

**MOTHS AND BUTTERFLIES (LEPIDOPTERA) FROM BAHÍA
HONDA AND CANALES DE TIERRA ISLAND
(VERAGUAS, PANAMA)**

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Abstract

Presented here are the results of a preliminary study of the Lepidoptera of Bahía Honda and Canales de Tierra Island (Veraguas, Panama). The main section is an annotated list of the 112 species of moths and butterflies, representing 94 genera, collected during the first three months of the year 2002. The inventory, grouped under 12 superfamilies and 25 families, can be summarized as follows:

TINEOIDEA

Psychidae 1 species

YPONOMEUTOIDEA

Yponomeutidae 1 species

PYRALOIDEA

	Crambidae	3 species
ZYGAENOIDEA		
	Lacturidae	1 species
	Megalopygidae	3 species
COSSOIDEA		
	Cossidae	2 species
	Dalceridae	2 species
	Limacodidae	1 species
URANIOIDEA		
	Epiplemlidae	2 species
GEOMETROIDEA		
	Geometridae	3 species
HESPEROIDEA		
	Hesperiidae	10 species
PAPILIONOIDEA		
	Papilionidae	2 species
	Pieridae	8 species
	Lycaenidae	2 species
	Riodinidae	2 species
	Nymphalidae	34 species
BOMBYCOIDEA		
	Apatelodidae	1 species
	Mimallonidae	1 species
	Lasiocampidae	2 species
	Oxytenidae	1 species
	Saturniidae	5 species
SPHINGOIDEA		
	Sphingidae	5 species
NOCTUOIDEA		
	Notodontidae	8 species
	Arctiidae	5 species
	Noctuidae	7 species

KEY WORDS: Bahía Honda, Panama, butterflies, moths, Lepidoptera

Introduction

A flash of color, a dazzle of iridescence, butterflies and moths are the most conspicuous of all insects. They are beautiful, and easy to observe up close. Most are harmless. And, unlike other insects, the life of a butterfly is in plain view at every

stage, egg, caterpillar (also called larva), pupa, and adult. It is no wonder that they have captured man's attention and admiration and been celebrated in art and poetry throughout human history.

Moths and butterflies form the insect order Lepidoptera, which translates to "scale-wing," in reference to the tiny, colorful, overlapping scales that cover the wings like shingles on a roof. An estimated 165,000 lepidopteran species have been described Worldwide. Subdivisions and classification within the Lepidoptera vary depending upon which specialist one chooses to follow. Thus Lepidoptera are classified into more than 100 families, which are distributed among 20-40 or so superfamilies and 4-6 suborders (McGavin, 2002; Scoble, 1992; Heppner, 1996). Panama is home to an estimated 16,000 lepidopteran species.

Butterflies represent only 10% of known lepidopteran species, and only 7 of the more than 100 families, yet they are much more popular than moths because they tend to be more colorful and, like us, are active in daytime. As a result, we know disproportionately more about butterflies than we do about moths. And that is unfortunate because moths are much more diverse than butterflies in form, pattern and color, behavior, and defense mechanisms, at every life stage.

Adults are the winged, reproducing stage of the lepidopteran life cycle, and the stage most familiar to us. Lepidopteran adults are unique among insects in having a long proboscis that is coiled when not in use. The majority of species operate on sugar energy, which they obtain by drinking nectar from flowers, and they are important pollinators for many plants. Adults of other species obtain their sugar fuel from rotting fruit, which provides other nutrients as well. Quite a few Lepidoptera visit such dubious objects as animal droppings and animal carcasses, from which they acquire additional nutrients, especially nitrogen, which is difficult to come by, but necessary for egg production.

An unusual method of obtaining nitrogen and protein (in the form of amino acids) has been acquired by butterflies belonging to the family Nymphalidae, subfamily Heliconiinae. These heliconiine butterflies collect pollen from the flowers of certain vines, which belong to the cucumber family (Cucurbitaceae). They carry a large mass of this pollen on the base of their proboscis while they gradually dissolve the amino acids (protein) out of it. Adult males of some butterflies and a few day-flying moths engage in another bizarre behavior known as "mudpuddling." As many as several dozen butterflies at a time, assemble on a patch of wet soil and drink dissolved salts.

Females don't mudpuddle. Why, is a mystery. In general, adults of species that operate on nectar alone have shorter lives, only a few days or weeks long. Those that obtain other nutrients, especially nitrogen, tend to be longer-lived, often surviving several months. The adults of a few species do not eat at all, and depend upon stored fats to keep them going for several days, long enough to mate and lay eggs

(oviposit).

The adults of many butterflies and some day-flying moths are distasteful or toxic if eaten. They obtain their defensive compounds either in the caterpillar stage from the food plant, or as adults by drinking juices from the cut, injured, or decaying surfaces of certain plants. These unpalatable species tend to have bright warning colors and distinctive patterns on their wings, so that birds can learn quickly to avoid them.

These warning colors and patterns are the basis for mimicry complexes that usually consist of a combination of two or more unpalatable species that superficially resemble one another (Müllerian mimicry), and palatable species that resemble the unpalatable ones (Batesian mimicry). Typically, these mimicry complexes are composed of species belonging to different families, and they include day-flying moths as well as butterflies.

The caterpillar is the eating and growing stage of the lepidopteran life cycle. Most caterpillars eat plants, which is to say, they are herbivorous (phytophagous), and most are linked to one (monophagous) or a few (oligophagous) related host plants. Truly polyphagous species are rare. Caterpillars are eating machines, and are by far the most important of all insect herbivores. Although Lepidoptera represent but 20% of all insect species, they are responsible for more than 40% of insect damage to plants. Their impact on plants is all the more impressive when we consider that they are outnumbered more than 2-to-1 by another group of important herbivores, the beetles (Coleoptera), which account for more than 40% of all insect species.

Based on caterpillar feeding behaviors, Lepidoptera can be sorted into two main ecological groups, those whose caterpillars feed exposed on their food plants, and those whose caterpillars remain hidden during most or all of their lives.

The caterpillars of most Lepidoptera (about 75 families of moths) are hidden feeders.

They include species whose adults range from small to tiny, and whose larvae are stem-borers, leaf-miners, leaf-rollers, leaf-tiers, portable-case-makers, builders of covered-trails and moveable tunnels, and constructors of shelters made by cutting and folding leaves in various ways. And that list of categories doesn't begin to describe their diverse behaviors. All of their building efforts involve silk in some way, usually to tie leaves in place. Silk is as important to a caterpillar as it is to a spider.

Caterpillars that feed exposed on their plants are in the minority (about 30 moth families and all 7 butterfly families). This group includes the species with the largest adults and the most colorful caterpillars. Many of these caterpillars obtain bad tasting

□□□□ These two groups correspond fairly well with the categories "Macrolepidoptera" and "Microlepidoptera," which entomologists once used. That system now is known to be an artificial one that does not reflect evolutionary relationships, and has been abandoned.

or toxic chemicals from their plants, and their striking patterns and bright colors signal potential predators not to eat them.

The caterpillars of some exposed feeders are camouflaged and often are overlooked, though they are in plain view. A striking exception within the exposed feeder group, are the skipper butterflies (Hesperiidae), whose caterpillars live and pupate concealed within shelters that the caterpillars construct by cutting and folding leaves. We consider them together with exposed feeders, in spite of their shelter-building, based on more technical characteristics, including the fact that their caterpillars do tend to be colorful, and they leave their shelters to eat.

We tend to think of butterflies as "advanced" and moths as "primitive," but that is misleading and an oversimplification. Though butterflies are relative newcomers, that does not mean they are superior in any way. They are simply doing something new and different, that is they fly in the day time. We must not underestimate moths. In fact, they account for most of the diversity of form and behavior among the Lepidoptera. One way or another, all species are specialized to survive in their little niche on this planet.

The fact that most lepidopteran species are dependant on one or a few flowering plants, makes them sensitive indicators of environmental degradation and pollution. If their habitat is destroyed and/or their host plant(s) eliminated, they will disappear. The more information we obtain on the larval food plants and habits of Lepidoptera the more useful they will become as environmental indicators. Even now, we already know enough about many butterflies to justify including them near the top of the list in any environmental impact study.

