (CZ 5273).

Hawker-Smith (1928) assigns the species from PR upon the type ♀ of a new morph (f. *obliterata*) said to proceed from “St. Principe I., 2000 feet, April-May 1926” and reported as deposited in the Hill Museum. Pycrz (1992) studies material from Terreiro Velho and points 3 other specimens from the same island (none detailed location) in the BM, misidentified as *Virachola bimaculata*. Larsen (2005) assigns again the species to the island. Libert (2004) map represents however (carte n° 20) the species presence in both, the ST and PR upon 2 males 2 females from “Sao Thomé et Principe” (not even the island reported, what eventually justifies the mark in ST). So, while certainly present in PR, its real occurrence in ST needs to be rectified.

After Ackery *et al.* (1995) the species flies in wooded areas from eastern Zimbabwe and Mozambique to Malawi, Tanzania, Kenya, Uganda, Zaire, Gabon and Sierra Leone, and the nominate subspecies occupies most of the area westwards from the Rift Valley.

Caterpillars feed on Rubiaceae (*Coffea*, *Rothmannia* and *Mussaenda*) and Pycrz (1991a, as *Virachola bimaculata*) reports in the PR one female laying on a coffee tree. After Kieland (1990) it may be a pest to coffee berries.

Rubropelates aruma aruma (Hewitson, 1873)

MATERIAL EXAMINED: None.

Hypolycaena rava Holland, 1892 was considered by Ackery *et al.* (1995) as a junior synonym of the present species and it was under that name that Sharpe (1893) registers its presence in ST though without details. It was not reported from ST&PR in the course of the last century, neither by Pycrz (1992, who consider the species under *Pilodeudorix*), nor by Libert (2004), nor by Larsen (2005 also under *Pilodeudorix*), what means that Sharpe's specimen(s) may concern a misidentification, a not established population, or wrongly labelled material. However, Libert (2004) accepts Sharpe's reference and map-represents the species presence in ST (carte n° 9).

After Ackery *et al.* (1995, under *Hypokopelates*) the subspecies flies in Gabon and Zaire (ST&PR not considered).

Subfamily **Polyommatainae** Swainson, 1827

Anthene l. lunulata (Trimen, 1894)

MATERIAL EXAMINED: None.

Viejo (1984) assigns the species from ST upon 3♂♂ collected in unknown locality in July 1959 and deposited in the Instituto Español de Entomología, in Madrid and Pycrz (1992) reports Viejo (1984) without comments.

The species is widely distributed in the Afrotropical Region, from southern Mauritania and Senegal to Ethiopia, Angola and Mozambique and *A. l. lunulata* range is mapped (Libert, 2019) to extend from former Zaire (southern area of the Congo River) to Angola, Tanzania and Mozambique, though its presence in ST&PR is not recognized. We wonder if Viejo material (not seen) will be *A. lunulata* or a misidentification of *A. princeps*, this one known to occur in ST (see following species).

Caterpillars often attended by ants (*Camponotus* sp., Formicidae) are known on *Acacia*, *Brachystegia*, *Entada*, *Isobertinia*, *Parikia* (Fabaceae) and *Combretum* (Combretaceae).

Anthene princeps princeps (Butler, 1876)

MATERIAL EXAMINED: None.

The species was pointed to Água João by Pycrz (1992) and from both islands, without detail, by Libert (2010).

A. princeps flies in most of the sub-Saharan Africa, mainly on wooded area.

Caterpillars occur on Fabaceae (*Milletia*, *Entada* and *Albizia*).

Lampides boeticus (Linnaeus, 1767)

MATERIAL EXAMINED: **PR**: Bombom, garden close to sea, 26/7-

16/8/2010, LM, 1♀ (CZ 5788). Bombom to Airport, forest margin, 15/8/2005, LM, 1♂ (CZ 5251). R. Esperança, 6/11/1954, MCST, 1♀ (CZ 2305).

Despite its immense geographical range, the species is known in the country exclusively in PR, where it seems, further, to be uncommon; the only samples previously known from ST&PR were that of Bacelar (1958a, sub *Cupido* (*Lampides*), re-examined) from R. Esperança and material reported by Pycrz (1992) from Terreiro Velho.

L. boeticus flies along Africa and Madagascar, on the southern Palaearctic, and extends to the Australian Region and to India.

Caterpillars are polyphagous on Fabaceae: *Astragalus*, *Canavalia*, *Colutea*, *Crotalaria*, *Cytisus*, *Derris*, *Dolichos*, *Indigofera*, *Lathyrus*, *Lupinus*, *Medicago*, *Phaseolus*, *Pisum*, *Podalyria*, *Sesbania*, *Spartium*, *Sutherlandia*, *Tephrosia*, *Ulex* and *Vigilia*.

Cacyreus lingeus (Stoll, 1782)

MATERIAL EXAMINED: **ST**: Boavista to S. Nicolau, 15/6/1984, 1♂ (MBOC nn). R. Perserverança, Ribeira Peixe, 8/10/1954, MCST, 1♂ (CZ 2376). R. Saudade, 26/4/1958, EEA, 1♀ (CZ 2984). One more specimen was seen (LM, 8/2005) in the top of a dried Asteraceae flower in the **PR** forest margin, close to the Bombom (road to Airport).

The species was reported from PR by Snellen (1873, sub *Thecla*) and from ST by Sharpe (1893, sub *Hirena*) – always without details; later, Aurivillius (1910, sub *Cupido*), registers 1♂3♀♀ from Água Izé. The re-examined R. Perserverança ♂ (Bacelar, 1958a), was determined sub *Cupido*. Pycrz (1992) assigns Bombaim.

C. lingeus is known along sub-Saharan Africa and occurs in ST&PR in both islands.

Caterpillars live on Lamiaceae (*Calamintha*, *Coleus*, *Lavandula*, *Mentha*, *Plastostema*, *Salvia*, *Satureja*) and *Geranium* sp. (Geraniaceae).

Leptotes pirithous pirithous (Linnaeus, 1767)

MATERIAL EXAMINED: **PR**: Airport, 12/11/1955, MCST, 1♂ (CZ 2408); 17/11/1955, 1♂ (CZ 2409); 20/11/1955, 1♀ (CZ 2410). Bombom, garden close to sea, marginal to forest, 2/8/2004, LM, 1♂ (CZ 5213); 6/8/2004, 1♀ (CZ 5217); 10/8/2005, 2♂♂3♀♀ (CZ 5245); 13/8/2005, 3♂♂ (CZ 5249); 15/8/2005, 1♂ (CZ 5251); 16/8/2005, 1♀ (CZ 5252); 18/8/2005, 2♂♂1♀ (CZ 5254); 27/7-9/8/2006, 1♂2♀♀ (CZ 5273); 26/7-16/8/2010, 5♂♂5♀♀ (CZ 5788). Bombom to Airport, forest margins mainly hovering low, over flowers in *Stachytarpheta* thickets, 12/8/2005, LM, 1♂1♀ (CZ 5247); 15/8/2005, 7♂♂ (CZ 5250); 28/7-5/8/2006, 12♂♂16♀♀ (CZ 5274); 26/7-16/8/2010, 28♂♂15♀♀ (CZ 5789). Id. 08.30-11.30 h, LM, 3♂♂7♀♀ (CZ 5790). R. Esperança, 6/11/1954, MCST, 1♂ (CZ 2305). R. Sundry, 17/11/1954, MCST, 1♂2♀♀ (CZ 2326); 2/8/1955, 3♂♂ (CZ 2514). Terreiro Velho forest margins, rain, 1/8/2006, LM, 2♂♂1♀ (CZ 5275). **ST**: Bindá, 11/8/2004, LM, 1♂1♀ (CZ 5219). Boavista, 15/6/1984, 1♀ (MBOC nn). Ilhéu das Rolas, 30/7/2005, LM, 1♂2♀♀ (CZ 5236); 2/8/2005, 1♀ (CZ 5328); 3/8/2005, 2♂♂1♀ (CZ 5239); 30/10-3/11/2005, AS, 1♂1♀ (CZ 5260). Porto Alegre, 28/6/1984, 1♂ (MBOC nn). R. S. João, old road to Bombaim, 4/8/2005, LM, 1♀ (CZ 5240). R. Bombaim, 23/7-9/8/2006, LM, 1♂ (CZ 5268); 20-23/8/2010, 2♀♀ (CZ 5791). R. Macaco, near Monte Macaco, 27/8/2010, LM, 1♂1♀ (CZ 5796). S. Nicolau, 6/1984, 1♀ (MBOC nn). The species was very abundant in both islands and many more specimens were seen in the wing or feeding on small flowers (LM, 7-8/2005, 2006 and 2010), at Rolas Islet (ST), as well as from Bombom to Airport (PR).

Snellen (1873, as *Thecla telicanus*) was the first to report the species from PR (without details). Bacelar (1958a, as *Cupido* (*Syntarucus*) *telicanus* and as its f. *plinus*) registers the 1954 and 1955 re-examined specimens. Viejo (1984, sub *Syntarucus*) assigns 1♂ from ST (no locality, 7/1959), in the Instituto Español de Entomología, in Madrid. Pycrz (1992) points the species to Terreiro Velho, Bombaim, Água João and Água Izé. The male genitalia of all the examined males fairly correspond to what is known to the species.

The species is widely distributed in Africa and Madagascar, southern Asia and southern Europe and can be found in ST&PR in both islands.

Caterpillars feed on *Burkea*, *Cajanus*, *Crotalaria*, *Indigofera*, *Medicago*, *Mellilotus*, *Mundulea*, *Phaseolus*, *Pisum*, *Rynchosia*, *Sesbania*, *Vigna* (Fabaceae), *Plumbago* (Plumbaginaceae), *Lantana* (Verbenaceae) and *Crataegus* (Rosaceae).

Leptotes pulchra (Murray, 1874)

MATERIAL EXAMINED: None.

Sharpe (1893, sub *Tarucus*) is the only author to report the species from ST (no details) and from the country. It is one more species that was not reported from ST&PR during the last century and, like for the remaining cases, its reference shall concern a non-established population, an accidental capture or a wrongly labelled sample; it may concern also a misidentification, as the quite common *L. pirithous*, despite its reference to ST was not reported by Sharpe (1893) from the island.

The species is known in most of the Afrotropical Region.

Caterpillars feed on *Sesbania* sp. (Fabaceae: Papilionoidea).

Leptotes pyrcei Libert, 2011

MATERIAL EXAMINED: None

The species was recently described upon a sample obtained in the PR (unreported locality at 300 m altitude) and is endemic from this island. There are no data, neither on the precise locus typicus nor on the larval forms.

Leptotes sanctithomae (Sharpe, 1893)

MATERIAL EXAMINED: None.

The species was described from São Tomé: S. Nicolau, 800 m (Sharpe, 1893, sub *Catochrysops*) probably based on the same 3 specimens that Fernandes (1958) registers to be in quite bad condition in the MB before the 1978 fire: the holotype ♂, n. 24, without abdomen, the allotype ♀, n. 24, and 1 paratype (sex?, n. 24, 25), all obtained in S. Nicolau, 800 m, all without date and all labelled *Catochrysops sanctithomae*. Aurivillius (in Seitz, 1928, sub *Cupido*), D'Abreu (1980, sub *Chilades*) and Viejo (1984) report the species from ST. Pyrcz (1992) assigns 1♂ in the Paris Museum, labelled "Sao Tomé, edge of virgin forest, 10.01-34.01.1926, T. A. Barns". *L. terrenus* (Joicey & Talbot, 1926, sub *Syntarucus*), also described as an endemic from ST was recently considered (Libert, 2011) to fall in the *L. sanctithomae* synonymy; Viejo (1984, sub *Syntarucus terrenus*), based in the original description, includes the species in his list of ST and Pyrcz (1992) reports it occurs in the island (though no material observed).

The species is an endemic from the country known from ST only. The ECOFAC (1995, sub *Chilades*) considers its indetermined status, meaning it is in danger, vulnerable or rare, though not sufficiently known to be included in one of these categories.

Zizeeria knysna (Trimen, 1862)

MATERIAL EXAMINED: **PR:** Airport, 15/10/1955, DP, 3♂♂ (CZ 2423); 22/11/1955, 1♂ (CZ 2411). Bombom, garden close to sea, 6/8/2004, LM, 1♂ (CZ 5217); 8/8/2004, 3♀♀ (CZ 5213); 13/8/2005, 1♀ (CZ 5249); 16/8/2005, 1♀ (CZ 5252); 17/8/2005, 2♂♂1♀ (CZ 5253); 5-6/11/2005, AS, 1♂ (CZ 5261); 27/7-9/8/2006, LM, 3♂♂2♀♀ (CZ 5273); 26/7-16/8/2010, 9♂♂3♀♀ (CZ 5788). Bombom to Airport, forest margins, 12/8/2005, LM, 1♂ (CZ 5247); 28/7-5/8/2006, 1♀ (CZ 5274); 26/7-16/8/2010, 2♂♂ (CZ 5789). Id, 08.30-11.30 h, LM, 1♂ (CZ 5790). R. Sundry, 17/11/1954, MCST, 5♂♂ (CZ 2326); Terreiro Velho forest margins, rain, 1/8/2006, LM, 2♂♂2♀♀ (CZ 5275). **ST:** Água Izé, 27/10/1954, MCST, 1♂ (CZ 2355); 28/10/1954, 2♀♀ (CZ 2336); 7/11/1984, TD, 1♂ (CZ 4006). Boavista to S. Nicolau, 15/6/1984, 4♂♂1♀ (MBOC nn). Bom Sucesso botanical garden, 12/8/2004, LM, 1♂ (CZ 5220). Near S. Nicolau waterfall, 25/8/2010, LM, 1♂1♀ (CZ 5794). Margens do Caué (south of the island), 11/10/1954, MCST, 1♀ (CZ 2341). Ilhéu das Rolas, 12/10/1954, MCST, 3♂♂ (CZ 2281); 31/7/2005, 1♂1♀ (CZ 5237). Monte Café, 30/4/1992, 1♂ (JPC 0063). Id, S. Pedro,

27/9/1954, MCST, 1♀ (CZ 2359). Praia de Fernão Dias, 22/7/2006, LM, 1♀ (CZ 5269). R. Bombaim, 6/8/2005, LM, 1♂2♀♀ (CZ 5242); 7/8/2005, 1♂1♀ (CZ 5243); 23/7-9/8/2006, 10♂♂2♀♀ (CZ 5268); 20-23/8/2010, 5♂♂1♀ (CZ 5791). R. Nova Moka, 26/9/1954, MCST, 1♂ (CZ 2343); 24/11/1954, 1♂ (CZ 2292). R. Rio do Ouro, 22/10/1954, MCST, 3♂♂1♀ (CZ 2356). R. Stª Catarina, 29/4/1958, MCST, 2♂♂ (CZ 2985). R. S. João, old road to Bombaim, 4/8/2005, LM, 1♂ (CZ 5240); 25/8/2010, 2♂♂1♀ (CZ 5795). Santana, very arid coastal area on dried Gramineae, 8/8/2004, LM, 2♂♂1♀ (CZ 5218). Much more specimens were seen flying close to the soil or on gardens standing on small flowers (partially decorative, non autochthon species, partially small Cruciferae and Papilionaceae) in the Bombom, Rolas, Bombaim and Santana (LM, 7-8/ 2004, 2006 and 2010).

