

Butterflies (Lepidoptera: Papilionoidea and Hesperioidea) from Serra da Jibóia, Bahia State, Brazil

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Abstract. A list of species of butterflies from Serra da Jibóia, a mountainous massif in the Recôncavo of Bahia State, is presented based on specimens deposited in the entomological collection Prof. Johann Becker of Museu de Zoologia da Universidade Estadual de Feira de Santana (MZUEFS), results that should contribute with the increment of biodiversity knowledge of the butterfly fauna of the State. The list includes 140 species, 86 of which are new records to Bahia and a new species of genus of *Perophtalma* Westwood (Riodinidae). Nymphalidae was the richest family with 60 species. Most of the species listed in the present work has a widely geographic distribution in Brazil and occur in open areas.

Keywords: Atlantic Rainforest; Checklist; Lepidoptera; Recôncavo of Bahia State.

Borboletas (Lepidoptera: Papilionoidea e Hesperioidea) da Serra da Jibóia, Bahia, Brasil

Resumo. Uma lista das espécies de borboletas da Serra da Jibóia, um maciço montanhoso no Recôncavo baiano, é apresentada com base no exame da coleção entomológica Prof. Johann Becker do Museu de Zoologia da Universidade Estadual de Feira de Santana (MZUEFS), visando contribuir para o conhecimento da fauna de borboletas do estado da Bahia. A lista inclui 140 espécies, das quais 86 espécies são novos registros para o estado da Bahia e uma nova espécie do gênero de *Perophtalma* Westwood (Riodinidae). Nymphalidae foi a família de maior riqueza com 60 espécies. A maioria das espécies listadas possui ampla distribuição geográfica no Brasil e ocorre em áreas abertas.

Palavras-chave: Lepidoptera; lista de espécies; Mata Atlântica; Recôncavo baiano.

Lepidoptera is a megadiverse insects order with forty-seven superfamilies and more than 160,000 species described throughout the world (KRISTENSEN *et al.* 2007). According LAMAS (2004) and WAHLBERG *et al.* (2005), the butterflies are classified in two superfamilies (Papilionoidea and Hesperioidea) and six families (Papilionidae, Pieridae, Nymphalidae, Lycaenidae, Riodinidae and Hesperidae). There are approximately 7,784 butterfly species known from the Neotropical region (LAMAS 2004), and 3,268 of them have been recorded in Brazil (BROWN & FREITAS 1999).

There are few lists of species to lepidopteran fauna in the Northeastern of Brazil, a geopolitical region that is poor inventoried to this order (CARNEIRO *et al.* 2008). Lists of species are considered to be of importance for biodiversity and conservation. The first list of butterflies in Northeastern Brazil was prepared by BATES (1867) based on species of Maranhão State, deposited in the private collection of Thomas Belt. More than one hundred years after, other works have been published to Maranhão (GARCIA *et al.* 1990), Ceará State (ROCHA 1908, 1936, 1954; SILVA 1967), Paraíba State, Rio Grande do Norte State and Pernambuco State (CARVALHO & FREITAS 1939; CARVALHO & CARVALHO 1941; CARVALHO & FREITAS 1960; D'ALMEIDA 1935; KESSELRING & EBERT 1979; NOBRE *et al.* 2008) and Alagoas State (CARDOSO 1949)

In the Bahia State, one of the nine states of the Northeastern region, are known only two inventories of butterflies, one of them from Ilha de Itaparica (MAY 1924) and the other one in the Metropolitan Park of Pituacu, Salvador (VASCONCELOS *et al.* 2009). Furthermore, ZACCA (2009) presents a list of butterflies deposited on entomological collection Prof. Johann Becker of Museu de Zoologia da Universidade Estadual

de Feira de Santana from the semiarid region from Bahia.

The objective of this work was to prepare a list of species of Serra da Jibóia based on exemplars deposited Entomological Collection Prof. Johann Becker of Museu de Zoologia da Universidade Estadual de Feira de Santana (MZUEFS), to contribute to the knowledge of the butterflies fauna from Bahia.

Serra da Jibóia is a complex of low hills at altitudes between 600 and 840 m covering about 22.000 ha in six municipalities, Santa Terezinha, Castro Alves, Elísio Medrado, Varzedo, São Miguel das Matas e Laje Bahia (NEVES 2005). These low mountains mark the northern limit of the coastal mountains of southern Bahia (SOBRINHO & QUEIROZ 2005), running in a north-south direction and is covered by different vegetational types, with montane Atlantic forest as predominant vegetation, however, in northern areas the vegetation presents a transition between Semideciduous forests and Caatinga vegetation (FREITAS & MORAES 2009)

The average annual temperature of Serra da Jibóia is 21°C, with approximately 1,200 mm/year of total rainfall (varying according to the altitude and geographical exposure). Rainfall is generally concentrated between the months of April and July (NEVES 2005).