In this chapter we provide biogeographical and ecological data for species captured in a small area of the Panamanian Pacific, known as Bahía Honda.

We know of only one lepidopterological study pertaining to any area near to Bahía Honda, that for Coiba Island (Viejo *et al.*, 1997). Several older works cover other areas of Panama, especially the Canal watershed and Barro Colorado Island (Bell, 1931; Forbes, 1939, 1942; Huntington 1932). Still others cover larger areas of Central America, including Panama (Seitz, 1906-1934; Godman & Salvin, 1879-1908). Because the butterfly faunas of Panama and Costa Rica are rather similar, the two volumes on Costa Rican butterflies, by Phil DeVRIES (1987, 1997), work well for Panama.

Materials and Methods

Over a period of three months (January through March 2002) 126 lepidopteran

specimens were collected in the Bahía Honda region on the Pacific coast of Veraguas Province, Panama. This area is comprised of a tiny continental island, Canales de Tierra, and the surrounding mainland.

One set of captures was made at various sites in Bahía Honda and on Canales de Tierra Island. Another group of captures was made at the lights of the boat "Amazon Express," usually anchored at one end of Canales de Tierra Island Cove (large bay), next to El Quinco Island.

The capture areas in Bahía Honda (BH) and Canales de Tierra Island (ICT) are designated as described below.

Area 1: ICT: The construction site for Jean Pigozzi's house, at the top of the ridge, the highest point on the island (161 m). Area open, with primary forest on one side and second growth on the other.

Area 2: BH: Orange grove in an open area behind Limón Beach on the main land. Previously this zone was a farm, and naturalized orange trees are found there among the second growth.

Area 3: ICT: Path between the main cove and Guabo Beach (north side of island). Area drier than rest of the island, and with shrubby plants that include many members of the Asteraceae.

Area 4: BH: Very open, dry field, full of *Lantana*, a few meters inland of the Limón Beach orange grove (area 2), on the main land.

Area 5: BH: "Magic Forest" and the stream through an open area behind it, farther inland from area 4, on the main land.

Area 6: BH: El Edén and an orchard beyond it, both in an open area around a small building, in Bahía Honda Bay.

Area 7: ICT: Long path around the island, passes through primary and secondary forest and is mostly very shady.

Area 8: ICT: Looping path from the Liquid Jungle Lab, along a ridge, to the center of the island, and back to the lab.

Area 9: BH: Small mangrove and waterfall on the main land.

Area 10: BH: Forest inland of El Edén.

Area 11: ICT: Path from the Liquid Jungle Lab, through primary forest, to El Naranjo Beach.

Butterflies were captured using insect nets, and moths were captured at the lights of the boat, "Amazon Express." All collections were made by one of the authors (Olga of Greece). The specimens were pinned and are kept in the "Olga of Greece" collection at Bahía Honda.

The pinned specimens were photographed to show dorsal, ventral, and, in some cases, partial views, using a digital camera. Photographs were made by the collector, then printed at various scales on paper and burned onto a CD.

So far, 112 species of Lepidoptera have been identified from Bahía Honda. These represent 54 species of moths (50 genera, 19 families), and 58 species of butterflies (44 genera, 6 families).

Butterflies of the families Nymphalidae, Papilionidae, Pieridae, and Riodinidae were identified mostly by Vicente Rodriguez Gracia (VRG), who consulted the following publications: DeVRIES (1987 and 1997); D=ABRERA (1981, 1984, 1987a 1987b, 1988, 1994 and 1995a); VÉLEZ and SALAZAR (1991); SMART (1981); QUINTERO and AIELLO (eds) (1992); LEWIS (1973); and GARCÍA-ROBLEDO *et al.* (2002).

Skipper butterflies (family Hesperidae) also were identified by VRG., using two websites (O=BRIEN, 2002; OPLER, *et al.*, 2002).

The hairstreak butterflies (family Lycaenidae) were identified by Robert K. Robbins (National Museum of Natural History, Smithsonian Institution, Washington, D.C.).

The Sphinx moths (family Sphingidae) were identified by VRG using ROTHSCCHILD and JORDAN (1903), and by Annette Aiello (AA) using D'ABRERA (1986).

The Giant silk moths (Saturniidae) were identified by VRG using JANZEN (1982) and D=ABRERA (1995b).

The one member of the family Oxytenidae was identified by AA using AIELLO and BALCAZAR (1997).

The Noctuidae were identified by Mike Pogue (USDA), the Limacodidae and Megalopygidae by Marc Epstein (NMNH), and the Apatelodidae, Arctiidae, Cossidae, Epiplemidae, Geometridae, Lacturidae, Lasiocampidae, Mimallonidae, Noctuidae, Notodontidae, Psychidae, and Yponomeutidae by Vitor Becker (Univ. Brasilia).

Host plant information was obtained from DeVRIES (1987, 1997); JANZEN and

HALLWACH (2002); and AIELLO (in litt.).

The classification system for families and higher taxa largely follows HEPPNER (1996). Within the Nymphalidae, we follow DeVRIES (1987).

For plants, we follow the classification of DAHLGREN (1983, 1989).

Inventory

Specimens pertaining to 112 species were identified. Of these, 54 species (50 genera) are moths, which pertain to 19 families: Apatelodidae, Arctiidae, Cossidae, Crambidae, Dalceridae, Epiplemididae, Geometridae, Lasiocampidae, Limacodidae, Lacturidae, Megalopygidae, Mimallonidae, Noctuidae, Notodontidae, Oxytenidae, Psychidae, Saturniidae, Sphingidae, and Yponomeutidae. And, 58 species (44 genera) are butterflies, which pertain to 6 of the 7 butterfly families: Hesperidae, Lycaenidae, Nymphalidae, Papilionidae, Pieridae, and Riodinidae. Only the Hedyliidae are missing. The superfamilies, families, and subfamilies are arranged largely as in HEPPNER (1996), and the 112 species are listed alphabetically under their subfamilies or families.

TINEOIDEA

PSYCHIDAE

OIKETICINAE

Oiketicus kirbyi Guilding, 1827. Photograph n^o M.0129

Common name: Bagworm moth

Charcoal-black, with long body, elongate forewing that has an irregular white mark, and broad, truncate hind wing.

Geographic range: Central America through northern South America, and into the West Indies. Ours was captured in March 2002, at the lights of the boat "Amazon Express."

The caterpillar lives in a "bag" constructed from silk and plant parts, especially small twigs. Pupation takes place in the bag. The adult male is winged. The adult female is a wingless, legless bag of eggs. She remains in her bag, and releases chemicals that attract the male to mate with her there. A species of *Oiketicus* was reared in Panama on *Guazuma ulmifolia* (Sterculiaceae) (Aiello lot 1984-19). However, the caterpillars eat a wide array of plant species.

YPONOMEUTOIDEA

YPONOMEUTIDAE

ATTEVINAE

***Atteva pustulella* (Fabricius, 1787).** Photograph n^o M.0036

Common name: Ailanthus Webworm Moth.

Small attractive moth with elongate wings. Forewing red, with black-bordered, white spots. Hind wing gray, darker along margins. The moth rests with the wings closed over the body.

Geographic range: Northeastern United States through Central America. Ours was captured in February 2002, at the lights of the boat "Amazon Express."

Though the name *A. punctella* Cramer is older than the name *A. pustulella*, it cannot be used because it is a homonym, *i.e.*, it had already been used for a different species (by a different author).

The caterpillars live in communal webs on their food trees, several members of the tropical family Simaroubaceae (Covell, 1984). Until the late 1700s, the moth was confined to the tropics. Then, when *Ailanthus altissima*, another simaroubaceous tree, was introduced from China to Europe and the United States and became an invasive weed in both its new homes, *Atteva pustulella* expanded its diet to include it, and spread north wherever the tree is found.

PYRALOIDEA

CRAMBIDAE

SPILOMELINAE

***Ategumia matutinalis* (Guenée, 1854).** Photograph n^o M.0031

Common name: none.