Snellen (1873, as *Lycaena lysimon*) registers the species for the first time in ST&PR upon material from PR (no precise data). Sharpe (1893) reports ST and Aurivillius (in Seitz, 1928, as *Cupido (Zizeeria) lysimon*) both islands, always without details. Bacelar (1958a, as *Cupido (Zizeeria) lysimon*), points the re-examined 1954 and 1955 material as well as 1♂ from the PR Airport (DP), 12/11/1955 (CZ-2408), that must be considered lost. Pyrcz (1992) assigns Terreiro Velho and Bombaim.

Z. knysna flies in the Afrotropical, Madagascan and southern Palaearctic Regions and is very abundant in both, ST and PR, at least during the end of the gravana (dry season).

Host-plants belong to quite different families: *Cajanus*, *Lotus*, *Medicago*, *Pisum*, *Trigonella*, *Zornia* (Fabaceae), *Amaranthus* (Amaranthaceae), *Malva* (Malvaceae), *Fagonia*, *Tribulus* (Zygophyllaceae), *Chenopodium* (Chenopodiaceae), *Euphorbia* (Euphorbiaceae) and *Oxalis* (Oxalidaceae).

Zizina antanossa (Mabille, 1877)

MATERIAL EXAMINED: **ST:** R. Bombaim, 20-23/8/2010, LM, 1♂1♀ (CZ 5791).

Z. antanossa was reported only once to the country upon material from Bombaim also (Pyrcz, 1992). It appears in mixed samples with the preceding species, though it is always less common.

The species flies along most of sub-Saharan Africa and in ST&PR it is known in the former island only.

Caterpillars feed on Fabaceae (*Desmodium* and *Indigofera*).

Azanius mirza (Plötz, 1880)

MATERIAL EXAMINED: None.

The species was reported in the country only once, from Água Izé (ST) by Pyrcz (1992)

A. mirza flies mostly along open biotopes in the sub-Saharan Africa.

Host-plants are *Acacia*, *Dicrostachys* (Fabaceae) and *Allophylus* (Sapindaceae).

Eicochrysops hippocrates (Fabricius, 1793)

MATERIAL EXAMINED: **PR:** Bombom, garden close to sea, 26/7-16/8/2004, LM, 2♂♂ (CZ 5788). Bombom to Airport, forest margins, 26/7-16/8/2010, LM, 6♂♂1♀ (CZ 5247). Id, 08.30-11.30 h, LM, 3♂♂ (CZ 5790). Terreiro Velho, rain, forest margins, 1/8/2006, LM, 1♂ (CZ 5275).

Pyrcz (1992) assigned for the first (and only) time the species to the country, in Terreiro Velho (PR) and "Lagua" Azul (ST).

E. hippocrates is common in Africa south of Sahara mainly in damp and swampy areas and occurs also in Madagascar; in ST&PR it flies in both islands.

Known host-plants are *Polygonum* and *Rumex* (Polygonaceae).

Euchrysops malathana (Boisduval, 1853)

MATERIAL EXAMINED: **PR:** Bombom, forest margin close to sea, 27/7-9/8/2006, LM, 1♀ (CZ 5273). **ST:** Boavista to S. Nicolau, 15/6/1984, 1♂4♀♀ (MBOC nn). Bongolô, 20/10/1984, TD, 1♂ (CZ 4000). Guinguelheró, 17/7/1955, MCST, 2♂♂ (CZ 2512). Morro Peixe, close to beach, 26/7/2006, LM, 1♂1♀ (CZ 5271). Praia

Melão, 16/7/1955, MCST, 4♂♂ (CZ 2510). R. Bombaim, 23/7-9/8/2006, LM, 3♂♂ (CZ 5268). R. Diogo Vaz, 4/5/1958, EEA, 1♂ (CZ 2990). R. Macaco, near Monte Macaco, 27/8/2010, LM, 2♂♂3♀♀ (CZ5796). Santana, arid coastal area on dried Gramineae, 8/8/2004, LM, 1♀ (CZ 5218).

The re-examined Guinguelheró and Praia Melão specimens were labelled by A. Bacelar as *Lepidochrysops parsimon* and were assigned later (Bacelar, 1958a) to *Cupido (Lepidochrysops) parsimon*. The species was already known from ST by its Aurivillius (*in* Seitz, 1928, sub *Cupido (Euchrysops)*) citation (details unknown); it was recently assigned by Pyrcz (1992) from Terreiro Velho (PR), Bombaim and “Lagua” Azul (ST) and Libert (2001) reports (without details) its presence in ST (or shall he means the country ?).

E. malathana is known from the Afrotropical and Madagascan Regions. In ST&PR it flies in both islands.

Caterpillars feed mainly on Fabaceae (also on Myrtaceae) and are attended by ants of genera *Camponotus* (Formicidae) and *Monomorium* (Myrmicidae).

Euchrysops cf. osiris (Hoppfer, 1855)

MATERIAL EXAMINED: **PR:** Airport, 31/10/1955, DP, 1♂ (CZ 2418). Bombom, forest margins close to beach, LM, 26/7-16/8/2010, 1♂2♀♀ (CZ 5788). Bombom to Airport, forest margins, 12/8/2005, LM, 1♂ (CZ 5247); 28/7-5/8/2006, 1♂ (CZ 5274); 26/7-16/8/2010, 11♂♂3♀♀ (CZ 5789). Stº António, town, 22/11/1955, DP, 1♂ (CZ 2412). Near Terreiro Velho, 3/8/2004, LM, 1♂1♀ (CZ 5215). Terreiro Velho, forest margins, rain, 1/8/2006, LM, 2♂♂ (CZ 5275). No locality, 1969, RN, 1♀ (CZ 4918).

The re-examined specimens from Airport and Stº António were identified by Bacelar (1958a) as *Cupido (Euchrysops) malathana*. Viejo (1984), reports 3♀♀ collected in 8/7/1959 in ST (unknown location, probably PR) and deposited in the Instituto Español de Entomología, in Madrid. Pyrcz (1992) assigns one other sample from Terreiro Velho. The specimens are quite similar to those of *E. osiris* from other countries (e.g., Angola) but some dissimilarity in the wings ventral pattern suggests that they may not belong to the same taxon.

E. osiris occurs along Afrotropical and Madagascan Regions; in ST&PR, if it the studied samples will represent the very same taxon, it flies in PR only.

Caterpillars live on *Rhynchosia*, *Vigna* (Fabaceae- Papilionoidea) and *Becium* (Lamiaceae).

Family NYMPHALIDAE Swainson, 1827

Subfamily Libytheinae Boisduval, 1833

Libythea labdaca labdaca Westwood, 1851

MATERIAL EXAMINED: None.

Sharpe (1893) assigns the species from ST (without details). Bacelar (1948) registers 1♂ from Angolares (MB, today disappeared) collected by F. Newton in May 1888, and reported as identified by E. Sharpe. Viejo (1984) includes the species among the ST representatives based in Bacelar (1948). Pyrcz (1992) adds Bombaim and Água João to the collecting areas and Larsen (2005) assigns its presence in both the islands though without details.

L. labdaca, a frequent migrator, flies mainly in forest, from Guinea to Ethiopia and Kenya.

Caterpillars occur on *Celtis* sp. (Ulmaceae).

Subfamily Danainae Boisduval, 1833

Danaus chrysippus chrysippus (Linnaeus, 1758)

MATERIAL EXAMINED: **ST:** Boavista to S. Nicolau, 15/6/1984, 1♀ (MBOC nn); 7/7/1984, 1♂ (MBOC nn). Guadalupe, road berm on flowers, 26/7/2006, LM, 1♂ (CZ 5272). Monte Café, S. Pedro, 27/9/1954, MCST, 2♂♂3♀♀ (CZ 2359). Praia Melão, 16/7/1955, MCST, 1♂ (CZ 2510). R. Água Izé, 1/12/1954, MCST, 1♂ (CZ 2400). R. Bombaim, 7/8/2005, LM, 1♂ (CZ 5243); 23-25/7/2006, 6♂♂3♀♀ (CZ 5268); 20-23/8/2010, 1♂ (CZ 5731). R. Nova Moka,

16/9/1954, MCST, 1♂ (CZ 2347); 26/9/1954, 1♂ (CZ 2343). S. Tomé ?, 11/5/1971, 1ex. (AF DAN10023). Not labelled, 3♂♂3♀♀ (CIAT, 527, 576, 615, 724-725, nn). More specimens were observed in the wing (LM) during the 7-8/2006, one in Bombom (PR), several in R. Bombaim (ST).

The species was reported from PR (no localities, no dates, no number of specimens) by Snellen (1873, sub *Danaüs*) and Sharpe (1893) registers its presence in ST (species level, again no details). Bacelar (1948, sub *Danaida*) assigns 3♂♂2♀♀ from Obó Vermelho, Saudade and S. Nicolau and 3♀♀ (as ab. *alcippus*) from “São Tomé” (F. Newton – MB); later (Bacelar, 1958a) she reports the 1954 and 1955 re-examined samples registered above though with a few incorrections concerning dates and sexes. Viejo (1984) lists the species from ST and Pyrcz (1992) reports Stº António and Bombaim – this last reference concerned a distinct chromatic morph, though the male we collected in the same place was typical.

The species is sub-cosmopolitan, flying in Afrotropical, Madagascan, southern Palaearctic, Oriental and Australian Regions and is known in ST&PR in both islands.

Caterpillars are polyphagous and were assigned in many species of several genera of Asclepiadaceae and Periploceae.

Subfamily Satyrinae Boisduval, 1833

Melanitis leda (Linnaeus, 1758)

MATERIAL EXAMINED: **PR:** Bombom, 28/7-5/8/2006, resting among Gramineae, LM, 1♀ (CZ 5274). No locality, 1969, RN, 2♀♀ (CZ 4918), 2♂♂ (CZ 4919). **ST:** Boavista to S. Nicolau, 15/6/1984, 1♂ (MBOC nn). R. Ponta Figo, 20/4/1958, EEA, 1♀ (CZ 2978). R. Perseverança, Ribeira Peixe, 6/10/1954, MCST, 1♂1♀ (CZ 2360). R. Saudade, 26/11/1954, MCST, 1♂ (CZ 2339). S. Nicolau, 3/1982, 1♂ (BS 14806). Not labelled, 1♂1♀3ex (CIAT 683, nn).

Sharpe (1893) assigns the species from ST and Aurivillius (1910) reports 1♂1♀ from Água Izé and the f. *ismene* (upon 1♂2♀♀) from Ribeira Palma; after Schultze (1917), it flies also in R. Monte Café. Bacelar (1948) registers 4♂♂1♀ (determined by E. Sharpe, MB, coll. F. Newton, 1865) in R. Saudade and later (Bacelar, 1958a) she reports the 1954 re-examined material, though with a few incorrections concerning dates and sexes. Based in this last paper, Viejo (1984) includes the species in his list of ST butterflies. Pyrcz (1991a) considers that the species presence in ST needs to be confirmed and is not probable, later corrected (Pyrcz, 1992) when he saw material from Terreiro Velho, Bombaim, Água João, Água Izé and “Lagua” Azul.

The species is known to fly along the entire Afrotropical Region, including both, ST and PR, as well as in Madagascar.

Caterpillars feed on *Setaria*, *Panicum*, *Sorghum*, *Andropogon*, *Pennisetum*, *Paspalum*, *Rotboelia*, *Imperata*, *Sporobolus*, *Digitaria*, *Oryza*, *Zea*, *Bambusa* (Poaceae) and *Mariscus* (Cyperaceae).

Bicyclus dorothea concolor Condamin & Fox, 1964

MATERIAL EXAMINED: None.

The species was described from Fernando Po (Aurivillius, 1910, as *Mycalasis melusina* morph *concolor*) and later (Condamin & Fox, 1964) considered as a valid subspecies and assigned as «...particulière à Fernando Poo et caractérisée par la meme coloration chez la femelle que chez le male. ...». Later, Condamin (1973) reports it flies in ST and, eventually also in PR. Viejo (1984) and Pyrcz (1992) point ST, though none recent sample (at least, last half century) could confirm its presence in ST&PR; for true, none of the small brown *Bicyclus* was after our acquaintance recently seen in ST and we (LM) could not trace any specimen of the genus in the island (July-August 2004-2006 and 2010), neither in low littoral areas, nor in higher inland forests.

B. dorothea concolor is a forest species considered, as registered, an endemic from ST and Bioko, though after Condamin (1973) and Larsen (2005), its presence in PR is also assigned as probable; only species we found in PR was, however, *B. vulgaris*.

The lack of any objective reference from ST and from ST&PR and the lack of detailed data relatives to ST at least during

the last half century, led us to suspect about its real presence in the country at least in the present days.

Bicyclus funebris (Guérin-Méneville, 1844)

MATERIAL EXAMINED: None.

The species was assigned by Condamin (1973, map of page 269) to ST&PR but Pycrz (1992) suspects of its real occurrence in the country and Larsen (2005) do not considers its presence there. We agree with these last authors, because as just noticed none specimen of the genus was observed in ST and only one *Bicyclus* is know from PR – see ahead); so, we believe that *B. funebris* range shall not extend to those islands.

B. funebris distributes in woods and secondary forest, along most of Africa south of Sahara.

Bicyclus italus (Hewitson, 1865)

MATERIAL EXAMINED: None.

See note relative to the two preceding species.

The species is known inside forests in West and Central Africa. Though assigned to Bioko (Equatorial Guinea) its presence in ST&PR couldn't ever been confirmed.

Bicyclus medontias Hewitson, 1873

MATERIAL EXAMINED: None.

The species was quite recently reported (without details) from ST by Larsen (2005) and it remains impossible to mistake with any other of the “browns” due to it is bluish (male) or whitish (female) dorsal oblique band crossing the forewing.

B. medontias ranges from Niger to Cameroon, Central African Republic, Zaire, Congo and Gabon, and is present also in Bioko and ST.

Bicyclus sanaos sanaos (Hewitson, 1866)

MATERIAL EXAMINED: None.

See note on *B. dorothea* based on Pycrz (1992) and on his opinion about Condamin (1973) data.

The species is known from Nigeria to Angola, western Uganda and southern Sudan. Its presence in ST&PR was never rectified. Indeed, Larsen (2005, as *B. martius sanaos*) assigns Bioko (Equatorial Guinea), but not ST.

Bicyclus vulgaris (Butler, 1868)

Fig. 60-62.