The species were identified based in specialized bibliographies (D'ABRERA 1981, 1984, 1987a,b, 1988, 1994, 1995; BROWN JR. 1992; UEHARA-PRADO *et al.* 2004), as well by consulting specialists (see acknowledgments). Nomenclature was updated according to LAMAS (2004). Inventories and species lists of the butterflies (LAMAS 2004; MAY 1924; VASCONCELOS *et al.* 2009; ZACCA 2009) were consulted to define new occurrences for Bahia.

Were examined 557 specimens and identified 140

species (Table 1). Nymphalidae was the richest family with 60 species (42%), followed by Hesperidae 39 (28%), Lycaenidae 14 (10%), Pieridae 12 (9%), Riodinidae 12 (9%), and Papilionidae 3 (2%). Most species are common in open areas of the Atlantic Rainforest and have wide geographical distributions in Brazil.

Eighty six new species records of butterflies were recorded from Bahia (marked with asterisks Table 1). It is important to note the skipper *Ouleus fridericus candangus* Mielke, 1968, considered endemic of Cerrado vegetation, with occurrences in Goiás State and the Federal District (MIELKE *et al.* 2008), was recorded in Serra da Jibóia and, thus, the distribution of this subspecies was increased to northeastern Brazil and to the Atlantic Rainforest of Bahia.

Another important record was the discovery of a new species of *Perophtalma* Westwood, 1951 (Riodinidae). This genus is only known from Mexico to the Brazilian Amazon (Pará State) (SAVELA 2009) and from Cerrado vegetation in the Brazilian State of Minas Gerais (MOTTA 2002). The record of a new species of *Perophtalma* increased the range of distribution of this genus to northeastern Brazil. This species is currently being described. The discovery of a new species and the large number of new records as presented here is due to the fact that the fauna of butterflies from Bahia has been poorly sampled, therefore there is few works that makes reports for this state.

Table 1. List of species of butterflies from Serra da Jibóia deposited in the entomological collection Prof. Johann Becker of Museu de Zoologia da Universidade Estadual de Feira de Santana (MZUEFS). * **new occurrences to Bahia.**

Taxon	Taxon
PAPILIONIDAE (3)	<i>Theritas triquetra</i> (Hewitson, 1865)*
Papilioninae	RIODINIDAE (12)
Troidini	Euselasiinae
<i>Battus p. polydamas</i> (Linnaeus, 1758)	Euselasiini
Papilionini	<i>Euselasia m. melaphaea</i> (Hübner, 1823)*
<i>Heraclides androgeus laodocus</i> (Fabricius, 1793)*	<i>Euselasia</i> sp.
<i>Heraclides thoas brasiliensis</i> (Rotschild & Jordan, 1906)	Riodininae
PIERIDAE (12)	Eurybiini
Coliadinae	<i>Eurybia h. halimede</i> (Hübner, [1807])*
<i>Anteos clorinde</i> (Godart, [1824])	Helicopini
<i>Eurema a. albula</i> (Cramer, 1775)	<i>Sarota chrysus</i> (Stoll, 1781)*
<i>Eurema elathea flavescens</i> (Chavannes, 1850)	Mesosemiini
<i>Eurema phiale paula</i> (Röber, 1909)*	Mesosemiina
<i>Leucidia elvina</i> (Godart, 1819)*	<i>Leucochimona icare matatha</i> (Hewitson, 1873)*
<i>Phoebis a. argante</i> (Fabricius, 1775)	<i>Perophtalma</i> sp.
<i>Phoebis p. philea</i> (Linnaeus, 1763)	<i>Voltinia phryxe</i> (C. Felder & R. Felder, 1865)*
<i>Phoebis sennae marcellina</i> (Cramer, 1777)	Nymphidiini
<i>Pyrisitia l. leuce</i> (Boisduval, 1836)	<i>Juditha molpe</i> (Hübner, [1808])*
<i>Pyrisitia nise tenella</i> (Boisduval, 1836)*	<i>Synargis</i> sp.
Pierinae	Riodinini
<i>Ascia monuste orseis</i> (Godart, 1819)	<i>Calydna venusta morio</i> Stichel, 1929*
<i>Glutophrissa d. drusilla</i> (Cramer, 1777)	<i>Echydna chaseba</i> (Hewitson, 1854)*
LYCAENIDAE (14)	<i>Panara jarbas</i> (Drury, 1782)*
Polyommatae	Symmachini
<i>Hemiargus hanno</i> (Stoll, 1790)	<i>Pirasca sagaris satnius</i> (Dalman, 1823)*
<i>Leptotes c. cassius</i> (Cramer, 1775)	NYMPHALIDAE (60)
Theclinae	Biblidinae
Eumaeini	Biblidini
<i>Calycopis atnius</i> (Herrich-Schäffer, [1853])*	<i>Biblis hyperia nectanabis</i> (Fruhstorfer, 1909)
<i>Calycopis</i> sp.	<i>Catonephele a. acontius</i> (Linnaeus, 1771)*
<i>Gorgina</i> sp.	<i>Dynamine a. agacles</i> (Dalman, 1823)*
<i>Lamprospilus badaca</i> (Hewitson, 1868)*	<i>Dynamine i. ines</i> (Godart, [1824])*
<i>Rekoa palegon</i> (Cramer, 1780)*	<i>Hamadryas a. amphinome</i> (Linnaeus, 1767)
<i>Strymon astiocha</i> (Prittwitz, 1865)*	<i>Hamadryas chloe rhea</i> (Fruhstorfer, 1907)
<i>Strymon bazochii</i> (Godart, [1824])*	<i>Mestra dorcas hypermnestra</i> Hübner, [1825]
<i>Strymon bubastus</i> (Stoll, 1780)*	<i>Nica f. flavilla</i> (Godart, [1824])*
<i>Strymon mulucha</i> (Hewitson, 1867)*	Cyrestini
<i>Strymon rufofusca</i> (Hewitson, 1877)	<i>Marpesia chiron marius</i> (Cramer, 1779)
<i>Theritas hemon</i> (Cramer, 1775)*	