Small moth with wings pale yellow, with wide brown borders and several thin, irregular, brown bands. The moth rests with the wings spread.

Geographic range: Central and South America. Our moth was collected in January 2002, at the lights of the boat "Amazon Express."

***Conchylodes noickenialis* (Snellen, 1875).** Photograph n^o M.0025

Common name: None.

Wings white, with black borders. Forewing with a black band and a black **V**. Hind wing with a black **V**, one arm of which is narrower than other. Abdomen white, with black stripe and orange tip.

Geographic range: Mexico through Central America. Ours was captured in January 2002, at the lights of the boat "Amazon Express."

Reared in Panama on *Cordia alliodora* (Boraginaceae) (Aiello lot 1980-75). The caterpillar cuts and sews a round leaf piece to make a bubble-like cocoon, in which to pupate. When disturbed, the caterpillar or the pupa thrash about, making the cocoon jump about. The moth rests with the wings spread.

***Polygrammodes elevata* (Fabricius, 1775).** Photograph n^o M.0041

Common name: None.

Small, delicate moth. Wings yellowish white, with irregular brown markings that form poorly defined stripes.

Geographic range: Southern United States through Central and South America, and into the West Indies. Ours was captured in February 2002, at the lights of the boat "Amazon Express."

The moth rests with the wings spread.

ZYGAENOIDEA

LACTURIDAE

***Lactura schenoxantha* (Schaus, 1912).** Photograph n^o M.0105

Common name: None.

Small, delicate moth. Wings orange, with thin, black border.

Geographic range: Costa Rica and Panama. Our moth was captured in January 2002, on Canales de Tierra Island.

Until our specimen was collected, this species was known only from Costa Rica. The family Lacturidae was at one time included in the family Yponomeutidae.

MEGALOPYGIDAE

MEGALOPYGINAE

***Megalopyge lanata* (Cramer, 1780).** Photograph n° M.0087

Common name: Mangrove flannel moth.

Forewing dirty white, with blackish veins, and with faded black markings in basal half.

Hind wing dirty white, with black veins. Body densely covered with setae ("hairs").

Geographic range: Mexico to Brazil. Ours was captured in February 2002, at the lights of the boat "Amazon Express."

Reared in Panama on *Conocarpus erectus* and *Terminalia catappa* (Combretaceae) (Aiello lot 1997-13), and *Lagerstroemia indica* (Lythraceae) (Aiello lot 1979-134).

***Megalopyge opercularis* (J.E. Smith, 1797)?.** Photograph n° M.0047

Common name: Southern flannel moth.

Wings cream to yellowish, with poorly-defined brownish and white markings towards base of forewing.

Geographic range: Southern United States, through Central and South America, and into the West Indies. Ours was captured in January 2002, at the lights of the boat "Amazon Express."

The larva has been reported to eat a variety of trees, including *Quercus* (Oak, Fagaceae) and members of the Rosaceae, in temperate areas (COVELL, 1984).

MEGALOPYGIDAE

TROSIINAE

***Trosia dimas* (Cramer, 1775).** Photograph n° M.0030

Common name: Trosia flannel moth.

Forewing pinkish white, with pinkish orange costal margin, and band of black dots.

Hind wing and abdomen entirely pinkish orange. Thorax white, with pinkish orange tufts.

Geographic range: Central and South America. Ours was captured in January 2002, at the lights of the boat "Amazon Express."

The larva of another member of this genus has been reported on *Quercus* (Oak) in the United States (WALSH, 2003).

COSSOIDEA

COSSIDAE

HYOPTINAE

***Givira nais* (Druce, 1896).** Photograph n^o M.0035

Common name: Carpenterworm moth.

Wings elongate, dull brown, darker at base of forewing, with reticulate pattern. Body brown, long and tapering.

Geographic range: Central America. Ours was captured in February 2002, at the lights of the boat "Amazon Express."

The larvae of members of this family bore into tree trunks, and can cause a good deal of damage.

ZEUZERINAE

***Morpheis pyracmon* (Cramer, 1780).** Photograph n^o M.0066

Common name: Carpenter moth.

Wings narrow, white, with irregular brown reticulations. Body slender and tapering, brown, with white dorsally.

Geographic range: Central and South America. Ours was captured in January 2002, at the lights of the boat "Amazon Express."

The larvae of members of this family bore into tree trunks, and can cause a good deal of damage.

DALCERIDAE

***Acraga coa* (Schaus, 1892).** Photograph n^o M.0029

Common name: Tropical slug caterpillar moth.

Wings rounded; golden yellowish; forewing tinged brownish, with paler veins. Body golden yellowish.

Geographic range: Southern Mexico through Panama. Ours was captured in January 2002, at the lights of the boat "Amazon Express."

***Paracraga argentea* (Schaus, 1910).** Photograph n° M.0104

Common name: Red and yellow glass larva moth.

Satin-white, with faintest brown, irregular oval and a tiny black dot on forewing.

Geographic range: Mexico to Panama. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Larva looks like clear glass, with brilliant red and yellow stripes embedded within. Reared in Panama on *Adelia triloba* (Euphorbiaceae) (Aiello lot 1979-8), *Uncaria tomentosa* (Rubiaceae) (Aiello lot 1984-23), and *Trema micrantha* (Ulmaceae) (Aiello lot 1983-9).

LIMACODIDAE

***Acharia nesea* (Stoll, 1780).** Photograph n° M.0026

Common name: Saddleback caterpillar moth.

Little brown moth, with rounded wings and tufted legs.

Geographic range: Central and South America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

The moth rests with the wings tented, and with one front leg extended more than the other, in an asymmetrical pose that helps camouflage it on vegetation.

The caterpillars are the famous saddle-backs that have a dorsal bull's-eye and sharp, setae whose tips break off and inject pain venom when touched. Reared in Panama on *Gustavia* (Lecythidaceae) (Aiello lot 1978-93) and *Quassia amara* (Simaroubaceae) (Aiello lot 1979-31).

URANIOIDEA

EPIPLEMIDAE

***Schidax squammularia* Hübner, 1818.** Photograph n° M.0034

Common name: None.

Pale brown, checkered with dark brown. Forewing tip with slight concavity. Hind wing with double concavity, almost appearing broken off, at anal angle.

Geographic range: Central and South America, Cuba. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Nothing is known of the immature stages or larva food plants.

***Syngria druidaria* Guenée, 1857.** Photograph n° M.0075

Common name: None.

Pale brown, minutely patterned with darker brown, white, and bluish gray. Forewing costal margin strongly curved back to a slightly tapered tip. Hind wing with 2 teeth and 2 concavities at anal angle.

Geographic range: Central and South America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Reared in Panama on *Amphilophium paniculatum* (Bignoniaceae), by Joe Wright (STRI) and his crew (Wright lot 98-55), in Parque Natural Metropolitano.

GEOMETROIDEA

GEOMETRIDAE

ENNOMINAE

***Epimecis subroraria* (Walker, 1860).** Photograph n° M.0053

Common name: Piper beauty.

Brown, beige, and bluish gray checked, with undulate hind wing margins.

Geographic range: Mexico through Central America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Epimecis detexta (Walker, 1860) has been reared in Panama, on *Piper dilatatum* Rich. (Piperaceae) (Aiello lot 1982-4).

STERRHINAE

***Leptostales delila* (Schaus, 1912).** Photograph n° M.0032

Common name: None.

Small, pale brown, with broad, darker brown, wavy-bordered band across both wings.

Geographic range: Costa Rica and Panama. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Rests with wings spread.

***Pseudasellodes fenestraria* (Guenée [1858]).** Photograph n° M.0033

Common name: None.

Brownish wings with scalloped margins, and with series of irregular, clear areas towards wing bases, larger on forewing, smaller on hind wing.

Geographic range: Central and South America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Reared in Panama on *Randia armata* (Rubiaceae) (Aiello lot 1979-110).

HESPEROIDEA

HESPERIIDAE

PYRGINAE

***Achlyodes busirus* (Cramer, 1779).** Photograph n° H.0127

Common name: Giant Sicklewing.

Darkly marked with velvet black and deep blue.