MATERIAL EXAMINED: PR: Airport, 16/10/1955, DP, 1♀ (CZ 2424); 31/10/1955, 1♀ (CZ 2418); 2/11/1955, 1♀ (CZ 2405). Bombom, forest margin close to beach, 10/8/2005, LM, 2♀♀ (CZ 5245); 11/8/2005, 3♀♀ (CZ 5246); 28/7-5/8/2006, 11♀♀ (CZ 5274); 26/7-16/8/2010, 1♂2♀♀ (CZ 5788). Bombom to Airport, forest margins, 6/8/2004, LM, 2♂♂ (CZ 5217); 15/8/2005, 3♀♀ (CZ 5250); 26/7-16/8/2010, 13♂♂12♀♀ (CZ 5789). Id, 08.30-11.30 h, 26/7-16/8/2010, LM, 3♂♂ (CZ 5790). R. Esperança, 6/11/1954, MCST, 3♂♂2♀♀ (CZ 2305). R. Sundry, 12/10/1954, MCST, 1♂ (CZ 2384); 2/8/1955, 2♂♂2♀♀ (CZ 2514); 3/9/1955, 1♂1♀ (CZ 2515); 8/11/1955, 1♂1♀ (CZ 2327); 17/11/1955, 1♂ (CZ 2326); 7-8/11/2005, AS, 3♂♂ (CZ 5262). Terreiro Velho, rain, forest margin, 1/8/2006, LM, 1♀ (CZ 5275). Much more specimens were seen (LM) during the dry seasons (2004-2006 and 2010) mainly along the forest road Bombom-Airport where the species is very common on low vegetation; the specimens are especially actives in shadiest areas around sunset (during lighter and warmer hours, they “disappear” in the forest).

Aurivillius (1910, as *Mycalis vulgaris* var. *tolosa*) reports 5♂♂4♀♀ from R. Infante D. Henrique. Bacelar (1958a, also as *M. v. var. tolosa*) registers the re-examined material from 1954 and 1955 while with a few incorrections concerning sexes and dates; she assigns, further, a few specimen from St° António-town (CZ-2406) and 1♂ from the Airport (DP) (CZ-2428) which must be considered lost. Viejo (1984) points ST without details. Pycrz (1992) reports material from St° António and Terreiro Velho and questions the species presence in ST noticed by Viejo – where it almost certainly lacks.

B. vulgaris occurs from Gambia and Senegal to Angola, Kenya and Tanzania.

Subfamily **Charaxinae** Guenée, 1865

Charaxes antiquus Joicey & Talbot, 1926

MATERIAL EXAMINED: None.

Joicey & Talbot (1926) describe *C. brutus antiquus* from ST (no details, coll. Barns) and Plantrou (1983) recognizes its validity at species level. Henning (1989) reports again it is endemic from the island and Pycrz (1992) studied material from Bombaim and registers that Canu collected the species at Lagoa Amélia surroundings. Viejo (1984, as *C. brutus*) includes the taxon in his list of ST representatives and Canu (1994) notes «...j'ai eu le plaisir de capturer...Charaxes antiquus en me demandant pourquoi il était si rare...».

The species is endemic from ST.

Charaxes barnsi Joicey & Talbot, 1927

MATERIAL EXAMINED: PR: Not labelled, 3♂♂ (CIAT 688, 697, nn).

The species was described (Joicey & Talbot, 1927) upon 3♂♂3♀♀ from PR (none detail, Barns material). Plantrou (1983), Viejo (1984) and Henning (1988, as *Ch. barnesi* and *Ch. barnsi*) report the species, again without details, from the same island and Pycrz (1992) assigns material from Terreiro Velho.

C. barnsi is exclusively known from PR.

Charaxes candiope (Godart, 1824) ssp.

MATERIAL EXAMINED: None.

The nominate subspecies of *C. candiope* was reported by Henning (1988) as part of the PR fauna. Pycrz (1992) registers material from Terreiro Velho and Wojtusiak & Pycrz (1997) report the species as collected in ST also, though exclusively in Macambará – always as the nominate subspecies. Plantrou (1983) discusses, however, that the male genitalia of the PR males is distinct from that of the typical specimens from West Africa, approaching what is known from *C. thomasius*, and emphasises that the PR specimen needs to be carefully compared with samples of neighbouring continental African areas.

C. candiope candiope is known from woods and forests in most of sub-Saharan Africa, except for Western Cape (South Africa) being present, in both, ST and PR, though the subspecific features need to be confirmed in either island.

Host-plants known to the typical subspecies in continental Africa are *Croton* (Euphorbiaceae) and *Pennisetum* (Poaceae).

Charaxes defulvata Joicey & Talbot, 1926

MATERIAL EXAMINED: None.

Joicey & Talbot (1926) describe *C. varanes defulvata* upon one only female collected by Barns (ST, unknown locality, I-III/1926, BM). Later, van Someren (1974) describes the male sex upon the very same specimen and presents a black and white photo (upper surface – left – and under surface – right). Plantrou (1983) and Henning (1988) consider, both, *C. defulvata* as a good species; first author, states that it was never found by Canu during his stay in ST (1980 and 1981), while second one re-describes again the “male”, though none of them present photos. Viejo (1984, as *C. varanes*) based in Joicey & Talbot (1926) assigns the species to ST without comments and Ackery *et al.* (1995) consider again the taxon as a valid species. Canu (1994) reports «...j'ai recherché vainement, et de tous côtés, Charaxes varanes defulvata...» and Wojtusiak & Pycrz (1997) re-examined the holotype and only known specimen, undoubtedly one female, and comment Henning (1988) statements, mainly those concerning activity and flight periods. Meanwhile, D'Abbrera (1980) assigns *C. varanes defulvata* from ST without comments but later (D'Abbrera, 2004) he notes that the taxon is a valid species and presents one colour photo of the holotype (upper surface) reinforcing that it is really one female – it concerns the very same specimen which white and black photos were presented by van Someren (1974) and described as a male; the hindwings are, indeed, damaged in the very same way. Shall this species be extinct? Or

shall it correspond to a vagrant atypical female of the continental *C. varanes*?

If valid, the species is (was?) endemic from ST. The ECOFAC (1995) recognizes its specific status and assigns it shall be extinct.

***Charaxes lemosi* Joicey & Talbot, 1927**

MATERIAL EXAMINED: **PR**: Not labelled, 1♂ (CIAT nn).

The species was described from PR (no details) with base on 8♂♂2♀♀ collected by Barns (Joicey & Talbot, 1927), but van Someren (1971) considers it is a *C. lucretius* subspecies. Pycrz (1992) reports new material from Terreiro Velho, while Viejo (1984) and Henning (1988) assign the taxon from the island with no comments. Before that, Aurivillius (1910) reported 1♂ of *C. lucretius* from Roça Infante D. Henrique certainly of this species.

C. lemosi is an endemic from PR.

***Charaxes monteiri* Staudinger, 1886**

Fig. 63-66.

MATERIAL EXAMINED: **ST**: R. Bombaim forest, hanging trap, offered, 13/8/2004, 1♂ (CZ 5221). S. Nicolau, 12/3/1982, leg. Canu, 4♂♂2♀♀ (BS 12948-12953); 3/1982, leg. BS, 1♂1♀ (CZ 4296); 1♂ (AF NYM12651).

C. monteiri was described from ST and Sharpe (1893), Rothschild & Jordan (1900), Aurivillius (*in* Seitz, 1928), van Someren (1971, as *C. montieri*), Plantrou (1983) and Henning (1988, also as *C. montieri*) assign, always without geographical details, the species from the same island. Bacelar (1948) registers 5♂♂ from the R. Saudade upon lost material collected by F. Newton in 1865 (MB) and Pycrz (1992) reports new samples from Bombaim, Água João and Água Izé.

The species is known exclusively from ST.

***Charaxes odysseus* Staudinger, 1892**

Fig. 67-70.

MATERIAL EXAMINED: **ST**: S. Nicolau, 15/1/1982, leg. Canu, 1♂1♀ (BS 1912-1913).

Staudinger (1892) describes the species from ST and Joicey & Talbot (1926) re-describe *C. odysseus* upon material from the very same island (detailed origin never reported). Rothschild & Jordan (1900), Aurivillius (*in* Seitz, 1928), Plantrou (1983), Viejo (1984) and Henning (1988) point ST (once again, no details) and Pycrz (1992) reports Bombaim and Água João. Canu (1994) registers some specimens captured (eventually including the pair offered to BS) and considers that the species is much localized.

C. odysseus is an endemic from ST.

***Charaxes thomasi* Staudinger, 1886**

Fig. 71-72.

MATERIAL EXAMINED: **ST**: Boavista to S. Nicolau, 6/1984, 1♂ (MBOC nn). R. Bombaim forest, hanging trap, offered, 13/8/2004, 1♂ (CZ 5221). Macambará, 27/11/1994, leg. Rato Cabinda, 1♀ (AF NYM11222); 28/4/1994, 1♀ (AF NYM11223); 30/4/1994, 2♂♂ (AF NYM11224-11225). S. Nicolau, 15/3/1982, leg. Canu, 8♂♂6♀♀ (BS 12732-12745), 1♂1♀, same data, offered in 2006 to M.M. Fernandez, 1♂1♀ (AF NYM11220-11221); 3/1982, 1♀1♀, leg. BS (CZ 4296). No details, leg. J. Bizarro, 5♂♂3♀♀ (CZ 4961); 2♂♂1♀ (CIAT 461, 581, 723), det. As *C. candiope thomasi*.

Staudinger (1886) describes *C. candiope thomasi* from ST. Rothschild & Jordan (1900), Aurivillius (*in* Seitz, 1928), Henning (1988), Pycrz (1992, material from Bombaim, Água João and Água Izé), D'Abreira (2004) and Larsen (2005) report the taxon from the same island, always at the subspecific level. It was recognized, however, as a valid species by Plantrou (1983), D'Abreira (1980) and Wojtusiak & Pycrz (1997) – last one based in material from Macambará, though details were always unreported. Viejo (1984, as *C. candiope*) following D'Abreira (1980), includes the taxon in his ST butterflies list.

The species, which males and females are identical, is an endemic from ST.

Subfamily **Nymphalinae** Swainson, 1827

***Vanessa cardui* Linnaeus, 1758**

MATERIAL EXAMINED: **PR**: Not labelled, 1♀1ex (CIAT 614, 703). **ST**: Boavista to S. Nicolau, 6/1984, 2♂♂ (MBOC nn). Two more specimen were seen in the Rolas Islet, on the littoral cliffs (LM, 8/2005 and AS, 11/2005).

Pycrz (1992) reports the species by the first time to ST&PR (to ST) upon the sample deposited in the CIAT and rectified (as previously assigned by Mendes & Bivar-de-Sousa, 2012) as obtained in the PR; his suggestion of the presence of *C. cardui* in both islands is, so, confirmed.

This sub-cosmopolitan species presents an extremely wide range along several Regions, being known along the entire sub-Saharan Africa and is present in ST&PR in the two islands.

Caterpillars are highly polyphagous but the preferred host-plants are Urticaceae, Asteraceae and Malvaceae, though when not available they may eat almost everything.

***Precis pelarga* (Fabricius, 1775)**

MATERIAL EXAMINED: **PR**: Airport, 24/10/1955, DP, 1♂ (CZ 2427); 27/10/1955, 1♂ (CZ 2428); 30/11/1955, 1♂ (CZ 2415); 31/10/1955, 1♂ (CZ 2418); 22/11/1955, 1♀ (CZ 2411). R. Esperança, 10/12/1954, MCST, 1♂ (CZ 2346). R. Francisco Mantero, 16/11/1954, MCST, 6♂♂ (CZ 2369). R. Infante D. Henrique, 9/11/1954, MCST, 2♂♂1♀ (CZ 2310). R. Sundry, 8/11/1954, MCST, 2♂♂ (CZ 2327); 9/11/1954, 1♂ (CZ 2309); 17/11/1954, 1♂ (CZ 2326); 7-8/11/2005, AS, 1♀ (CZ 5262). No locality, 1969, RN, 1ex (CZ 4918). **ST**: Not labelled, 3♂♂2ex (CIAT 366, 413, 493, 501).

Aurivillius (1910, sub *Precis*) assigns 1♀ from Baía Oeste and 7♂♂4♀♀ from R. Infante D. Henrique. Bacelar (1948) reports 1♂ from ST (MB) obtained by F. Newton (no details, disappeared), and discusses the similarities shared with *P. arctia*. Material reported by Bacelar (1958a, as *P. pelarga* and as *P. s. f. pelargoides*) corresponds to most of the re-examined specimens obtained in 1954 and 1955. Pycrz (1992) adds material from Terreiro Velho and Bombaim.

The species occurs from Senegal to Angola, Zaire, Uganda and Ethiopia and flies in both islands, ST and PR.

Host-plants are mostly Lamiaceae as *Solenostemon*, *Coleus* and eventually other genera, but caterpillars may occur also on cacao (*Theobroma cacao*, Sterculiaceae).

***Precis sinuata sinuata* Plötz, 1880**

MATERIAL EXAMINED: **ST**: Boavista, 3/6/1984, 1♀ (MBOC nn). Boavista to S. Nicolau, 6/1984, 8♂♂3♀♀ (MBOC nn). No locality, 11/5/1971, 1ex. (AF NY690010). Not labelled, 4♂♂2♀♀ (CIAT 493, 623, 752, 756).

Sharpe (1893, sub *Junonia*) reports the species from ST (without details), Aurivillius (1910, as the *f. pelargoides*) assigns Água Izé (1♂2♀♀) and Bacelar (1948) R. Saudade and ST (2♂♂, MB, coll. F. Newton, no details). Pycrz (1992) reports Bombaim and Água João.

P. s. sinuata is known from Sierra Leone to Cameroon and Mozambique and ST is explicitly registered by Ackery *et al.* (1995). It seems to lack in PR.

***Hypolimnas anthedon anthedon* Doubleday, 1845**

MATERIAL EXAMINED: **PR**: Airport, 30/10/1955, DP, 2♂♂ (CZ 2417). Bombom forest margins near beach, 23/7-9/8/2006, LM, 1♂1♀ (CZ 5273). R. Sundry, 2/8/1955, MCST, CB, 1♀ (CZ 2514). No locality, 1969, RN, 1♂ (CZ 4918). **ST**: Monte Café, 30/4/1992, 1♂ (JPC 0064). R. Ponta Figo, 20/4/1958, EEA, 1♀ (CZ 2978). R. Rio do Ouro, 8/5/1958, EEA, 2♀♀ (CZ 2994). S. Tomé town, Praia do Lagarto, 25/8/2010, LM, 1♂ (CZ 5793). No locality, 11/5/1971, 1ex (AF NY670013). Not labeled, 1♂1♀1ex (CIAT 59, 90, nn). Three further specimens were seen in the wing (LM), two in 8/2005, close to the Ana Chaves Bay, and in a forest path near R. S. João (ST), and a third in 8/2010 in Bombom forest margin close to beach (PR).