Table 1. Continued...

Taxon	Taxon
Charaxinae	<i>Opsiphanes invirae pseudophilon</i> Fruhstorfer, 1907
<i>Archaeoprepona amphimachus pseudomeander</i> (Fruhstorfer, 1906)*	Morphini
Danainae	<i>Antirrhoea archaea</i> Hübner, [1822]*
Danaini	<i>Morpho anaxibia</i> (Esper, [1801])*
<i>Lycoria halia discreta</i> Haensch, 1909	<i>Morpho e. epistrophus</i> (Fabricius, 1796)*
Ithomiinae	<i>Morpho helenor achillaena</i> (Hübner, [1823])*
Dircennini	Nymphalinae
<i>Episcada h. hymenaea</i> (Prittwitz, 1865)*	Kallimini
Godyridini	<i>Anartia j. jatrophae</i> (Linnaeus, 1763)
<i>Pseudoscada a. acilla</i> (Hewitson, 1867)*	<i>Junonia evarete</i> (Cramer, 1779)
Ithomiini	<i>Siproeta stelenes meridionalis</i> (Fruhstorfer, 1909)
<i>Ithomia agnosia zikani</i> d'Almeida, 1940	Melitaeini
Mechanitini	<i>Tegosa claudina</i> (Eschscholtz, 1821)*
<i>Mechanitis l. lysimnia</i> (Fabricius, 1793)	Nymphalini
<i>Scada reckia</i> (Hübner, [1808])*	<i>Vanessa myrinna</i> (Doubleday, 1849)*
Melinaeini	Satyrinae
<i>Melinaea ludovica paraiya</i> Reakirt, 1866*	Haeterini
Napeogenini	<i>Pierella nereis</i> (Drury, 1782)*
<i>Hypothyris euclea laphria</i> (Doubleday, 1847)	<i>Pierella lamia</i> ssp.
Oleriini	Satyrini
<i>Oleria aquata</i> (Weymer, 1875)*	<i>Cissia terrestris</i> (Butler, 1867)*
Tithoreini	<i>Euptychoides castrensis</i> (Schaus, 1902)*
<i>Aeria o. olena</i> Weymer, 1875	<i>Godartiana byses</i> (Godart, [1824])*
Heliconiinae	<i>Hermeuptychia hermes</i> (Fabricius, 1775)
Acraeini	<i>Pareuptychia ocirrhoe</i> (Fabricius, 1776)
<i>Actinote thalia pyrrha</i> (Fabricius, 1775)*	<i>Pseudodebis euptychidia</i> (Butler, 1868)*
Argynnini	<i>Taygetis laches</i> (Fabricius, 1793)*
<i>Euptoieta h. hegesia</i> (Cramer, 1779)*	<i>Yphthimoides angularis</i> (Butler, 1867)*
Heliconiini	<i>Yphthimoides renata</i> (Stoll, 1780)*
<i>Agraulis vanillae maculosa</i> (Stichel, [1908])	HESPERIIDAE (39)
<i>Dione j. juno</i> (Cramer, 1779)	Hesperiinae
<i>Dryas i. alcionea</i> (Cramer, 1779)	<i>Callimormus corus</i> Bell, 1941*
<i>Eueides aliphera</i> (Godart, 1819)	<i>Cobalopsis nero</i> (Herrich-Schäffer, 1869)*
<i>Eueides isabella dianassa</i> (Hübner, [1806])	<i>Cymaenes idria</i> Evans, 1955*