Geographic range: Mexico to Paraguay. Our female was captured in March 2002, in area 2 (Bahía Honda).

This species is n^o F.2.1 in Evans' Catalogue (1953).

Caterpillar reported to eat *Citrus* (Rutaceae) (Biezanko 1963) and *Zanthoxylum* (Rutaceae) (Moss 1949). Bahía Honda has members of both those plant genera.

Reared in Panama on *Zanthoxylum setulosum* (Rutaceae) (Aiello lots 1979-41, 1979-106, and 2001-36).

***Astrartes creteus* (Mabille, 1903?).** Photograph n^o H.0017

Common name: none.

Dark brown, with metallic blue on body and wing basal areas.

Geographic range: Mexico to the Brazilian Amazon. Our male was caught in January 2002, on Canales de Tierra Island.

This species is n^o C.14.28 in Evans' Catalogue (1952).

Caterpillar reported *Jacaranda cuspidifolia* and *Sloanea eichleri* (d'Araújo e Silva, 1968, no. 2231; Moss, 1949).

***Astrartes fulgurator* (Walch, 1775).** Photograph n^o H.0016

Common name: Two-barred Flasher.

Brown, with metallic greenish on body and wing basal areas, and with broken, white (devoid of scales) band across apical half of forewing.

Geographic range: Central and South America. Our male, representing subspecies *A. f. azul* (Reakirt, 1867), was captured in January 2002, in area 1 (Canales).

This species is n^o C.14.2 in Evans' Catalogue (1952).

Caterpillar reportedly polyphagous, but mainly eats Fabaceae, including, *Delonix regia*, *Erythrina*, *Sena*, *Sesbania*, and *Inga* (Biezanko, 1963; Moss, 1949).

Reared in Panama on *Senna hayesiana* (Fabaceae: Caesalpinioideae) (Aiello lots 1988-29 and 1994-4).

***Erynnis tristis* (Boisduval, 1852).** Photograph n^o H.0018

Common name: Mournful Duskywing.

Brown, faintly marked with grayish.

Geographic range: Mexico to Central America. Our female was captured in February 2002, in area 2 (Bahía Honda).

This species is n^o F.16.9 in Evans' Catalogue (1953).

Caterpillar reported to eat *Quercus oleoides* (Fagaceae) (V.R. GRACIA, *in litt.*).

***Heliopetes arsalte* (Linnaeus, 1758).** Photograph n^o H.0108 and H.0111

Common name: Veined White-Skipper.

White, with dark veins towards outer portion of wings, and brown-veiled towards forewing apices.

Geographic range: Mexico to Paraguay. Our male and female were captured in March 2002, in area 4 (Bahía Honda).

This species is n^o G.2.7 in Evans' Catalogue (1953).

Caterpillar reported on *Helicteres* (Sterculiaceae), *Malachra*, *Malvaviscus*, and *Pavonia* (Malvaceae) (V.G. GRACIA, *in litt.*). Of these, *Malvaviscus* and *Pavonia* are present in Bahía Honda. Other members of the genus *Heliopetes* are known to eat plants of the families Convolvulaceae and Malvaceae (Biezanko, 1963; d'Araújo e Silva, 1968, no. 2274).

***Pyrgus oileus* (Linnaeus, 1767).** Photograph n^o H.0118

Common name: Tropical Checkered-Skipper.

Black and white checkered, with black veins.

Geographic range: Florida and the Antilles to Central America. Our male was captured in March 2002, in area 6 (Bahía Honda).

This species is n^o G.1.11 in Evans' Catalogue (1953).

Caterpillar reported to eat Malvaceae, including *Abelmoschus*, *Althaea*, *Hibiscus*, *Malva*, and *Sida* (Biezanko, 1963). At least two species of *Sida* are found in Bahía Honda.

Reared in Panama on *Sida* spp. (Malvaceae) (Aiello lots 1977-13 and 1977-55).

***Urbanus teleus* (Hübner, 1821)**. Photograph n° H.0020

Common name: Teleus Longtail.

Brown, with long tails, and with 2 oblique, narrow, white (devoid of scales) bands across forewing.

Geographic range: Mexico to Central America. Our male was collected in January 2002, on Canales de Tierra Island.

This species is n° C.13.13 in Evans' Catalogue (1952).

Caterpillar reported to eat *Schrankia* and *Pisum sativum* (Moss, 1949; d'Araújo e Silva, 1968, no. 2331).

HESPERIINAE

***Panoquina ocola* (Edwards, 1836)**. Photograph n° H.0038

Common name: Ocola Panoquin.

As with a very large number of hesperiine skippers, brown, with several clear (devoid of scales) markings on forewing. Genitalia are needed to distinguish many hesperiine species.

Geographic range: Southern United States to Peru. Our male was collected in January 2002, on Canales de Tierra Island.

This species is n° O.2.4 in Evans' Catalogue (1955).

Hesperiine skippers are nearly confined to eating monocotyledonous plants.

Caterpillar reported to eat...

Oryza sativa (rice) (Poaceae), *Saccharum officinale* (sugar cane) (Poaceae), and *Panicum* sp. (Biezanko, 1963; Hayward, 1969).

***Panoquina panoquinoides* (Skinner, 1891)**. Photograph n° H.0114

Common name: Obscure Skipper.

As with a very large number of hesperiine skippers, brown. Genitalia are needed to distinguish many hesperiine species.

Geographic range: Florida, through Texas, south to Peru and the West Indies. Our male was collected in March 2002, in area 2 (Bahía Honda).

This species is n° O.2.2 in Evans' Catalogue (1955).

A species of open, areas, including beaches and marshes.

Panoquina spp. caterpillars are reported to eat Poaceae (grasses), including *Eriochloa*, *Melinis*, *Oryza sativa* (rice), *Panicum*, *Saccharum officinarum* (sugar cane) (Biezanko, *et al.*, 1957; d'Araújo e Silva, 1968, no. 2144; Biezanko, 1963; Hayward, 1969; Moss, 1949).

***Perichares philetus* (Gmelin, 1790).** Photograph n° H.0019

Common name: Green-backed Ruby-eye.

As with a very large number of hesperiine skippers, brown, with several clear (devoid of scales) markings on forewing. Genitalia are needed to distinguish many hesperiine species.

Geographic range: Mexico to Venezuela. Our female was collected in February 2002, at the lights of the boat "Amazon Express."

This species is n° K.30.2 in Evans' Catalogue (1955).

Caterpillar reported to eat palms, including *Desmoncus* and *Hyospathe* (Arecaceae), and grasses (Poaceae), including *Bambusa* (Moss, 1949; d'Araújo e Silva, 1968, no. 2185).

Reared in Panama on *Panicum maximum* (Poaceae) (Aiello lot 1985-44).

PAPILIONOIDEA

PAPILIONIDAE

PAPILIONINAE

***Parides arcas* (Cramer, 1777).** Photograph n° P.0068

Common name: Arcas Pipevine Swallowtail.

Sexually dimorphic. Black with green (male) or white (female) forewing patch, and pink hind wing patch. Hind wing pink-fringed.

Geographic range: Mexico to Venezuela. Reported from Coiba Island (VIEJO *et al.*, 1997). Our female, representing subspecies *P. a. mylotes* (Bates, 1861), was caught in February 2002, in Area 2, Bahía Honda. The subspecies is found from Mexico to Costa Rica.

The New World genera *Parides* and *Battus*, and the Old World genus *Ornithoptera* are allied taxa, and their caterpillars feed exclusively on species of Pipevine (*Aristolochia*, Aristolochiaceae). In Bahía Honda we found *Aristolochia pilosa* (IBÁÑEZ, A., com. pers.) (1)

Reared in Panama on *Aristolochia cordiflora* (Aiello lot 1978-89), *maxima* (Aiello lot 2002-38), and *Aristolochia pilosa* (Aiello 1978-118).

***Parides sesostris* (Cramer, [1779]).** Photograph n° P.0137

Common name: Sesostris Pipevine Swallowtail.

Sexually dimorphic. Similar to *P. arcas* but forewing patches lower, and hind wing patches smaller. No hind wing pink fringe.