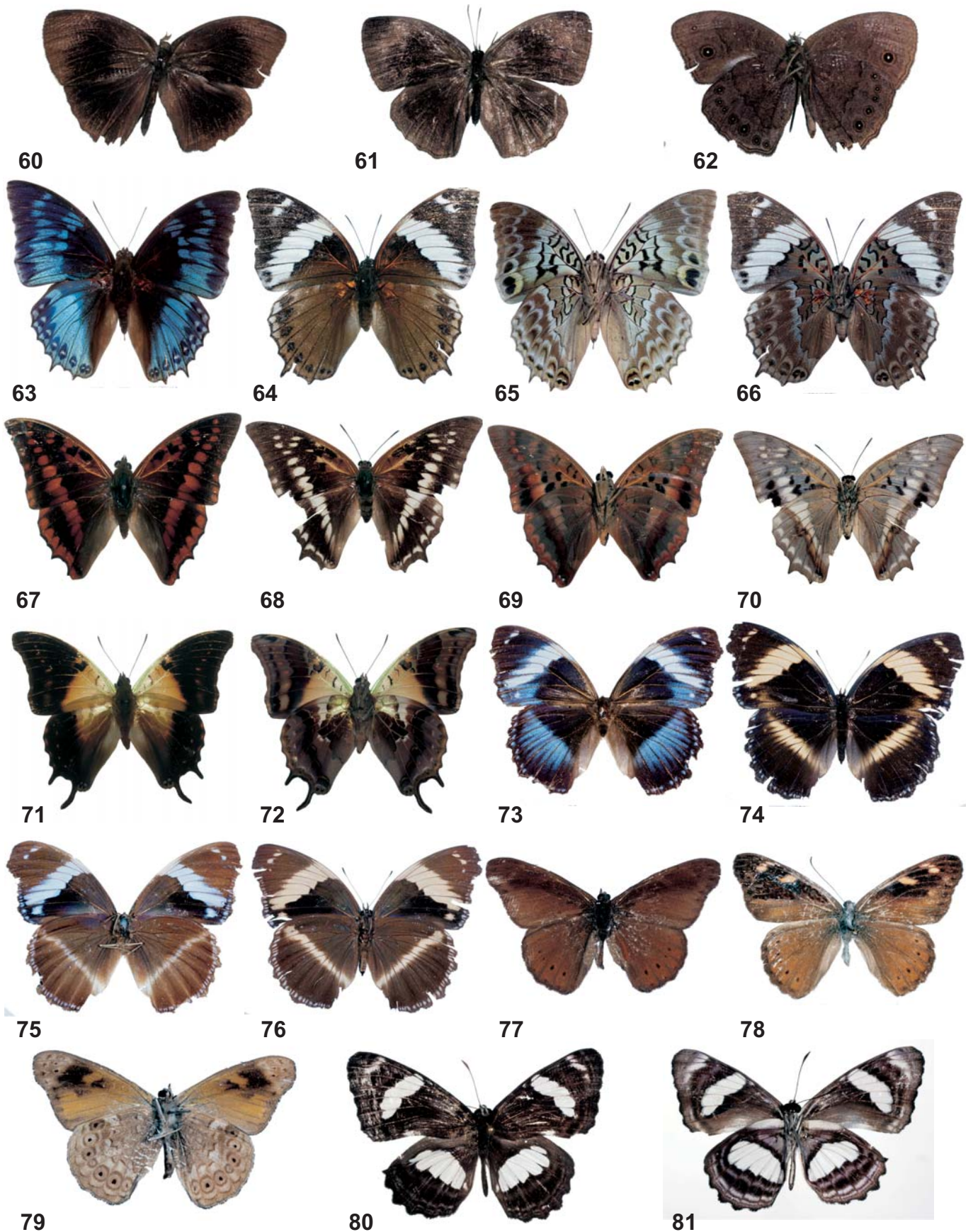


Fig. 60. *Bicyclus vulgaris* male D. **Fig. 61.** *Bicyclus vulgaris* female D. **Fig. 62.** *Bicyclus vulgaris* male V. **Fig. 63.** *Charaxes monteiri* male D. **Fig. 64.** *Charaxes monteiri* female D. **Fig. 65.** *Charaxes monteiri* male V. **Fig. 66.** *Charaxes monteiri* female V. **Fig. 67.** *Charaxes odysseus* male D. **Fig. 68.** *Charaxes odysseus* female D. **Fig. 69.** *Charaxes odysseus* male V. **Fig. 70.** *Charaxes odysseus* female V. **Fig. 71.** *Charaxes thomasius* male D. **Fig. 72.** *Charaxes thomasius* male V. **Fig. 73.** *Hypolimnas salmacis thomensis* male D. **Fig. 74.** *Hypolimnas salmacis thomensis* female D. **Fig. 75.** *Hypolimnas salmacis thomensis* male V. **Fig. 76.** *Hypolimnas salmacis thomensis* female V. **Fig. 77.** *Sevenia boisduvali insularis* male D. **Fig. 78.** *Sevenia boisduvali insularis* female D. **Fig. 79.** *Sevenia boisduvali insularis* male V. **Fig. 80.** *Neptis larseni* male D. **Fig. 81.** *Neptis larseni* male V.

Sharpe (1893, as *H. dubius* ab. *damoclina*) is the first to report the species from ST, though without details. Aurivillius (1910, as *H. dubia*, *H. d. f. damoclina* and *H. d. f. anhedon*) assigns Baía Oeste (2♂♂1♀), R. Infante D. Henrique (2♀♀) and Água Izé (7♂♂3♀♀). Bacelar (1948, as *H. dubia*) studies 2♀♀ (lost, MB) from Obó Vermelho, 2♂♂1♀ from Angolares, 1♂ from Saudade and 1♂1♀ from “São Tomé” and later (Bacelar, 1958a, as *A. dubia* f. *anedon* and *A. dubia* ab. *damoclina*) registers the 1955 re-examined material. Viejo (1984, again as *H. dubius*) assigns, without detailed location, 1♀ (ST: 8/1959) in the Instituto Español de Entomología, in Madrid, Spain. Pyrcz (1992, as *H. d. dubius*) reports Terreiro Velho, Bombaim, Água João and Água Izé and notes that while the females are bigger and polymorphic in ST they are smaller and all identical in PR.

H. a. anhedon is known from West Africa to Sudan and two further subspecies are known, one from Madagascar, other from South Africa and East Africa, east to the Rift Valley; in ST&PR it flies in both islands.

Caterpillars feed on *Fleurya*, *Urera*, *Urtica* (Urticaceae) and *Berkheia* (Asteraceae).

Hypolimnas misippus (Linnaeus, 1764)

MATERIAL EXAMINED: **PR**: Airport, 24/10/1955, DP, 1♀ (CZ 2427); 2/11/1955, 1♀ (CZ 2405); 30/11/1955, 1♂ (CZ 2415). Bombom, 9/11/2005, AS, 1♂ (CZ 5263); 27/7-9/8/2006, LM, 1♂ (CZ 5273). No locality, 1969, RN, 1♂1♀ (CZ 4918). Not labelled, 1♀ (CIAT 614). **ST**: Água Izé, 28/10/1954, MCST, 1♂ (CZ 2336); 19/6/1984, 2♂♂2♀♀ (MBOC nn); 7/11/1984, TD, 2♂♂ (CZ 4006). Boavista, 3/7/1984, 1♀ (MBOC nn). Boavista to S. Nicolau, 5/1986, CP, 10♂♂3♀♀ (BS 18997-19002, 19008-19009, 19136-19140). Bobo Forro, 10/11/1984, TD, 2♀♀ (CZ 4009); 12/11/1984, 1♀ (CZ 4010). Bongoló, 20/10/1984, TD, 1♀ (CZ 4000). Fernão Dias, 9/5/1958, EEA, 8♂♂1♀ (CZ 2996); 2/11/1984, TD, 1♂4♀♀ (CZ 4005). Guadalupe, 26/10/1984, TD, 1♂ (CZ 4001). Guinguelheró, 17/7/1955, MCST, 1♂ (CZ 2512). Ilheu das Rolas, 30/10-3/11/2005, AS, 4♂♂2♀♀ (CZ 5260). Monte Café, 27/9/1954, MCST, 1♀ (CZ 2276); 19/4/1958, EEA, 1♀ (CZ 2977); 21/4/1958, 1♀ (CZ 2979); 23/4/1958, 2♂♂ (CZ 2981); 30/4/1992, 1♂1♀ (JPC 0065, 0069). Id. S. Pedro, 27/10/1954, MCST, 1♀ (CZ 2277). Morro Peixe, 4/7/1984, 5♂♂4♀♀ (MBOC nn). Praia Melão, 7/12/1954, MCST, 4♂♂3♀♀ (CZ 2354); 16/7/1955, 1♂1♀ (CZ 2510). Praia Pantufo, 7/12/1954, MCST, 1♂ (CZ 2498). R. Colónia Açoreana, 6/12/1972, FO, 1♀ (CZ 3792). R. Diogo Vaz, 4/5/1958, EEA, 1♂ (CZ 2990); 5/5/1958, 1♂3♀♀ (CZ 2991). R. Granja, 14/7/1955, MCST, 2♂♂ (CZ 2513). R. Ponta Figo, 16/5/1958, EEA, 1♂ (CZ 3001); 17/5/1958, 1♂1♀ (CZ 3002). R. Rio do Ouro, 22/10/1954, MCST, 1♂ (CZ 2356). Stª Catarina, 29/4/1958, EEA, 1♂ (CZ 2985); 21/6/1984, 4♂♂5♀♀ (MBOC nn); 5/1986, CP, 2♀♀ (BS 19141-19142). S. Nicolau, 6/1984, 11♂♂4♀♀ (MBOC nn). São Tomé town, 9/12/1954, MCST, 1♀ (CZ 2500). Uba-Budo, 7/1917, 2♂♂, n. 582, already identified (CZ 5800). Vista Alegre, 16/5/1986, CP, 2♂♂2 ex (AF NYM672030-672033). No locality, 1915-1920, AS, 5♂♂1♀ (CZ 2); 3/1982, leg. Canu, 1♂ (BS nn). Not labelled, 26♂♂32♀♀ (CIAT 52-54, 56, 58, 90, 98, 102, 106, 112, 121, 136, 140, 142, 165, 315-316, 318-319, 481, 483, 495, 632, 658, 754, nn).

Snellen (1873, 1882, sub *Diadema*) reports the species from PR (no details). Aurivillius (1910) assigns 2♀♀ from Baía Oeste (where he registers also ab. *inaria*), 1♂3♀♀ from R. Infante D. Henrique and 1♂1♀ from Água Izé. Sharpe (1893) and Schultze (1920, as ab. *inaria*) report 1♀ from Monte Café. Bacelar (1948) assigns 3♂♂1♀ collected by F. Newton in ST and identified by E. Sharpe (lost, MB) and later (Bacelar, 1958a as ab. *inaria*) she report the great majority of the 1954-1955 re-examined material. Viejo (1984) assigns 2♂♂ obtained during the August 1959 in Sao Thomé (precise location unknown) deposited in the Instituto Español de Entomología, in Madrid and Pyrcz (1992) points Stª António, Bombaim, Água João and Água Izé. The specimen from Uba-Budo, accditioned among a few other butterflies in one small box registered as CZ 5800, were almost certainly collected by A. F. de Seabra

or by someone in his team, according to the known records (Seabra, 1922).

The species occurs along the Afrotropical, Madagascan and Oriental Regions and in ST&PR it seems common and is known to fly in both islands.

Caterpillars are highly polyphagous and were reported on *Portulaca*, *Talinum* (Portulacaceae), *Asystasia*, *Blepharis*, *Justicia*, *Pseuderanthemum*, *Ruellia* (Acanthaceae), *Amaranthus* (Amaranthaceae), *Ipomoea* (Convolvulaceae), *Abelmoschus*, *Abutilon* and *Hibiscus* (Malvaceae).

Hypolimnas salmacis thomensis Aurivillius, 1910

Fig. 73-76.

MATERIAL EXAMINED: **ST**: Buenos Aires, 22/10/1919, SB, 1♀ (CZ 297). Macambrará, 25/4/1994, 1ex (AF NYM67111); 27/4/1994 1ex (AF NYM 67112). R. Granja, 14/7/1955, MCST, 1♂ (CZ 2513). R. Bombaim, 20-23/8/2010, LM, 1♂ (CZ 5791). R. Monte Café, 19/4/1958, EEA, 1♀ (CZ 2977). S. Nicolau, 3/1982, leg. Canu, 1♀ (BS 18975); 6/1984, 2♂♂ (MBOC nn). Not labelled but certainly Uba-Budo, 7/1917, n. 562, 1♂, det. as “Gen ? Sp ?” (CZ 5800). Not labelled, 1♂2♀♀ (CIAT 542, 691, 735). Two further males were seen in the wing, one at R. Bombaim forest margin, in 26/7/2006, in a completely clouded day, ca 11.00 h, one other in Ponta Furada, in 24/7/2010, also at the end of the morning and also inside forest.

The subspecies was described (as a variety) upon 1♂ from Ribeira Palma (Aurivillius, 1910). Joicey & Talbot (1926) assign ST (details unknown, coll. Barns), and Bacelar (1958a) reports the 1919 and 1955 re-examined samples. Viejo (1984) considers the species presence in ST based in Joicey & Talbot (1926). Pyrcz (1992) registers Bombaim, Água João and Água Izé.

H. salmacis thomensis is endemic from ST.

Caterpillars of the nominal subspecies are known on *Fleurya* and *Urera* (Urticaceae).

The specimen assigned from Uba-Budo was certainly collected in that area as its date and registration number are identical to 2 *H. misippus* ♂♂ preserved in the same entomological box (one of a few small boxes recently found among the former Museu Agrícola do Ultramar assets, today integrated in the JBT, and registered as CZ). As reported relatively to *Papilio nerminae*, *P. demodocus* and *Hypolimnas misippus* and despite the lack of identification and of precise informations on collecting locality and date of specimen CZ 5800, we believe that all the insects in this box were collected in the same date (so, July 1918) by A. F. de Seabra or by someone in his team (Seabra, 1922).

Hypolimnas salmacis (Drury, 1773) ssp. indet.

MATERIAL EXAMINED: None.

Pyrcz (1992) saw *H. salmacis* in ST only (so, certainly individuals of the previous subspecies) but he reports that Canu collected 2 specimens of the same species near Porto Real (disappeared?), on the course of his 10 years of field work in the country, and he suggests that they may concern an undescribed subspecies. Canu (1994) reports indeed, the capture of 1♂1♀ in PR, though he considered that they belong to *H. monteironis*, a species quite similar to *H. salmacis* known from continental Africa only (Ackery *et al.*, 1995). No more data could be added in the last years and so, the taxonomic position of these specimens remains dubious.

The species flies in lowland forests, from Sierra Leone to Gabon, Zaire Angola (Cabinda), Uganda and south-eastern Ethiopia, as well as in the Guinea Gulf Islands of Bioko and São Tomé.