<i>Heliconius erato phyllis</i> (Fabricius, 1775)	<i>Cymaenes trinpuctus theogenis</i> (Capronnier, 1874)*
<i>Heliconius ethilla narcaea</i> (Godart, 1819)	<i>Cymaenes</i> sp.
<i>Heliconius sara apseudes</i> (Hübner, [1813])*	<i>Damas clavus</i> (Herrich-Schäffer, 1869)*
<i>Philaethria wernickei</i> (Röber, 1906)	<i>Hylephila p. phyleus</i> (Drury, 1773)
Libytheinae	<i>Justinia j. justinianus</i> (Latrielle, [1824]) *
<i>Libytheana c. carinenta</i> (Cramer, 1777)	<i>Mnasitheus ritans</i> (Schaus, 1902)*
Limnitiidinae	<i>Panoquina lucas</i> (Fabricius, 1793)*
Limnitiidini	<i>Paracarystus m. menestries</i> (Latrielle, [1824])*
<i>Adelpha cocala didia</i> Fruhstorfer, 1915*	<i>Vettius artona</i> (Hewitson, 1868)*
<i>Adelpha l. lycorias</i> (Godart, [1824])*	<i>Vettius lafrenaye</i> (Latreille, [1824])*
<i>Adelpha m. melona</i> (Hewitson, 1847)*	<i>Wallengrenia otho curassavica</i> (Snellen, 1887)*
<i>Adelpha p. plesaure</i> Hübner, 1823*	Pyrginae
Morphinae	Eudamini
Brassolini	<i>Aguna a. asander</i> (Hewitson, 1867)*
<i>Caligo b. brasiliensis</i> (C. Felder, 1862)	<i>Astraptus</i> sp.

Table 1. Continued...

Taxon	Taxon
<i>Caligo i. illioneus</i> (Cramer, 1775)	<i>Autochton itylus</i> Hübner, 1823*
<i>Autochton zarex</i> (Hübner, 1818)	<i>Gorgytion plautia</i> (Möschler, 1877)*
<i>Epargyreus e. exadeus</i> (Cramer, 1779)*	<i>Heliopetes alana</i> (Reakirt, 1868)*
<i>Urbanus chalco</i> (Hübner, 1823)*	<i>Heliopetes a. arsalte</i> (Linnaeus, 1758)
<i>Urbanus d. dorantes</i> (Stoll, 1790)*	<i>Heliopetes omrina</i> (Butler, 1870)*
<i>Urbanus doryssus albicuspis</i> (Herrich-Schäffer, 1869)*	<i>Nisoniades macarius</i> (Herrich-Schäffer, 1870)*
<i>Urbanus p. proteus</i> (Linnaeus, 1758)*	<i>Ouleus frideriucus candangus</i> Mielke, 1968*
<i>Urbanus simplicius</i> (Stoll, 1790)	<i>Pyrgus orcus</i> (Stoll, 1780)*
<i>Urbanus teleus</i> (Hübner, 1821)	<i>Timochares t. trifasciata</i> (Hewitson, 1868)*
<i>Urbanus virescens</i> (Mabille, 1877)*	<i>Trina g. geometrina</i> (C. Felder & R. Felder, 1867)*
Pyrgini	<i>Viola violella</i> (Mabille, 1898)*
<i>Anastrus sempiternus simplicior</i> (Möschler, 1877)*	Pyrrhopyginae
<i>Gesta gesta</i> (Herrich-Schäffer, 1863)*	<i>Pyrrhopyge thericles rileyi</i> Bell, 1931*

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