Geographic range: Mexico to Bolivia. Reported from Coiba Island (VIEJO *et al.*, 1997). Two females, representing subspecies *P. s. zestos* (Gray, 1852), were captured in March 2002, in areas 10 (Bahía Honda) and 11 (Canales). The subspecies is found from Mexico to Costa Rica.

The caterpillar host plants are species of *Aristolochia* (Aristolochiaceae). See comments under *P. arcas*.

Reared in Panama on *Aristolochia tonduzii* (Aiello lot 1980-57).

PIERIDAE DISMORPHIINAE

***Pseudopieris nehemia* (Boisduval, 1836).** Photograph n° P.0074

Common name: none.

Our only specimen, a female, was white with broadly bordered with black at the

forewing apices.

Geographic range: Mexico to southern Brazil. Our female, perhaps representing subspecies *P. n. luisa* (Lamas, 1979), was collected in January 2002, in Bahía Honda.

The host plant is not known, though other members of the subfamily Dismorphiinae are known to eat *Inga* (Fabaceae: Mimosoideae).

PIERINAE

***Itaballia demophile* (Linnaeus, 1758).** Photograph n° P.0071

Common name: none.

Weakly sexually dimorphic. Our one specimen, a female, is white, with black wing margins, and a narrow black bar across the forewing, and with a pale yellowish blush on the hind wings.

Geographic range: Mexico to Paraguay. Reported from Coiba Island (VIEJO *et al.*, 1997). Our female, representing subspecies *I. d. centralis* Joyce and Talbot, 1928, was captured in January 2002, in area 10 (Canales). The subspecies is limited to Central America.

Caterpillar reported to eat *Capparis indica* and *C. frondosa* (Capparaceae) (DeVRIES, 1987). In Bahía Honda at least two species of *Capparis*, *C. amplissima* and *C. frondosa*, have been found.

***Leptophobia aripa* (Boisduval, 1836).** Photograph n° P.0145

Common name: Mountain White.

Our single specimen, a female, is white with wings black-bordered, broadly on the forewing, narrowly on the hind wing, and with the suggestion of a black bar across the forewing.

Geographic range: Mexico to Brazil. Ours was captured in March 2002, in area 7 (Canales).

Caterpillar reported to eat *Rorippa officinale* (Brassicaceae, previously known as the Cruciferae) and *Tropaeolum maritimum* (Tropaeolaceae) (DeVRIES, 1987).

***Perrhybris pyrria* (Fabricius, 1775).** Photographs n° P.0146 (male) and P.0147 (female)

Common name: none.

Strongly sexually dimorphic. The male is white, with black forewing tips, and with faint black and orange barring across the undersurface of the hind wings. The female is orange and black barred with large yellow blotches near the forewing apices.

Geographic range: Costa Rica to Brazil. Our male and female were captured in March 2002, in area 7 (Canales).

Females belong to the tiger-patterned heliconiine mimicry complex, whereas the males are typical of the family, though they do have a touch of black and orange ventrally (DeVRIES, 1987). Caterpillar reported to eat *Capparis isthmensis* and *C. pittieri* (Capparaceae) (DeVRIES, 1987).

COLIADINAE

***Aphrissa boisduvalii* (Felder, 1861).** Photograph n° P.0142

Common name: Boisduval's Sulphur.

Our specimen is a female, and is white, with a thin black forewing border, a small, black forewing spot, and a salmon-colored blush towards the base of the hind wings.

Geographic range: Guatemala to Brazil and Bolivia. Our female was collected in March 2002, area 3 (Canales).

Males visit damp beach sands (see comments on mudpuddling in introduction), forming small groups. Both sexes visit the flowers *Inga* and *Hibiscus* in the swamps. Caterpillar reported to eat *Mora melistosperma* (Fabaceae) (DeVRIES, 1987).²

***Eurema दौरa* (Godart, 1819).** Photograph n° P.0109

Common name: Barred Yellow.

Sexually dimorphic and, as well, have seasonal forms. Ours, a male, had yellow forewing with broad, black margins and thin, yellow posterior border; hind wing white,

²For local comments (Bahía Honda and Canales de Tierra) on the host plants we have relied on Dr. Alicia IBÁÑEZ. See also the chapter corresponding to Flora in this volume.

with touch of black at apex.

Geographic range: Northeastern United States to Uruguay. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male was captured in March 2002, in area 4 (Bahía Honda).

Caterpillar reported to eat plants of the family Fabaceae (Leguminosae), including members of the genera *Aeschynomene*, *Stylosanthes* and *Desmodium* (DeVRIES, 1987). In Bahía Honda we have collected *Aeschynomene americana*, *Desmodium adscendens* and *D. axillare*.

Reared in Panama on *Aeschynomene americana* (Fabaceae: Papilionoideae) (Aiello lot 1991-14).

***Phoebis argante* (Fabricius, 1775).** Photograph n° P.0024

Common name: Apricot Sulphur.

Sexually dimorphic. Our only specimen, a male, was bright yellow-orange, finely bordered with black.

Geographic range: Mexico to Peru, in disturbed habitats. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male was captured in January 2002, in Bahía Honda.

Both sexes visit flowers, especially red-colored ones (DeVRIES, 1987). Caterpillars have been reported on members of the plant family Fabaceae: species of *Cassia* (now known as *Senna*) of the subfamily Caesalpinioideae and *Inga* and *Pentaclethra* of the subfamily Mimosoideae. Ten species of *Inga* were collected in Bahía Honda.

Reared in Panama on *Senna hayesiana* (Fabaceae: Caesalpinioideae) (Aiello lot 1988-28).

***Phoebis philea* (Linnaeus, 1776).** Photographs n° P.0023 (female) and P.0063 (male)

Common name: Orange-barred Sulphur.

The clearly sexually dimorphic, and variable. Our male was bright yellow, with a large orange patch near the middle of the forewing anterior margin, and with the hind wings broadly bordered with deep-orange. Our female was white, with irregular, black margins and spotting.

Geographic range: Throughout Central and South America. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male and female were collected in January 2002, in

areas 5 and 6 (Bahía Honda). Both belong to the subspecies *P. p. philea* (Linnaeus, 1776).

Caterpillar reported to eat various species of *Cassia* (now known as *Senna*) (Fabaceae: Caesalpinioideae) (DeVRIES, 1987).

Reared in Panama on *Senna hayesiana* (Fabaceae: Caesalpinioideae) (Aiello lots 1988-27 and 1988-31).

LYCAENIDAE

THECLINAE

***Arawacus lincoides* (Draudt, 1919).** Photograph n° Niko López 10-3

Common name: Stripe-streak.

Members of the genus *Arawacus* are the famous "false-head" hairstreaks. The wings below are white, with numerous dark stripes that converge at the hind wing apex, where in conjunction with the "tails" give the impressions of a head with antennae. It is thought that this illusion diverts a predator's attention away from the true head.

Geographic range: Costa Rica to Columbia.

Caterpillars, of those *Arawacus* species for which the plant is known, eat *Solanum* spp. (Solanaceae). Bahía Honda has at least 4 species of *Solanum*.

POLYOMMATINAE

***Everes comyntas* (Godart, 1824).** Photograph n° P.0110

Common name: Eastern Tailed-Blue.

Grayish blue above, with small, black squares along the hind wing margin apex, and with a thread-like "tail." Below, grayish white, sparsely sprinkled with small, black spots, and with two black-centered orange spots near the "tail."

Geographic range: Widely distributed species. Canada through Central America (ROBERT ROBBINS, *in litt.*). Flight period is limited to April through November in northern part of range. Our male was caught in March 2002, in area 4 (Bahía Honda).

Caterpillar reported to eat a wide range of plants belonging to the Fabaceae, many of which are fodder crops or roadside weeds. Included among these are *Astragalus*, *Desmodium*, *Lathyrus*, *Lotus*, *Medicago sativa*, *Melilotus officinalis*, *Trifolium*, and *Vicia*. Of these, only *Desmodium* is present in Bahía Honda.

RIODINIDAE

RIODINIINAE

***Eurybia lycisca* Westwood, 1851.** Photograph n° P.0119

Common name: Blue-winged Sheenmark.