Junonia cymodoce lugens Schultze, 1912

MATERIAL EXAMINED: **PR**: Airport, 19/10/1955, DP, 1♂ (CZ 2420); 27/10/1955, 1♀ (CZ 2428); 20/11/1955, 1♀ (CZ 2410). Bombom, close to beach, 27/7-9/8/2006, LM, 1♂ (CZ 5273). Bombom to Airport, forest margins, 13/8/2005, LM, 1♂ (CZ 5248); 26/7-16/8/2010, 1♀ (CZ 5789). Id. 08.30-11.30 h, 26/7-16/8/2010, LM, 4♂♂2♀♀ (CZ 5790). Maria Correia, 26/5/1986, CP, 1♂ (BS 18949). R. Sundry, 7-8/11/2005, AS, 2♂♂ (CZ 5262). No locality, 1969, RN, 3♂♂1♀ (CZ 4918). Not labelled, 6ex (CIAT nn). Several

other specimens were observed (LM) in the 8/2004-2006 and 2010, between Bombom and the Airport, mainly inland and in shadow areas of forest margin.

Bacelar (1958a, sub *Kallima*, at species level) assigns the 1955 re-examined material. The species was reported by Pyrcz (1992, as *Kallima cymodoce*) from Stº António and Terreiro Velho, and (with-out details) by Wojtusiak & Pyrcz (1995, again sub *Kallima* and at species level) from the same island, who consider that it shall represent an accidental well-succeeded introduction in the country, and present several data on the species ecology and behaviour.

Ackery *et al.* (1995, sub *Kamilla*) consider the species is monotypical and flies from Ivory Coast to Angola and western Uganda. Larsen (2005) adds western Tanzania and defends that the nominate subspecies occurs from Guinea to Nigeria only, and that the remaining populations belong to the present subspecies (PR is explicitly assigned).

After Wojtusiak & Pyrcz (1995), PR caterpillars feed on *Ruellia graecizans* (Acanthaceae) and are abundant in the island during February and March.

Junonia oenone oenone (Linnaeus, 1758)

MATERIAL EXAMINED: **PR**: Airport, 15/10/1955, DP, 1♂1♀ (CZ 2423); 16/10/1955, 1♀ (CZ 2424); 17/10/1955, 2♂♂ (CZ 2421); 21/10/1955, 1♀ (CZ 2425); 23/10/1955, 1♀ (CZ 2426); 24/10/1955, 1♂2♀♀ (CZ 2427); 29/10/1955, 1♂1♀ (CZ 2420); 31/10/1955, 1♂2♀♀ (CZ 2418); 1/11/1955, 1♂ (CZ 2404); 2/11/1955, 3♂♂ (CZ 2405); 17/11/1955, 1♂1♀ (CZ 2409); 25/11/1955, 1♂ (CZ 2413); 26/11/1955, 1♂ (CZ 2414); 30/11/1955, 1♀ (CZ 2415). Bombom, 5-6/11/2005, AS, 1♂ (CZ 5261). Bombom to Airport, 28/7-5/8/2006, LM, 1♀ (CZ 5274); 26/7-16/8/2010, 6♂♂2♀♀ (CZ 5789). Id, 08.30-11.30 h, 26/7-16/8/2010, LM, 2♂♂2♀♀ (CZ 5790). Maria Correia, 26/5/1986, CP, 2♂♂3♀♀ (BS 18943-18947). R. Esperança, 13/9/1954, MCST, 1♂ (CZ 2380); 12/10/1954, 1♂1♀ (CZ 2384); 10/12/1954, 1♂1♀ (CZ 2346). R. Infante D. Henrique, 9/11/1954, MCST, 1♂ (CZ 2310). R. Sundry, 8/11/1954, MCST, 1♂1♀ (CZ 2327); 9/11/1954, 2♂♂ (CZ 2309); 17/11/1954, 4♂♂ (CZ 2326); 2/8/1955, 5♂♂1♀ (CZ 2514); 3/9/1955, 2♂♂ (CZ 2515). Terreiro Velho forest margin, rain, 1/8/2006, LM, 1♂ (CZ 5275). No locality, 1969, RN, 4♂♂5♀♀ (CZ 4918), 15♂♂13♀♀ (CZ 4919). Not labelled, 1♂1♀ (CIAT 14, 353 det. as *Precis clelia*). **ST**: Boavista, 6/1984, 1♂4♀♀ (MBOC nn). Bobo Forro, 12/11/1984, TD, 2♂♂ (CZ 4009). Bongolô, 20/10/1984, TD, 2♂♂2♀♀ (CZ 4000). Fernão Dias, 2/11/1984, TD, 1♀ (CZ 4005). Guadalupe, close to a gas station, 24/8/2010, LM, 1♀ (CZ 5792). Monte Café, 30/4/1992, 1♂ (JPC 0066). R. Bombaim, 7/8/2005, LM, 1♂2♀♀ (CZ 5243); 23-25/7/2006, 2♂♂ (CZ 5268). Sª Catarina, 21/6/1984, 3♂♂5♀♀ (MBOC nn). S. Nicolau, 6/1984, 2♂♂5♀♀ (MBOC nn). Not labelled, 8♂♂7♀♀ (CIAT 102, 104, 114, 130, 161, 165, 352, 487, 683, 752, 758, nn). The 1984 Boavista sample is only a small part of the specimens observed that time as the species was then the commonest butterfly in the fields and garden around the hotel, along the path leading to S. Nicolau waterfall and in the neighbouring road to Monte Café and Nova Moka. It was also quite common (several non-collected specimens) during 2005-2010 dry seasons along most of the roads in both islands, particularly between Bombom and Airport (PR).

Bacelar (1958a, as *Precis clelia*) registers the species from PR upon most of the 1954 and 1955 re-examined specimens and Pyrcz (1992) reports the subspecies from Stº António, Terreiro Velho, Bombaim, Água João, Água Izé and “Lagua” Azul. The subspecies flies in most of Afrotropical Region and occurs in ST&PR in both islands.

Known host-plants are *Asystasia*, *Barleria*, *Brillantaisia*, *Hypoestes*, *Justicia*, *Paulowilhelmia* and *Ruellia* (Acanthaceae).

Junonia terea terea (Drury, 1773)

MATERIAL EXAMINED: **PR**: Airport, 27/10/1955, DP, 1♂ (CZ, 2428); 17/11/1955, 1♂ (CZ 2409). Bombom to Airport, forest margins, 28/7-5/8/2006, LM, 4♂♂ (CZ 5274); 26/7-16/8/2010, 2♂♂1♀ (CZ 5789). Id, 08.30-11.30 h, LM, 5♂♂1♀ (CZ, 5790). R. Infante D.

Henrique, 9/11/1954, MCST, 2♂♂ (CZ 2310). R. Sundry, 2/8/1955, MCST, 1♂1♀ (CZ 2514); 3/9/1955, 2♂♂3♀♀ (CZ 2515). No locality, 1969, RN, 1♂ (CZ 4918).

Aurivillius (1910, sub *Precis*) assigns 1♂ from Baía Oeste and 1♂ from R. Infante D. Henrique. Bacelar (1958a, also sub *Precis*) registers the re-examined material from 1954 and 1955, despite a few inaccuracies and omissions. Pyrcz (1992) reports Terreiro Velho.

J. t. terea distributes after Ackery *et al.* (1995) from Senegal to Nigeria but Larsen (2005) adds Cameroon, Congo and Gabon, plus Zaire to western Kenya. In ST&PR it is known exclusively in PR.

Host-plants are *Asystasia*, *Barleria*, *Hygrophila*, *Justicia*, *Paulowilhelmia*, *Phaulopsis* and *Ruellia* (Acanthaceae).

Subfamily **Cyrestinae** Guenée, 1865

Cyrestis (Azania) camillus camillus (Fabricius, 1781)

MATERIAL EXAMINED: **PR**: Airport, 17/11/1955, DP, 1♂ (CZ 2409). Bombom, close to beach, 10/8/2005, LM, 1♂ (CZ 5245); 9/11/2005, AS, 1♂ (CZ 5263); 27/7-9/8/2006, LM, 2♂♂2♀♀ (CZ 5273); 26/7-16/8/2010, 1♂1♀ (CZ 5788). Bombom to Airport, forest margins, 2/8/2004, LM, 1♂1♀ (CZ 5213); 28/7-5/8/2006, 2♂♂ (CZ 5274); 26/7-16/8/2010, 1♂2♀♀ (CZ 5789). Id, 08.30-11.30 h, 1♂1♀ (CZ 5790). No locality, 1969, RN, 1♂ (CZ 4918). In Bombom and in road Bombom - Airport many non-collected specimens were seen in the wing (LM) in the forest edges at the treetops or at least 10-20 m above the soil during the 7-8/ 2004-2006 and mainly, in the 2010 dry-season, especially around 14.00-16.00 h.

First reference of the species to the country concerns the specimen collected in 1955 by DP (PR Airport – field book) and that Bacelar (1958a) wrongly considers with the number CZ-2403 and reports to R. Sundry, 27/11/1954. Pyrcz (1992) assigns Stº António and Terreiro Velho.

After Larsen (2005) the species is known from Senegal to Nigeria Cameroon, islands of Bioko and PR (it seems to lack in ST), Congo, Angola, RCI, and Zaire to Ethiopia.

Caterpillars live mainly on Moraceae (*Morus*, *Antiaris*, *Chlorophora*, *Ficus*). In PR and after Pyrcz (1991a) they shall feed on *Treculia africana* (also Moraceae).

Subfamily **Biblidinae** Boisduval, 1833

Sevenia amulia amulia (Cramer, 1777)

MATERIAL EXAMINED: **PR**: Airport, 12/10/1955, DP, 1♀ (CZ 2422).

The re-examined female was the only specimen known from the country (Bacelar, 1958a, sub *Crenis*) till the recent Pyrcz (1992) reference of the species to Terreiro Velho.

After Ackery *et al.* (1995) *S. amulia* is known from Sierra Leone to Cameroon, Gabon and Zaire but Larsen (2005) reports the nominate subspecies from West Africa to Nigeria, plus Cameroon, Congo, Gabon and Zaire, and considers that a second subspecies occurs in the southernmost countries. In ST&PR it flies in PR only.

Known host-plants are *Sapium* and *Maprounea* (Euphorbiaceae) and Pyrcz (1991a, sub *Sallya*) reports oviposition in PR on *Cola* sp. (Sterculiaceae).

Sevenia boisduvali insularis (Joicey & Talbot, 1926)

Fig. 77-79.

MATERIAL EXAMINED: **ST**: Macambará, 25-30/4/1994, coll. Rato Cabinda, leg. J. Bizarro, 6♂♂2♀♀ (CZ 4961), 5♂♂2♀♀ (AF NYM66013-66019). R. Nova Moka, 29/9/1954, MCST, 1♀ (CZ 2357). Not labelled, 1♂ (CIAT 747).

The subspecies was described by Joicey & Talbot (1926, sub *Crenis*), upon ST Barns material (details not reported). Sharpe (1893, as *Crenis natalensis*) assigns the species (again no details) from ST. The Nova Moka re-examined only ♀ was the one identified by Bacelar (1958a, as *Crenis trimeni*). Viejo (1984, sub *Sallya*, as species) assigns the island and Pyrcz (1992, sub *Sallya*) reports material from Bombaim, also in the high mountainous inner ST, from where the subspecies is endemic.

Host-plants remain undetermined but most of *Sevenia* caterpillars feed on Euphorbiaceae. Nominate subspecies is, further, known by damages that imagos may cause to apple fruits by piercing and sucking the juice with their proboscis.

Subfamily **Limenetidinae** Behr, 1864

Pseudacraea lucretia gamae Joicey & Talbot, 1927

MATERIAL EXAMINED: None.

The subspecies was described (Joicey & Talbot, 1927, as species) from PR upon 3♂♂3♀♀ (localities and dates omissive, coll. Barns). Based in the original description, it is included by Viejo (1984, as species) among the taxa known from that island. Pyrcz (1992) assigns Terreiro Velho.

The subspecies is an endemic from PR though D'Abreira (2004) reports *P. l. gamae* to "São Tomé and Príncipe Isl.". After the ECOFAC (1995) it must be considered as with an indetermined status, meaning it is may be in danger, may be vulnerable or even rare, though not sufficiently known to be included in any of these categories.

Main host-plants, known to nominate subspecies, are *Malacantha*, *Mimusops*, *Chrysophyllum*, *Manilkara*, *Pachystela*, *Sideroxylon*, *Aningeria*, *Gambeya* and *Afrosersalisia* (Sapotaceae) but there are also references to *Lasiodiscus* (Rhamnaceae).

Neptis eltringhami Joicey & Talbot, 1926

MATERIAL EXAMINED: None.

The species was described from ST (Joicey & Talbot, 1926) upon 4♂♂7♀♀ (localities and collecting dates not reported, coll. Barns) and Viejo (1984) includes the species among those known in the island, based in the original description. Pyrcz (1992) assigns new material from the inner high localities of Bombaim and Água João.

N. eltringhami is endemic from ST.

Larva and larval food remains unknown.

Neptis larseni Wojtusiak & Pyrcz, 1997

Fig. 80-81.

MATERIAL EXAMINED: **PR**: Bombom, edge of forest, close to beach, 11/8/2005, LM, 1♀ (CZ 5246); 15/8/2005, 1♂ (CZ 5250); 15/8/2005, 1♀ (CZ 5251); 27/7-9/8/2006, 2♂♂1♀ (CZ 5273); 26/7-16/8/2010, 4♂♂3♀♀ (CZ 5788). Bombom to Airport, forest margin, 13/8/2005, LM, 1♀ (CZ 5248); 28/7-5/8/2006, 1♂ (CZ 5274); 26/7-16/8/2010, 3♂♂2♀♀ (CZ 5789). Id, 08.30-11.30 h, 1♂3♀♀ (CZ 5790). Several other specimens were seen in the wing (LM) between Bombom and Stª Rita during the 2010 dry season.

N. larseni was described from Terreiro Velho (Wojtusiak & Pyrcz, 1997), but it was previously suggested (Pyrcz, 1992) that PR specimens were smaller and slightly distinct from those from ST, all considered at that time under *N. eltringhami*; he pointed, furthermore, that Pierre informed him he suspected also that these butterflies should represent a non-described taxon as it was rectified in 1997.

The species is known from PR only where it seems to be relatively common at least during the "gravana" months; males and females are identical. It extends from the littoral low regions to the interior and more mountainous areas of the island.

Caterpillars and food-plants remain non-described.

Cymothoe caenis (Drury, 1773)

MATERIAL EXAMINED: None.

The species was assigned as present in the PR (no detailed location) based on one female obtained in this island by Collins and deposited in the ABRI collection (van Velzen *et al.*, 2009).

Cymothoe sp.

MATERIAL EXAMINED: None.

Pyrcz (1992) reports that Canu informed him about three specimens of an undetermined *Cymothoe* species of the "*sangaris*-group" collected in ST (no details); he assigns, further, that Canu

was «...unable to find them...». No more data are known on this species-group in the country.

Subfamily **Heliconiinae** Swainson, 1822

Acraea (Acraea) alcinoe racaji Pyrcz, 1991

MATERIAL EXAMINED: None.

The subspecies was described upon material from Terreiro Velho (Pyrcz, 1991c); Aurivillius (1910) assigned 1♀ of *A. alcinoe* (at species level) from R. Infante D. Henrique, certainly belonging here.

A. alcinoe racaji is an endemic from PR.

Caterpillars of the nominate subspecies occur on *Adenia* sp. (Passifloraceae).

Acraea (Acraea) egina egina (Cramer, 1775)

MATERIAL EXAMINED: **PR**: Not labelled, 5♂♂ (CIAT 9, 363).

Viejo (1984) assigns the species from PR (no details) based (he notes) in Bacelar (1948); however, this last author reports the species to the "Portuguese Guinea" (Guinea-Bissau), Dahomé (Benin) and Angola only, what means that its Mendes & Bivar-de-Sousa (2012) reference based in the CIAT listed males, corresponds to the first real information relative to *A. e. egina* presence in PR and in the country.

The species flies from Sierra Leona to Ethiopia and South Africa.

Known host-plants are *Rawsonia* (Flacourtiaceae) and *Adenia* (Passifloraceae).

Acraea (Acraea) medea (Cramer, 1775)

Fig. 82-84.

MATERIAL EXAMINED: **PR**: Airport, 19/10/1955, DP, 1♀ (CZ 2420); 2/11/1955, 2♀♀ (CZ 2405); 11/11/1955, 1♂1♀ (CZ 2419); 22/11/1955, 1♂ (CZ 2412); 26/11/1955, 1♀ (CZ 2414); 30/11/1955, 1♀ (CZ 2415). Bombom, on or near beach, 27/7-9/8/2006, LM, 1♀ (CZ 5273); 26/7-16/8/2010, 1♀ (CZ 5788). Bombom to Airport, forest margins, 13/8/2005, LM, 3♂♂ (CZ 5248); 15/8/2005, 1♂ (CZ 5250); 28/7-5/8/2006, 1♀ (CZ 5274); 26/7-19/8/2010, 5♂♂2♀♀ (CZ 5789). Id, 08.30 – 11.30 h, LM, 1♂1♀ (CZ 5790). Maria Correia, 26/5/1986, CP, 1♂1♀ (BS 18950-18951). R. Esperança, 7/11/1954, MCST, 3♀♀ (CZ 2302). R. S. Carlos do Fundão, 10/11/1954, MCST, 1♀ (CZ 2325). R. Sundry, 12/10/1954, MCST, 1♂1♀ (CZ 2384); 7/11/1954, 4♂♂5♀♀ (CZ 2326); 8/11/1954, 3♂♂ (CZ 2327); 2/8/1955, 5♂♂2♀♀ (CZ 2514); 3/9/1955, 2♂♂1♀ (CZ 2515). Stª António town, 7/11/1955, DP, 1♀ (CZ 2406). Not labelled, 1♂4♀♀ (CIAT 15, 263, 363).

Aurivillius (1910) reports 4♂♂2♀♀ from Baía Oeste and 12♂♂6♀♀ from R. Infante D. Henrique, and, later (Aurivillius *in* Seitz, 1928) he points PR without further detail. Bacelar (1948) questions her own identification of 1♀ from the very same island collected by Lima de Lemos (MB, disappeared in the 1978 MB fire or before) which correction was impossible to rectify. The 1954 and 1955 material registered by Bacelar (1958a), even if with a few errors (dates and registration numbers – rectified by comparison of the labels with the field books and the CZ collection registration book), corresponds to the re-examined CZ series. Pyrcz (1992) assigns material from Terreiro Velho and Stª António.

A. medea is endemic from PR where it seems abundant.

Acraea (Acraea) niobe Sharpe, 1893

Fig. 85-86.

MATERIAL EXAMINED: **PR**: Not labelled, 1♂ (CIAT 617). **ST**: Boavista to S. Nicolau, 15/6/1984, 4♂♂ (MBOC nn). R. Bombaim, 7/8/2005, LM, 2♂♂ (CZ 5243); 23-25/7/2006, 4♂♂2♀♀ (CZ 5268). Id, on blossomy coffee-trees, 20-23/8/2010, LM, 4♂♂1♀ (CZ 5791). Not labelled, 1♂ (CM nn); 2♂♂1♀ (CIAT 623, 748, 751).

The species was described (Sharpe, 1893) from ST and registered from the island by Aurivillius (*in* Seitz, 1928). Joicey & Talbot (1926) assign material collected by Barnes (without details). Bacelar

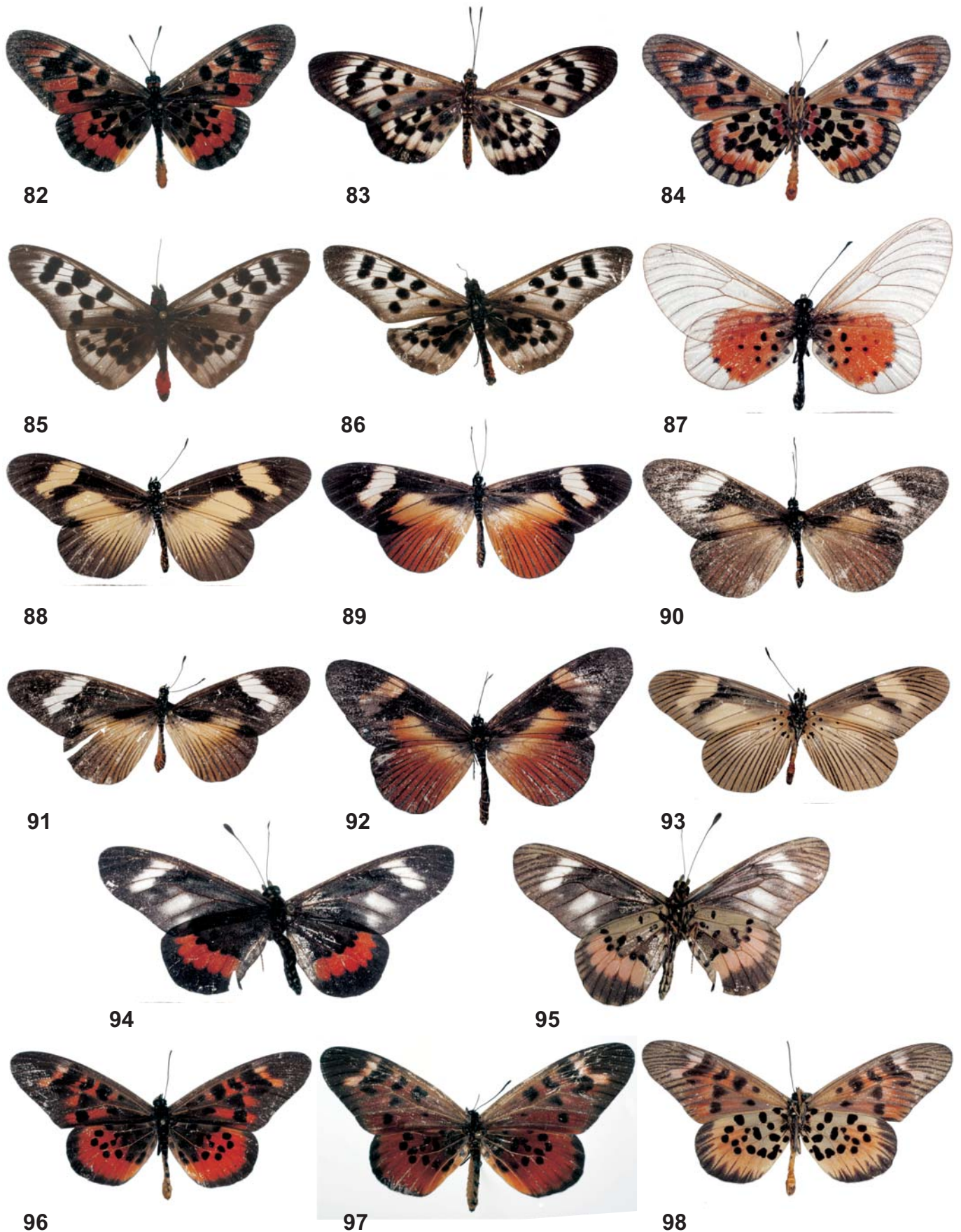


Fig. 82. *Acraea (Acraea) medea* male D. **Fig. 83.** *Acraea (Acraea) medea* female D. **Fig. 84.** *Acraea (Acraea) medea* female V. **Fig. 85.** *Acraea (Acraea) niobe* male D. **Fig. 86.** *Acraea (Acraea) niobe* female D. **Fig. 87.** *Acraea (Acraea) quirina* female D. **Fig. 88.** *Acraea (Actinote) j. jodutta* male D. **Fig. 89.** *Acraea (Actinote) j. jodutta* female D from ST: R. Bombaim (CZ-5791). **Fig. 90.** *Acraea (Actinote) j. jodutta* female D from PR: Bonbom to Airport (CZ-5789). **Fig. 91.** *Acraea (Actinote) j. jodutta* female D from PR: Bonbom to Airport (CZ-5274). **Fig. 92.** *Acraea (Actinote) j. jodutta* female D from PR: Bonbom to Airport (CZ-5789). **Fig. 93.** *Acraea (Actinote) j. jodutta* male V. **Fig. 94.** *Acraea (Actinote) newtoni* male D. **Fig. 95.** *Acraea (Actinote) newtoni* male V. **Fig. 96.** *Acraea (Actinote) pharsalus carmen* male D. **Fig. 97.** *Acraea (Actinote) pharsalus carmen* female D. **Fig. 98.** *Acraea (Actinote) pharsalus carmen* male V.

(1948) points, that the “type and cotypes” from Saudade (3♂♂) and S. Nicolau (1♂) dated from 1865, were collected by F. Newton – Sharpe’s type-series – and deposited in the MB; from this group, she selected specimen n° 13 from Saudade as the holotype; later, Fernandes (1958) reports in the MB the holotype only (Saudade, coll. F. Newton 1865), what suggests that this specimen was the unique “survivor” (assigned as in “regular” condition) in the MB twenty years before the 1978 fire. Bacelar (1958) reports two further specimens, both from the R. Amparo II, collected in 21/10/1954 (CZ-2335), impossible to trace, certainly lost. Viejo (1984) assigns the species from ST based in Joicey & Talbot (10926), Bacelar (1948) and D’Abrera (1980). Pyrcz (1992) reports Bombaim and Água João. Pierre *et al.* (2002) show in map its occurrence in the central ST, from 500 m up, and present complete data on the larval development.

A. niobe is almost certainly an endemic from ST and so, the male assigned as collected in PR and deposited in the CIAT will correspond to a wrongly printed label. The species is semi-transparent and there is no sexual dimorphism.

Known host-plant is *Adenia lobata* (Passifloraceae).

Acraea (Acraea) pseudEGINA Westwood, 1852

MATERIAL EXAMINED: None.

The species was reported from ST without details by Pyrcz (1992), based in BM material. Pierre *et al.* (2002) do not consider *A. pseudEGINA* as part of the ST fauna, and suggest that its citation to the island shall correspond to an erratic specimen or to an eventually incorrect labelling; as a matter of fact, no more material was seen from then on, and *A. pseudEGINA* almost certainly do not integrates the country’s fauna.

The species is known to fly from Senegal to western Kenya and Ethiopia.

Caterpillars occur on *Passiflora*, *Adenia* (Passifloraceae) and *Wormskioldia* (Turneraceae).

Acraea (Acraea) quirina quirina (Fabricius, 1781)

Fig. 87.

MATERIAL EXAMINED: **PR**: Airport, 22/11/1955, DP, 1♀ (CZ 2411). R. Sundry, 8/11/1954, MCST, 1♀ (CZ 2327).

Aurivillius (1910) assigns 1♂ from Água Izé, and 1♂ from Baía Oeste. Bacelar (1958a) reports both CZ re-examined specimens as well as one lost ♂ (MCST, CB, CZ 2515) from R. Sundry (dated as collected in the 8/11/1955, as a matter of fact from the 3/9/1955 – discrepancy between the field and registration books). Pinhey (1972) notes that this butterfly was the dominant representative in the Morro Peixe low forest but that it was quite rare elsewhere in ST while Pyrcz (1992) questions its presence in this island but assigns Stº António and Terreiro Velho (PR); he suggests, further, that Viejo (1984) reference to *A. monteironis* (see ahead) shall correspond to the present species. Pierre *et al.* (2002), who consider Pyrcz’s (1992) citation only, note: «...sauf s’il s’agit d’erreurs d’étiage, toujours possible...» and conclude that the species shall now be extinct in São Tomé. During our stays in ST (LM, 2004-2006 and 2010 dry season), none specimen was seen and no Morro Peixe forest remains could be traced; in the July-August 2010 all the area around the village was burned (destroyed forest?, not located site?, or “wrong” season?). The species is very typical, semitransparent and not sexually dimorphic being impossible to mistake with any other butterfly from ST&PR.

A. q. quirina flies from Senegal to Nigeria, Angola, Kenya and southern Sudan and was assigned in ST&PR from both islands.

The known host-plants are *Rinorea* (Violaceae) and *Drypetes* (Euphorbiaceae).

Acraea (Acraea) zetes annobona D’Abrera, 1980

MATERIAL EXAMINED: **PR**: Bombom to Airport, forest margins, 26/7-19/8/2010, LM, 3♂♂1♀ (CZ 5789). Id, 08.30-11.30 h, 1♀ (CZ 5790). Maria Correia, 26/5/1986, CP, 1♂1♀ (BS 18952-18953). R. Sundry, 7-8/11/2005, AS, 2♂♂1♀ (CZ 5262). **ST**: Boavista to S. Nicolau, 15/6/1984, 1♀ (MBOC nn). Guadalupe, 24/8/2010, LM,

1♂ (CZ 5792). Praia Melão, 16/7/1955, MCST, 1♀ (CZ 2510). R. Amparo II, 21/10/1954, MCST, 3♂♂ (CZ 2335). R. Bombaim, 23/7-5/8/2006, LM, 4♂♂2♀♀ (CZ 5268); 20-23/8/2010, 5♂♂3♀♀ (CZ 5791). R. Diogo Vaz, 5/5/1958, EEA, 1♀ (CZ 2991). R. Ponta Figo, 16/5/1958, EEA, 1♂ (CZ 3001). R. Ubabudo, 5/11/1954, MCST, 1♂ (CZ 2499). Stª Catarina, 21/6/1984, 2♂♂ (MBOC nn). São Tomé town, ?/5/1971, 3♂♂ (AF ACR11501-11503). Trindade, 9/12/1954, MCST, 1♂ (CZ 2502). No locality, 3/1881, leg. CM, 1♂ (BS 18973); id, 12/11/1984, coll. AS, 1♂ (BS 18974). Not labelled, 6♂♂1♀ (CIAT 9, 102, 111, 130, 414, 683).