Brown, with large, yellow-rimmed black spot in forewing cell. Pattern below is identical, though paler.

Geographic range: Mexico to Ecuador. Our male was captured in March 2002, in area 10 (Bahía Honda).

Adults sometimes interact aggressively with orchid bees (Hymenoptera: Apidae: Euglossinae) at flowers (DeVRIES, 1997).

Caterpillar reported to eat various species of *Calathea* and *Ichnosiphon* (Marantaceae) (DeVRIES, 1987). At least two species of *Calathea* are found in Bahía Honda.

***Menander pretus* (Cramer, 1777).** Photograph n° P.0153

Common name: Greenish Grayler.

Brown, checkered with blue.

Geographic range: Guatemala to Brasil. Our male, representing subspecies *M. p. picta* (Godman and Salvin, 1886), was captured in March 2002, in Bahía Honda. The subspecies is found from Guatemala to Panama.

Both sexes visit flowers of *Citrus*, *Cordia*, *Lantana*, and *Miconia* (DeVRIES, 1997).

Caterpillar reported on *Marcgravia* and *Souroubea* (Marcgraviaceae) (DeVRIES, 1987). *Souroubea venosa* is found in Bahía Honda.

NYMPHALIDAE

ITHOMIINAE

***Aeria eurimedia* (Cramer, 1779).** Photograph n° P.0029

Common name: Black-and-Yellow Prestonian.

A small, black butterfly with two wide, pale yellow bars on the forewing, and one on the hind wing.

Geographic range: Mexico to Colombia. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male, representing subspecies *A. e. agna* Godman & Salvin, 1879, was captured in January 2002, in Bahía Honda. The subspecies is found from Nicaragua to Panama.

The caterpillar host plant in Costa Rica is *Prestonia portobellensis* (Apocynaceae) (DeVRIES, 1987). The food plant in Bahía Honda might be *Prestonia quinquadragularis*.

***Mechanitis polymnia* (Linnaeus, 1758).** Photographs n° P.0007, P.0130, and P.0131

Common name: Disturbed Tigerwing.

A darker version of *Heliconius ismenius*.

Geographic range: Mexico to Amazon. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male and two females, all representing subspecies *M. p. isthmia*, Bates, 1863, were caught in January 2002 and March 2002, in areas 2 and 10 (Bahía Honda). The subspecies is found from Mexico to Panama.

Mechanitis polymnia forms a mimicry complex with *Tithorea harmonia*, *Hypothyris lycaste*, *Thyridia psidii*, and others (HABER, 2003).

The caterpillar host plants are various species of *Solanum* (Solanaceae). Bahía Honda is home to *Solanum argenteum*, *S. jamaicense*, *S. aturense*, and *S. rudepannum*.

***Tithorea harmonia* (Cramer, 1777).** Photographs n° P.0009 and P.0132

Common name: Black-fronted Prestonian.

Forewing black, with extensive white spotting. Hind wing orange, with a narrow black margin.

Geographic range: Mexico to Brazil. The allied species, *Tithorea tarricina* Hewitson, 1857, was reported from Coiba Island (VIEJO *et al.*, 1997). Our male and female, representing subspecies *T. h. helicaon* Godman and Salvin, 1879, were captured in January and March 2002, on Canales de Tierra Island, and area 10 (Bahía Honda). The subspecies is found from Nicaragua to Panama.

Both sexes frequent flowers of *Psychotria*, *Hamelia* and *Chomelia* (Rubiaceae) (DeVRIES, 1987); but the caterpillar eats *Prestonia* (Apocynaceae) (HABER, 2003). Bahía Honda is home to *Prestonia quinquadrangularis*.

HELICONIINAE

***Dryadula phaetusa* (Linnaeus, 1758).** Photograph n^o P.0143

Common name: Banded Orange Heliconian.

Wings orange and black barred.

Geographic range: Mexico to Brazil. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male was captured in March 2002, in area 3 (Canales).

In flight *Dryadula* might be confused with *Danaus* (Danianae). Both are common visitors to *Asclepias* flowers. Caterpillar reported to eat *Passiflora talamacensis* (Passifloraceae) (DeVRIES, 1987). Bahía Honda has at least four species of *Passiflora*.

***Dryas iulia* (Fabricius, 1775).** Photograph n^o P.0004

Common names: Orange Long-wing, Julia, Julian Heliconian.

Wings long, orange, with thin, black margins, and often with a hint of a narrow, dark bar across the forewing.

Geographic range: Southern USA throughout the Neotropics. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male of this common heliconiine was collected in January 2002, in area 6 (Bahía Honda).

Adult heliconiines are distasteful to predators, and are famous among biologists because they are models for several mimicry complexes that include butterflies of other families, as well as certain day-flying moths. Caterpillar reported to eat various species of *Passiflora* (Passifloraceae) (DeVRIES, 1987).

Reared in Panama on *Passiflora biflora* (Aiello lot 1992-6) and *Passiflora coriacea* (Aiello lot 1979-44).

***Eueides aliphera* (Godart, 1819).** Photograph n° P.0113

Common name: Small Flambeau, Least Heliconian.

A small version of *Dryas iulia*, with the forewing bar more evident.

Geographic range: Mexico to Brazil. Our male was caught in March 2002, in Bahía Honda.

Adults are frequent visitors to red flowers, especially to those of *Cissus* and *Lantana* (DeVRIES, 1987). Reared in Panama as *Passiflora vitifolia* (Passifloraceae) (Aiello lots 1993-85 and 1994-19).

***Eueides vibilia* (Godart, 1819).** Photograph n° P.0005

Common name: Spotted Flambeau, Acting Heliconian.

Somewhat sexually dimorphic. Forewing black, with irregular, large, white spots. Hind wing orange, with black veins and margin. The male lacks the black veins.

Geographic range: Mexico to Brazil. Reported from Coiba Island (VIEJO *et al.*, 1997). Our female, representing subspecies *E. v. vialis* Stichel, 1903, was captured in January 2002, on Canales de Tierra Island. The subspecies is found from Guatemala to Panama.

Females mimic *Actinote* (DeVRIES, 1987). Caterpillar reported to eat *Passiflora pittieri* (Passifloraceae), a species present on Coiba Island and in Bahía Honda.

***Heliconius hewitsoni* Staudinger, 1875.** Photograph n° P.0003

Common name: Hewitson's Long-wing.

Forewing black, with a narrow, yellow and a narrow, white band. Hind wings black with a curved, white stripe, set in from the margin.

Geographic range: Costa Rica and Panama. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male was captured in January 2002, in area 2 (Bahía Honda).

The species can be confused easily with *Heliconius pachinus* Salvin, 1871, which belongs to the same Müllerian mimicry complex. Caterpillar reported to eat *Passiflora*

pittieri (Passifloraceae).

***Heliconius ismenius* Latreille, 1817.** Photograph n^o P.0006

Common name: Isthmian Longwing.

Forewing orange on the basal half, black with white spots on the apical half. Hind wing orange, with thin, black margin.

Geographic range: Mexico to Ecuador. Our male, representing subspecies *H. i. clarescens* Butler, 1875, was caught in January 2002, in area 2 (Bahía Honda). The subspecies is found in Costa Rica and Panama.

The adult is a co-mimic of *Melinaea* (Ithomiinae). Caterpillar reported to eat several species of *Passiflora* (Passifloraceae).

Reared in Panama on *Passiflora quadrangularis* (Aiello lot 1994-50).

***Heliconius melpomene* (Linnaeus, 1758).** Photograph n^o P.0002

Common name: Postman.

Forewing black, with red band. Hind wing black with yellow stripe.

Geographic range: Mexico to Brazil. Our male, representing subspecies *H. m. rosina* Boisduval, 1870, was captured in January 2002, in area 2 (Bahía Honda). The subspecies is found from Mexico to Panama. Another member of this genus, *Heliconius erato* (L., 1764), has been reported from Coiba Island (VIEJO *et al.*, 1997), but was not found in our study area.