The subspecies was described (D’Abrera, 1980) upon material from Annobon (= Pagalu) and ST. The species was also reported from the PR by Snellen (1873, as *A. menippe* and 1882, as *A. zetes*) and the material now studied from this island fairly agrees to that obtained in ST confirming previous samples as certainly belong to the present subspecies. Sharpe (1893) assigns ST (again no details), Aurivillius (1910, as *A. zetes jalema*) reports 1♀ from Água Izé and 2♂♂1♀ from Ribeira Palma, and Bacelar (1948) upon E. Sharpe’s identification and at species level – MB disappeared material, coll. F. Newton – registers 3♂♂ from Obó Vermelho and 1♂ from S. Nicolau. Bacelar (1958a) reports (again at species level) the re-examined material from 1954 and 1955 listed above though with a few inaccuracies relatives to the reported specimens sexes. Viejo (1984) integrates *A. zetes* in his ST list. Pyrcz (1992) reports Bombaim, Água João and Água Izé and Pierre *et al.* (2002) notes that *A. z. annobona* exists in the island from littoral to central mountainous area and study its larval development.

The subspecies was reported as exclusive from ST and Annobon (Equatorial Guinea) despite its occurrence also in PR from where the species was assigned as new for ST&PR (Snellen’s data); the Maria Correia and R. Sundry studied samples confirm its occurrence in PR and it seems common along the country.

Caterpillars are known to feed in ST on *Adenia lobata* (Passifloraceae).

Acraea (Actinote) alciope Hewitson, 1852

MATERIAL EXAMINED: **PR**: Not labelled, 1♂ (CIAT 364). **ST**: Not labelled, 1ex (CIAT 352).

The species was previously assigned from ST by Pierre (1983) and Pyrcz (1992) based in the BM material; it was reported again to ST and registered by the first time to PR by Mendes & Bivar-de-Sousa (2012) upon the two specimens reported above, though without details; so, its presence in the country, where it seems rare, is confirmed (despite Pierre *et al.*, 2002 pointed it shall concern a label error or an accidental capture); unfortunately, for none of the observed specimens the detailed collecting locality nor the precise date were available – though they were both collected, with no doubts, before the country independence (so, before the 1975).

A. alciope is known, further, from Gambia to Uganda.

Acraea (Actinote) esebria Hewitson, 1861

MATERIAL EXAMINED: None.

The species was reported from PR by Snellen (1873) upon one misidentification of, probably, *Acraea (Actinote) jodutta* (see ahead); indeed, *A. esebria* ranges (Ackery *et al.*, 1995, D’Abrera, 1997) along most of East Africa, former Zaire (Shaba), Zambia, Angola and South Africa (Natal) but certainly not attains Guinea Gulf area. Pyrcz (1992) states that he could not trace this species citation, and that it would come «...from an old Portuguese paper...» (wrong, as noted) and «...it certainly corresponds to a misidentification...» (right). See also note about *Acraea monteironis*.

Acraea (Actinote) insularis Sharpe, 1893

MATERIAL EXAMINED: **ST**: Not labelled, 1♂ (CIAT 623).

A. insularis was described by Sharpe (1893) and its holotype ♀ and one incomplete specimen both collected by F. Newton in S. Nicolau, 800 m, were deposited, after Bacelar (1948), in the MB. Fernandes (1958) assigns the holotype only (so, the second specimen was already lost/destroyed at that time), considered to be in quite bad condition. Joicey & Talbot (1926, Barns material) and Aurivil-

lius (*in* Seitz, 1928) report the species to the island and Viejo (1984) includes *A. insularis* in his list of ST species without details. Pyrcz (1992) assigns a sample from Bombaim and Pierre *et al.* (2002) study 4♂♂6♀♀ from Macambará, 3 Km south from the Bom Sucesso and note that several males were observed in February, in the wing.

The species is endemic from ST where it shall be restricted to the inner mountainous area and, eventually, to the rainy season.

Acraea (Actinote) jodutta jodutta (Fabricius, 1793)

Fig. 88-93.

MATERIAL EXAMINED: **PR**: Airport, 24/10/1955, DP, 1♂ (CZ 2427); 27/10/1955, 1♀ (CZ 2428). Bombom, close to the beach, 27/7-9/8/2006, LM, 1♂ (CZ 5273); 26/7-16/8/2010, 5♂♂ (CZ 5788). Bombom to Airport, forest margins, 28/7-5/8/2006, LM, 4♂♂1♀ (CZ 5274); 26/7-16/8/2010, 23♂♂3♀♀ (CZ 5789). Id, 08.30-11.30 h, LM, 7♂♂1♀ (CZ 5790). Maria Correia, 26/5/1986, CP, 1♀ (BS 18955). R. Sundry, MCST, CB, 2/8/1955, 1♀ (CZ 2514); 3/9/1955, 1♂ (CZ 2515); 7-8/11/2005, AS, 1♂ (CZ 5262). Not labelled, 1♂2♀♀ (CIAT 353, 355). **ST**: Bindá, 11/8/2004, forest margins, LM, 1♂ (CZ 5219). Porto Alegre, 28/6/1984, 1♂ (MBOC nn). R. Bombaim, 13/8/2004, garden and forest margin, LM, 1♀ (CZ 5221); 23-25/7/2006, 2♂♂3♀♀ (CZ 5268); 20-23/8/2010, 3♂♂2♀♀ (CZ 5791). Stª Catarina, 21/6/1984, 1♂ (MBOC nn). Not labelled, 2♂♂1ex. without abdomen (CIAT 14, 352-353). Many other specimens were seen in the wing (LM) in Bombom and along the road to Airport (PR) and in R. Bombaim (ST) during the 2010 dry season.

As previously considered, we believe that the first real reference of this species from the country will correspond to the Snellen (1873) PR citation of *A. esebria*. Aurivillius (1910) assigns 10♂♂1♀ from R. Infante D. Henrique. Bacelar (1958a) reports the 1955 re-examined samples (one error concerning the sex of one of the Sundry specimens). Pyrcz (1992) assigns Stª António, Terreiro Velho, Bombaim and Água João and notes that opposite to what happens with ST material, PR females show a strong polymorphism, what could be confirmed now by the study of the abundant specimens collected in both islands. Pierre *et al.* (2002) register that in ST the specimens are smaller than those from continental Africa and that in PR this dissimilarity is even more conspicuous, what was also verified. The only reference of *A. monteironis* to the country (see ahead) shall concern a misidentification of the present species.

A. j. jodutta flies from Senegal to Uganda, Kenya and Angola, and in ST&PR it is known from both islands.

Host-plants are *Urera*, *Fleurya*, *Boehmeria* and *Pouzolzia* (Urticaceae) and caterpillars in São Tomé are known to feed (Pierre *et al.*, 2002) on *Urera cf. trinervis*.

Acraea (Actinote) lycoa media Eltringham, 1911

MATERIAL EXAMINED: **PR**: Airport, 27/10/1955, DP, 1♀ (CZ 2428); 30/11/1955, 2♂♂2♀♀ (CZ 2415); 31/10/1955, 1♀ (CZ 2418). Bombom to Airport, forest margins, 28/7-5/8/2006, LM, 6♀♀ (CZ 5274); 26/7-19/8/2010, 2♂♂2♀♀ (CZ 5789). Id, 08.30-11.30 h, LM, 2♂♂ (CZ 5790). Maria Correia, 26/5/1986, CP, 1♀ (BS 18954). R. Esperança, 6/11/1954, MCST, 1♀ (CZ 2305). R. Sundry, 12/10/1954, MCST, 2♂♂ (CZ 2384); 8/11/1954, 1♂1♀ (CZ 2327); 12/11/1954, 1♂1♀ (CZ 2299); 17/11/1954, 6♂♂2♀♀ (CZ 2326); 2/8/1955, 1♂ (CZ 2514); 3/9/1955, 1♂ (CZ 2515); 7-8/11/2005, AS, 1♂2♀♀ (CZ 5262). Terreiro Velho, forest margin, rain, 1/8/2006, LM, 1♂1♀ (CZ 5275) No locality, 1969, RN, 1♂ (CZ 4919) 1♀ (CZ 4918). Not labelled, 1♀ (CIAT 5).

Aurivillius (1910) assigns the species from PR upon 2♀♀ (Stª António and Baía Oeste). Most of the re-examined individuals include Bacelar (1958a), though more insects were found in collection (and so, listed above) and the specimens sexes were not always correctly determined. Pyrcz (1992) reports *A. l. mediafra* (synonym) from Terreiro Velho and comments the species occurrence in ST – he supports that it was reported from that island in «...an old Portuguese paper...» whose author he was «...unable to identify...», though none Portuguese paper registers the species there; indeed, we

couldn't trace any reference to *A. lycoa* from this island in literature and we believe that in ST&PR the species will fly in PR only.

A. lycoa media is known from Bioko to Angola, Cameroon and western Uganda.

Known host-plants are *Aneleima* (Commelinaceae), *Fleurya*, *Pouzolzia* (Urticaceae) and also cacao (*Theobroma cacao*, Sterculiaceae).

Acraea (Actinote) newtoni Sharpe, 1893

Fig. 94-95.

MATERIAL EXAMINED: **ST**: R. Bombaim, on blooming coffee-tree, 20-23/8/2010, LM, 7♂♂1♀ (CZ 5791). No locality, 3/1881 1♂ (CM, nn).

The species was described from R. S. Nicolau upon one specimen assigned by Sharpe (1893) as being 1♀; Bacelar (1948) reports, however, 1♂ holotype (MB) with the number 15 of E. Sharpe (coll. F. Newton, 1865, Saudade) and Fernandes (1958) registers that the holotype (the same specimen, though he neglects the sex) existed at that time in the MB and was in good condition; it disappeared in the 1978 fire or in the meantime but we had never the chance to see it. The species was registered again from ST by Joicey & Talbot (1926, Barns' material) without details and Viejo (1984) based in this citation, includes *A. newtoni* in his ST rhopaloceran list. Pyrcz (1992) refers material from Bombaim and Pierre *et al.* (2002) point 2♀♀ from Bombaim and R. Chamiço, and mentions that Collins collected *A. newtoni* in Macambará.

The species, with similar sexes, is endemic from ST.

Acraea (Actinote) pentapolis pentapolis Ward, 1871

MATERIAL EXAMINED: None.

Pierre (1983) assigns *Acraea (Actinote) pentapolis pentapolis f. thelestis* Oberthür, 1893 from ST (without details) based in material deposited in the BM; Pyrcz (1992) reports this citation and Pierre & Bernaud (1999) who showed that *A. pentapolis* must be seen as a superspecies, represent in a map its occurrence in ST. Latter, they consider however (Pierre *et al.*, 2002) that the species reference to that island shall represent a recent accidental colonization or it will correspond to a wrongly labelled specimen and as a matter of fact, no more specimens were ever reported in the country from 1983 on.

The subspecies is known (Ackery *et al.*, 1995, D'Abbrera, 1997) from Sierra Leone to Zaire, Uganda and Kenya and it almost certainly doesn't integrate ST&PR fauna.

Host-plants are *Myrianthus*, *Musanga* (Moraceae) and *Boehmeria* (Urticaceae).

Acraea (Actinote) pharsalus carmen Pyrcz, 1991

Fig. 96-98.

MATERIAL EXAMINED: **PR**: Airport, 19/10/1955, DP, 1♂ (CZ 2420); 24/10/1955, 1♂ (CZ 2427); 31/10/1955, 1♀ (CZ 2418); 30/11/1955, 1♀ (CZ 2415). Bombom, close to beach, forest margin, 2/8/2004, LM, 1♂1♀ (CZ 5213). Bombom to Airport, forest margins, 4/8/2004, LM, 1♂2♀♀ (CZ 5216); 28/7-5/8/2006, 3♂♂5♀♀ (CZ 5274); 26/7-19/8/2010, 3♂♂1♀ (CZ 5789). Id, 08.30-11.30 h, LM, 1♀ (CZ 5790). Maria Correia, 26/5/1986, CP, 1♂ (BS 18956). Porto Real, forest margin, 3/8/2004, LM, 4♂♂ (CZ 5214). R. Esperança, 19/9/1954, MCST, 1♂ (CZ 2300); 8/11/1954, 1♂ (CZ 2306). R. Sundry, 12/11/1954, MCST, 1♂ (CZ 2299); 17/11/1954, 2♂♂2♀♀ (CZ 2326). Not labelled, 1♂ (CIAT 364).

Aurivillius (1910) reports 1♀ from the Baía Oeste and Bacelar (1958a) assigns the 1954 and 1955 re-examined material – both as *A. pharsalus*. Pyrcz (1991b, 1992) describes the subspecies upon material from the Terreiro Velho being *A. pharsalus carmen* endemic from PR.

Caterpillars of the nominal subspecies, quite dispersed along Africa, are known on *Ficus* (Moraceae), *Boehmeria*, *Fleurya* (Urticaceae), *Tectona* (Verbenaceae) and cacao (*Theobroma cacao*, Sterculiaceae).

Acraea (Actinote) serena (Fabricius, 1775)

MATERIAL EXAMINED: None.

The species was reported by Snellen (1873, as *A. manjaca* – if Ackery *et al.*, 1995 synonymical note is correct) from PR and Le Doux (1928, as *A. eponina* f. *latifasciata*) assigns its presence in the same island (both without details); Pyrcz (1992, as *A. eponina*) points the species to ST&PR «...based in a Portuguese paper...whose author I could not identify...» (such paper doesn't exist at all). Pierre *et al.* (2002) considers nevertheless, that the species citation to the country shall correspond to accidentally collect or incorrectly labelled material being Pyrcz (1992) its only reference. Anyway, even if the ancient identifications should correspond really to *A. serena*, the species is not seen in the country from ca. one century and so, we strongly doubt about its recent presence in ST&PR.

A. serena is widely dispersed in the Afrotropical and Madagascan Regions.

Acraea (Actinote) vesperalis Grosse-Smith, 1890

MATERIAL EXAMINED: None.

Pierre (1983, 1992), based in material deposited in the BM, assigns the species from ST. Pierre *et al.* (2002) suggest, however, that this may correspond to incorrectly labelled material or to a not stabilized population and, as a matter of fact, no specimens were observed in the country from then on.

A. vesperalis is present after Ackery *et al.* (1995) from Sierra Leone to eastern Zaire; D'Abbrera (1997) reports Nigeria to eastern Zaire only, and suggests that the Sierra Leone ssp. *catori* shall represent a valid species.

Acraea monteironis Butler, 1874

MATERIAL EXAMINED: None.

Bacelar (1948) reported this species from ST (no precise location, no dates) upon 1♂ collected by F. Newton and burned in the MB' 1978 fire, or disappeared before that, which determination could not be rectified. Described from Angola, *A. monteironis* is today considered (Ackery *et al.*, 1995) in the synonymy of *A. esebria*. Though impossible to rectify, we presume that Bacelar' reference will concern a misidentification and, taking into account the similarities between species, it may correspond to one *A. jodutta* sample which, as previously registered, is part of the country's fauna. Viejo (1984), without comments, considers *A. monteironis* in his ST species list and Pyrcz (2005) supports it will correspond to *A. quirina*, as we previously stated what we believe quite improbable as *A. quirina* is a very characteristic species.

Phalanta eurytis eurytis (Doubleday, 1847)

MATERIAL EXAMINED: None.

The species was reported by Pyrcz (1992) from Stº António, Terreiro Velho (PR), Bombaim and Água João (ST).

Phalanta eurytis s.s. distributes throughout most of the southern, central and western Africa, Madagascar and Comoro – a distinct subspecies occurs in Ethiopia. It flies in ST&PR in both islands.

Caterpillars feed on *Oncoba*, *Homalius*, *Dovyalis*, *Scolopia*, *Trimeria* (Flacourtiaceae), *Canthium*, *Ixora* (Rubiaceae) and *Populus* (Salicaceae), but they can be found on *Theobroma cacao* (Sterculiaceae) also.

Final considerations

At present, 116 species and subspecies names of butterflies (Lepidoptera: Hesperioidea and Papilionoidea) are known to have been assigned from ST and PR as listed before. Two of the reported species, *Mylothris poppea* and *M. sulphurea* are certainly not present in the country, as justified: as a matter of fact, their only references are based in erroneous interpretation of previous knowledge of ST&PR lepidopteran fauna. The same must be stated relatively to *Hypomyrina fourieri*,

assigned only once (undoubtedly by mistake) from ST; one other name, *Acraea monteironis*, is not valid and it was considered to fall eventually in the *Acraea (Actinote) esebria* synonymy and, due to its known geographic distribution this species definitely not occurs in the country. This implies that the total number of butterfly species/subspecies in ST&PR will be, at the most, 111 and not 116, as the previously presented list of taxa seems to point (Table II).

These 111 names include 9 HesperIIDae, 8 Papilionidae, 22 Pieridae, 23 Lycaenidae and 54 Nymphalidae (1 Libytheinae, 1 Danainae, 7 Satyrinae, 8 Charaxinae, 10 Nymphalinae, 1 Cyrestinae, 2 Biblidinae, 5 Limenitidinae and 19 Heliconiinae) previously assigned to one or to both islands that is, that were registered in ST, in PR or in the country. Among them, 44 names (40.7 %) were assigned from ST only, 26 (23.4 %) were pointed exclusively to PR, and the remaining 41 (36.9 %) were reported to both islands (or their presence in the country is not detailed at the islands level). 29 (26.1 %) are endemic from the country, being 17 known exclusively from ST (15.3 %), 9 from PR (8.1 %) and 3 from ST+PR (2.7 %). Besides, *Papilio dardanus sulfurea* (if actually living in PR) and *Bicyclus dorothea concolor* (if really flying in ST) are considered to be exclusives from ST&PR and Bioko, while *Acraea zetes annobona* occurs with no doubts in both, PR and ST, but also in Pagalu. The validity and the real existence of *C. defulvata* in ST, from where it is known exclusively by its holotype obtained almost one century ago, remains unclear – see comments. Assuming that there are really 111 butterflies species flying in ST&PR, the 29 species not known outside the archipelago correspond to a global endemism rate of ca. 26 %, which will attain almost 29 % if the taxa which range extends to Bioko or to Pagalu (*P. dardanus sulfurea*, *B. dorothea concolor* and *Acraea zetes annobona*) will be considered – so if a total of 33 endemics will be accepted.

However, if we consider that some of the species+subspecies registered from the country were assigned only once and/or that they were not found (neither collected, nor seen) at least during the last seven decades (often one century or more), that they cannot be understood as established populations (one only or very few known specimens), or that their references may concern taxa extinctions, misidentifications, wrongly labelled material or accidental, erratic specimens, then the total number of rhopaloceran taxa really inhabiting the country will be substantially reduced. These dubious cases concern 34 taxa and are assigned in Table II.

If this set of 34 taxa is excluded, no more than 77 species+subspecies of rhopaloceran butterflies will be, so, actually established in ST&PR; among them, 18 (23.4 %) are known only from ST, 21 from PR (27.3 %) and 38 (49.3 %) from both islands, what means that the real number of rhopaloceran species known for each one of the main islands shall be almost the same, being indeed, PR rhopaloceran fauna more diverse than that of ST and not the opposite: the percentage of species known from ST clearly dropped, while the correspondent value for those from PR strongly increased, as it happens with the number of species known to fly in both islands.

This means further, that the global endemism rate (despite the justified exclusion of *Andronymus neander thomasius*, *Papilio dardanus sulfurea* and *Charaxes defulvata*) will attain 36.4 % (28 species in a total of 77) clearly higher than

Table II – Presence/absence of each one of the species names ascribed to the ST&PR butterflies relatively to the country and to each one of the main islands (CIAT material included). END: Endemic; N: New to the island; **Note**: 1: Species not seen at least during the last seven decades, eventually extinct; 2: Certainly dubious or erroneous identification; 3: Probably erratic specimens, with not well accomplished colonization, or wrongly labelled material. **CerN**: Certainly not in ST&PR. **StS**: Studied samples. E: Endangered; EX: Extinct; I: Indetermined status; **V**: Vulnerable.

Family and species/subspecies	Not	CerN	StS	ST	PR
HESPERIIDAE					
<i>Coeliades bocagei</i> V			x	END	END
<i>Coeliades forestan</i>			x	x	x
<i>Coeliades hanno</i>	1, 3			x	
<i>Tagiades flesus</i>			x	x	x
<i>Andronymus neander thomasi</i>	1			END	END
<i>Borbo b. borbonica</i>			x	N	x
<i>Borbo perobscura</i>	1			x	
<i>Borbo f. fatuellus</i> (= <i>B. f. thomea</i>)			x	x	x
<i>Gegenes niso brevicornis</i>			x	x	N
PAPILIONIDAE					
<i>Papilio nerminae</i>			x	END	
<i>Papilio dardanus sulfurea</i>	1, 3				x
<i>Papilio d. demodocus</i>			x	x	x
<i>Graphium angolanus baronis</i>	3			x	
<i>Graphium latreillianus theorini</i>	3			x	
<i>Graphium leonidas santamarthae</i> E					END
<i>Graphium leonidas thomasius</i> E			x	END	
<i>Graphium ridleyanus</i>	3			x	
PIERIDAE					
<i>Catopsilia florella</i>			x	x	x
<i>Eurema b. brigitta</i>			x	N	N
<i>Eurema hecabe solifera</i>			x		x
<i>Eurema floricola leonis</i>			x		N
<i>Eurema senegalensis</i>			x	x	x
<i>Colotis doubledayi</i>	3			x	
<i>Belenois c. creona</i>	3		x	N	
<i>Dixeia piscicollis</i>			x	END	
<i>Appias epaphia aequariorialis</i>			x	END	
<i>Appias epaphia piresi</i>			x		END
<i>Appias p. phaola</i>	1, 2			x	
<i>Leptosia alcesta</i>	1, 3		x		x
<i>Leptosia medusa</i>	1, 2			x	
<i>Leptosai n. nupta</i>			x	x	x
<i>Mylothris asphodelus</i>	1, 2			x	
<i>Mylothris bernice</i>	1, 2			x	
<i>Mylothris n. nubila</i>	2			x	
<i>Mylothris poppea</i>		x			
<i>Mylothris rezbina</i>			x	x	x
<i>Mylothris rhodope</i>	2, 3			x	
<i>M. s. spica</i>	2, 3			x	
<i>Mylothris sulphurea</i>		x			
LYCAENIDAE					
<i>Liptena evanescens xanthis</i>	1, 3			x	
<i>Spalgis l. lemolea</i>			x		x
<i>Iolais (Epamera) bellina maris</i> EX?				END	
<i>Hypomyrina formieri</i>		x			
<i>Deudorix (Virachola) a. anthalus</i>			x	x	N
<i>Deudorix (Virachola) caliginosa</i>	3			?	?
<i>Deudorix (Virachola) odana chalybeata</i>			x	END	END
<i>Deudorix (Virachola) l. lorisona</i>			x	?	x
<i>Rubropelates a. aruma</i>	1			x	
<i>Anthene lunulata</i>	2			x	
<i>Anthene princeps</i>				x	x
<i>Lampides boeticus</i>			x		x
<i>Cacyreus lingeus</i>			x	x	x
<i>Leptotes p. pirithous</i>			x	x	x
<i>Leptotes pulchra</i>	2			x	
<i>Leptotes pyrczi</i>					END
<i>Leptotes sanctithomae</i> (= <i>L. terrenus</i>)				END	
<i>Zizeeria knysna</i>			x	x	x
<i>Zizina antanossa</i>			x		
<i>Azanius mirza</i>				x	
<i>Eicochrysops hippocrates</i>			x	x	x
<i>Euchrysops malathana</i>			x	x	x
<i>Euchrysops cf. osiris</i>			x		x
NYMPHALIDAE					
<i>Libythea l. labdaca</i>				x	x
<i>Danaus c. chrysippus</i>			x	x	x

Family and species/subspecies	Not	CerN	StS	ST	PR
<i>Melanitis leda</i>			x	x	x
<i>Bicyclus dorothea concolor</i>	1, 3			x	
<i>Bicyclus funebris</i>	3			?	?
<i>Bicyclus italicus</i>	3			?	?
<i>Bicyclus medontias</i>	3			x	
<i>Bicyclus s. sanaos</i>	3			x	
<i>Bicyclus vulgaris</i>			x		x
<i>Charaxes antiquus</i>				END	
<i>Charaxes barnsi</i>			x		END
<i>Charaxes c. candiope</i>				x	x
<i>Charaxes defulvata</i> EX?	1, 3?			END?	
<i>Charaxes lemsi</i>			x		END
<i>Charaxes monteiri</i>			x	END	
<i>Charaxes odysseus</i>			x	END	
<i>Charaxes thomasius</i>			x	END	
<i>Vanessa cardui</i>			x	x	N
<i>Precis pelarga</i>			x	x	x
<i>Precis s. sinuta</i>			x	x	
<i>Hypolimnas a. anthedon</i>			x	x	x
<i>Hypolimnas misippus</i>			x	x	x
<i>Hypolimnas salmactis thomensis</i>			x	END	
<i>Hypolimnas salmactis ssp.</i>	?				x
<i>Junonia cymodoce lugens</i>			x		x
<i>Junonia o. oenone</i>			x	x	x
<i>Junonia t. terea</i>			x		x
<i>Cyrestis c. camillus</i>			x		x
<i>Sevenia a. amulla</i>			x		x
<i>Sevenia boisduvali insularis</i>			x	END	
<i>Pseudacraea lucretia gamae</i> I			x		END
<i>Neptis eltringhami</i>				END	
<i>Neptis larseni</i>			x		END
<i>Cymothoe caenis</i>					x
<i>Cymothoes gr. sangaris</i>	?			x	
<i>Acraea (A.) alcinoe racaji</i>					END
<i>Acraea (A.) e. egina</i>			x		N
<i>Acraea (A.) medea</i>			x		END
<i>Acraea (A.) niobe</i>			x	END	
<i>Acraea (A.) pseudogina</i>	3			x	
<i>Acraea (A.) quirina</i>			x	x	x
<i>Acraea (A.) zetes annobona</i>			x	x	x
<i>Acraea (Actinote) alciope</i>			x	x	N
<i>Acraea (Actinote) esebria</i>		x			
<i>Acraea (Actinote) insularis</i>			x	END	
<i>Acraea (Actinote) j. jodutta</i>			x	x	x
<i>Acraea (Actinote) lycoa media</i>			x		x
<i>Acraea (Actinote) newtoni</i>			x	END	
<i>Acraea (Actinote) p. pentapolis</i>	3			x	
<i>Acraea (Actinote) pharsalus carmen</i>			x		END
<i>Acraea (Actinote) serena</i>	1, 2			?	x
<i>Acraea (Actinote) vesperalis</i>	3			x	
<i>Acraea monteironis</i>		x			
<i>Phalanta e. eurytis</i>				x	x

the value obtained when all the 111 species/subspecies previously assigned from the country were considered (endemism rate lower than 30 %). The 16 endemic taxa assigned from ST will correspond, then, to 20.8 % of the total number of species known in the country (77), the 10 endemics from PR to 13.0 % and the 2 known to occur on both islands will represent 2.6 % of the species known in ST&PR.

After Pycrz (1992) and the World Wildlife Found (2001) 13 endemic taxa were known from ST and 9 from PR, what means that the recent better knowledge of these two islands fauna strongly increased the supposedly endemic taxa knowledge and, consequently, the endemism estimated rate

for the group, but the Hesperidae were not included in those analysis.

The ECOFAC (1995) considers that the endemism rate to the “borboletas” was 38.3 % in ST and 21.4 % in PR, though based in non-actualized data (18 endemics in 47 species+subspecies in ST, 9 in 42 in PR); however, these numbers known for each one of the islands, include, due to the presented values, the number of shared species, which are not considered independently – the shared endemics are counted twice.

The obtained data and the values concerning the endemism rates in the country and in each island, ST and PR, clearly reinforce the importance of the preserved biotopes in the country but point also to the need of new field work. The performed studies rise some problems that must be solved only if observations/collecting will be held along the year, particularly during the rainy season or in the small dry season (the “gravanito”) and in both islands what will allow to understand if some species previously registered in ST&PR are really there and to ascertain about the recent objective presence in ST and/or in PR of species that were previously considered as endemics (or almost endemics) and that remained impossible to locate from several decades (or of those that are eventually quite rare or even extinct), e.g. *Andronymus neander thomasius*, *Papilio dardanus sulfurea*, both *Graphium leonidas* subspecies, *Bicyclus dorothea concolor* and the enigmatic *Charaxes defulvatus*. The same must be stated relatively to the definitive identification of the *Hypolimnas salmactis* ssp. and of the *Cymothoe* sp. of the *sangaris* group, both assigned from ST, and to the actual status of *Acraea quirina* in the country.

These results point to a better knowledge of PR in the last years and to the influence of the better preserved PR forerster in the insect diversity, as the humn impact seems much lower in this island. On the other hand, it points also to the need to reinforce the knowledge about the ST butterflies fauna, mainly in the inner mountainous areas and along the narrow savanna belt along the northern and northwestern ST marginal areas. Otherwise, the rarity of the endemics shared by the two islands strongly advise the carefull study of samples obtained in ST and PR to rectify their real conspecificity; this will be especially interesting in the case of *Coeliades bocagei* with slightly different populations in the two islands.

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