Heliconius melpomene and *H. erato petiverana* Doubleday, 1847 are such similar co-mimics that subtle characters must be used to separate them. The pupae are easy to distinguish. The pupa of *H. melpomene* has rather short head scoli (horns) and that of *H. erato* has long ones.

Co-mimicry, genetics, hybridization, etc. in these two species are of special importance to our understanding of how adaptive radiation functions in *Heliconius* (JIGGINS, *et al.*, 2001a, 2001b; Mallet, *et al.* 1998; NIJHOUT, 1991; BROWN, 1981).

The caterpillar has been found on *Passiflora oerstedii* and *P. menispermifolia*.

Several species of *Passiflora* are found in Bahía Honda.

Reared in Panama on *Passiflora menispermifolia* (Aiello lot 1994-36) and *Passiflora*

platyloba (Aiello lot 1993-87).

NYMPHALINAE

***Adelpha basiloides* (Bates, 1865).** Photographs n° P.0021 and P.0070

Common name: Spot-celled Sister.

Wings dark brown, with orange spot near forewing apex, and with broad, white band beginning near center of forewing, and completely crossing hind wing; top of white band bent inward slightly.

Geographic range: Mexico to Panama. Our male and female were captured, the male in February 2002, on Canales de Tierra Island, the female in January 2002, in area 2 (Bahía Honda).

All caterpillar host plants, recorded so far for this species, belong to the family Rubiaceae, and include *Alibertia edulis*, *Amaioua corymbosa*, *Bertiera guianensis*, and *Ixora* spp. (AIELLO, 1984).

Bahía Honda has several members of the Rubiaceae, *Alibertia edulis*, *Faramea occidentalis* and *Ixora floribunda*.

Reared in Panama on *Alibertia edulis* (Aiello lots 1979-121, 1980-38, 1981-17, 1981-42, 1981-49, 1983-16, 1985-4, and 1997-36), *Amaioua corymbosa* (Aiello lots 1982-59, 1982-65, 1982-70, 1982-72, and 1983-42), *Bertiera guianensis* (Aiello lot 1982-73) and *Ixora* sp. (Aiello lot 2003-2) (all Rubiaceae).

***Adelpha cocala* (Cramer, 1780).** Photograph n° P.0008

Common name: Orange-washed Sister.

Wings dark brown, with orange band across forewing, and white band across hind wing.

Geographic range: Mexico to southern Brasil. Our male, representing subspecies *A. c. lorzae* (Boisduval, 1870), was captured in January 2002, in area 1 (Canales). The subspecies is found from Guatemala to Panama.

All caterpillar host plants, reliably recorded so far for this species, belong to the family Rubiaceae, and include *Calycophyllum candidissimum*, *Chomelia psilocarpa*, *Pentagonia macrophylla*, *Psychotria* sp., *Uncaria tomentosa*, and *Warscewiczia coccinea*. There are various Rubiaceae in Bahía Honda, including species belonging

to several of these genera.

Reared in Panama on *Calycophyllum candidissimum* (Aiello lot 1981-44), *Chomelia psilocarpa* (Aiello lot 1981-14), *Uncaria tomentosa* (Aiello lot 1981-54), and *Warscewiczia coccinea* Aiello lots 1982-66 and 1982-74) (all Rubiaceae).

***Adelpha cytherea* (Linnaeus, 1758).** Photograph n° P.0122

Common name: Smooth-banded Sister.

Wings dark brown, with very wide orange band across forewing and dovetailing with narrower white band that completely crosses hind wing.

Geographic range: Mexico to Argentina. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male, representing subspecies *A. c. marcia* Fruhstorfer, 1913, was captured in March 2002, in zone 11 (Canales). The subspecies is found from Mexico to central Panama.

Adults visit the flowers and fruits of *Cephaelis* (Rubiaceae), as well as the flowers of various Asteraceae (DeVRIES, 1987). Caterpillar apparently confined to eating *Sabicea* (Rubiaceae), at least two species of which are found in Bahía Honda.

Reared in Panama on *Sabicea panamensis* (Aiello lots 1983-3 and 1983-129) and *S. villosa* (Aiello lot 1982-26).

***Adelpha lycorias melanthe* (Bates, 1864).** Photograph n° P.0072

Common name: Rayed Sister.

Wings dark brown, with broad, oblique orange stripe across forewing.

Geographic range: Mexico to western Ecuador. Our male was collected in January 2002, in area 1 (Canales).

Caterpillar reported to eat various roadside species, belonging to various plant families, including *Cecropia* spp. (Cecropiaceae); *Trema micrantha* (Ulmaceae), and *Urera* sp. and *Myriocarpa* sp. (Urticaceae) (AIELLO, 1984; DeVRIES, 1987). The flora of Bahía Honda includes at least two species of *Cecropia*, as well as *Trema micrantha* and *Myriocarpa longipes*.

Reared in Panama on *Trema micrantha* (Ulmaceae) (Aiello lot 1983-8 and 1984-63).

***Anartia fatima* (Fabricius, 1773).** Photograph n° P.0083

Common name: Banded Peacock.

Brown, with yellow or white band crossing both wings; white spots forming poorly defined band across outer portion of forewing; and red dash in center of hind wing. The principal band varies from yellow (in freshly emerged individuals) to white (in older individuals) (AIELLO, pers. obs.). A color mutation, appearing at low frequencies, results in an orange hind wing dash, instead of red, in double recessive individuals (AIELLO and SILBERGLIED, 1978)

Geographic range: Southern Texas through Central America to eastern Panama. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male was captured in January 2002, in area 6 (Bahía Honda).

This well studied species is the most widespread and common butterfly in Panama, though it may disappear temporarily from extremely dry areas in late dry season (AIELLO, 1992; SILBERGLIED and AIELLO, 1979).

The caterpillar has been reported on common weedy herbs belonging to the Acanthaceae, most often on *Blechnum pyramidatum*. The others include *B. costaricense*, *Dicliptera unguiculata*, *Justicia* spp., and *Ruellia* spp. (SILBERGLIED and AIELLO, 1979). The flora of Bahía Honda includes all these plants, except for *Dicliptera*.

Rearing in Panama on *Blechnum pyramidatum* (Aiello lots 1977-79, 1978-40, 1978-52, 1987-73, and 1983-119).

***Catonephele nyctimus* (Westwood, 1850).** Photograph n° P.0088

Common name: Shoemaker.

Extremely sexually dimorphic. Male, Black, with broad, orange band across wings. Female, dark brown, with yellow markings forming 2 dotted stripes on forewing and 2 well-defined stripes on hind wing. Forewing apex squared off in both sexes.

Geographic range: Panama to north western Peru, and Guyana. Our male was captured in January 2002, in area 2 (Bahía Honda). A related species, *Catonephele numilia* (Cramer, [1775]) was reported from Coiba Island (VIEJO *et al.*, 1997).

This is a controversial species due to the difficulty in distinguishing it from *C. mexicana* Jenkins and de la Maza, 1985, with which it overlaps along the Costa Rica/Panama border (LAMAS and SMALL, 1992). Caterpillar reported to eat *Alchornea* spp. (Euphorbiaceae) (DeVRIES, 1987), two species of which are found in

Bahía Honda, *Alchornea costaricensis* and *A. grandis*.

Reared in Panama on *Dalechampia* (Aiello lots 1993-41 and 1993-54).

***Colobura dirce* (Linnaeus, 1758).** Photograph n° P.0022

Common name: Mosaic, Small Beauty.

Forewing brown, with wide, oblique, yellowish stripe on both surfaces. Hind wing faintly tailed, brown above, zebra-striped beneath.

Geographic range: Mexico to Argentina, and the West Indies. Our male was collected in January 2002, in Bahía Honda.

Adults are seen frequently on tree trunks, with their wings folded to reveal the zebra-pattern. The caterpillar host plant is *Cecropia* (Cecropiaceae). In Bahía Honda *Cecropia* is represented by two species.

Reared in Panama on *C. longipes* (Aiello lot 1980-56) and *C. peltata* (Aiello lot 1987-44).

***Ectima erycinoides* C. and R. Felder, 1867.** Photograph n° P.0120

Common name: Northern Crackerlet.

Small, brown, with oblique, broad, white band across forewing.

Geographic range: Guatemala to western Ecuador. Our male was captured in March 2002, in area 2 (Bahía Honda).

Adults rest on tree trunks, in open areas, with the wings spread flat against the bark, just as *Hamadryas* does. In fact, the two are often found together, and their caterpillars eat the same plants, members of the genus *Dalechampia* (Euphorbiaceae) (DeVRIES, 1987). *Dalechampia cissifolia* subsp. *panamensis*, is found in Bahía Honda.

This species is labelled in DeVRIES (1987) as *E. rectifascia* Butler and Druce, 1874 (LAMAS and SMALL, 1992).

***Eunica alpais* (Godart, 1824).** Photograph n° P.0093

Common name: Shining Purplewing.

Sexually dimorphic. Male dark blue and black, with broad, bright blue hind wing margin. Female, brown, with white spots forming a broken band on the forewing.

Geographic range: Mexico to Panama, to French Guiana and the Amazon. Our female, representing subspecies *E. a. excelsa* Godman and Salvin, 1877, was captured in January 2002, in area 5 (Bahía Honda). The subspecies is found from Mexico to western Panama.

The caterpillar host plant is not known, though, judging from other species of *Eunica*, it is mostly likely associated with the Euphorbiaceae.

***Hamadryas amphinome* (Linnaeus, 1763).** Photograph n° P.0141

Common name: Red Cracker.

Wings above, brownish black, finely patterned with powder blue crescents, wedges, and dots, and with broad, oblique, irregular, white band across forewing. Wings below, black, with oblique, white band across forewing; mostly red on hindwing.

Geographic range: Mexico to Argentina, and Cuba. Our male, representing subspecies *H. a. mexicana* (Lucas, 1853), was captured in March 2002, in area 2 (Bahía Honda). The subspecies is found from Mexico to Colombia (Cf. LAMAS and SMALL, 1992; MONGE-NÁJERA, 1992; DeVRIES, 1987).

Caterpillar reported to eat a vine, *Dalechampia scandens* (Euphorbiaceae) (DeVRIES, 1987), a species present in Bahía Honda.

Reared in Panama on *D. cissifolia* Poepp. (Aiello lots 1984-30 and 1983-106).

***Hamadryas februa* (Hübner, 1823).** Photograph n° p.0144

Common name: Gray Cracker.

Cryptically patterned in white, gray, bluish, and rust-color, with eye-spots paralleling wing margins. Below, white, with black rust-color markings. Both sides of hind wing with rust and black crescent within eyespots.

Geographic range: Southern Texas to Argentina. Our male, representing subspecies *H. f. ferentina* (Godart, 1824), was captured in March 2002, in area 3 (Canales). The subspecies is found from southern Texas to the Guianas and to the Amazon River.

Hamadryas species are commonly called "Cracker," because they produce a loud, crackling sound, presumably with their wings, though the precise mechanism has not

yet been discovered. Adult males rest head down on tree trunks, with the wings spread flat against the bark, often in the company of *Ectima*, which has a similar stance.

Caterpillar reported to eat *Dalechampia scandens* (Euphorbiaceae) (DeVRIES, 1987). Reared Panama on *D. cissifolia* Poepp. (Aiello lot 1983-59).

***Hamadryas feronia* (Linnaeus, 1758).** Photographs n° P.0011 and P.0079

Common name: Variable Cracker.

Similar to *H. februa*, but darker, and with no crescent within hind wing eyespots.

Geographic range: Southern Texas to Argentina. Our two males, representing subspecies *Hamadryas feronia farinulenta* (Fruhstorfer, 1916), were captured in February 2002, in area 3 (Canales), and in January 2002, in area 2 (Bahía Honda). The subspecies is found from Southern Texas to north-western Peru and northern Venezuela, and in Trinidad.

Caterpillar reported to eat *Dalechampia* (Euphorbiaceae) (DeVRIES, 1987).

Reared in Panama on *D. cissifolia* Poepp. (Aiello lots 1985-63, and 1983-69).

***Hamadryas laodamia* (Cramer, 1777).** Photographs n° P.0012 (female) and P.0133 (male)

Common name: Black Cracker.

Sexually dimorphic. Velvet black, with powder blue spots on upper surface, and with red spots on hind wing margins on under surface. Female with oblique, sharply defined, white band across forewing, on both surfaces.

Geographic range: Mexico to Argentina. Our male and female, representing subspecies *H. l. sauritis* (Fruhstorfer, 1916) were captured in January and March 2002, in area 2 (Bahía Honda). The subspecies is found from Mexico to northern Venezuela, and in Trinidad.

This species may be encountered in the literature as *H. arethusa*.

Caterpillar reported to eat *Dalechampia triphylla* (Euphorbiaceae) (DeVRIES, 1987).

***Historis odius* (Fabricius, 1775).** Photograph n° P.0085

Common name: Orion Cecropian.

Wings dark brown, with extensive orange on forewing base and extending toward apex, and with white spot along forewing costal (leading) margin, near apex.

Geographic range: Mexico to Argentina, and into the West Indies. Our male was captured in January 2002, in area 6 (Bahía Honda).

Caterpillar reported to eat various species of *Cecropia* (Cecropiaceae) (DeVRIES, 1987; MUYSHONDT and MUYSHONDT, 1979), several species of which are found in Bahía Honda.

***Nica flavilla* (Godart, 1824).** Photograph n° P.0013

Common name: Little Banner.

Small, dirty orange butterfly, with brown forewing apices that have an indistinct orange spot.

Geographic range: Mexico to Argentina. Our female, representing subspecies *N. f. canthara* Doubleday, 1849., was captured in January 2002, in area 2 (Bahía Honda).

In Costa Rica the caterpillars are found on *Cardiospermum*, *Paullinia*, *Serjania* (Sapindaceae).

Reared in Panama on *S. mexicana* (Aiello lot 1983-81), *S. paucidentata* (Aiello lot 1983-55), and *S. trachygona* (Aiello lot 1983-81). Bahía Honda is home to at least 3 species of *Paullinia* and at least 4 of *Serjania*.

***Siproeta stelenes* (Linnaeus, 1758).** Photograph n° P.0084

Common name: Malachite.

Mimetic of the heliconiine, *Philathria dido* (Linnaeus, 1763). Lime-green with bold, brown markings. Wings with undulate margins, and hind wings with suggestion of a tail.

Geographic range: Southern United States to Argentina, and into West Indies. Our female, representing subspecies *S. s. biplagiata* (Fruhstorfer, 1907), was captured in January 2002, in area 2 (Bahía Honda). The subspecies is found from Mexico to northern Colombia.

Caterpillar reported to eat various Acanthaceae, including *Blechnum*, *Justicia*, and

Ruellia (DeVRIES, 1987), all of which are present in Bahía Honda.

Reared in Panama on *B. costaricense* (Aiello lot 1979-108) and *B. pyramidatum* (Aiello lots 1978-77 1998-93).

MELITAEINAE

***Castilia ofella* (Hewitson, 1864).** Photograph n° P.0121

Common name: none.

A small dusky black butterfly, with a broad white band beginning at the center of the forewing, and completely crossing the hind wing.

Geographic range: Guatemala to Colombia, Venezuela, and Trinidad. Our male was collected in March 2002, in area 11 (Canales).

Males tend to visit damp sands (see comments on mudpuddling in introduction), and both sexes visit flowers of various Asteraceae (DeVRIES, 1987). The caterpillar host plants are species of *Justicia* and *Aphelandra* (Acanthaceae). Bahía Honda has *Justicia isthmensis* and *Aphelandra scabra*.

***Chlosyne poecile* (Felder, 1867).** Photograph n° P.0123

Common name: Spotted Chlosyne.

Wings black, with the basal portions strongly spotted with yellow, and with a red spot at the hind wing anal angle.

Geographic range: Costa Rica to Venezuela. Our male was captured in March 2002, in area 1 (Canales).

In Costa Rica this is a rare species.

Reared in Panama, on *Aphelandra scabra* (Aiello lot 1993-75) and *Justicia comata* (Aiello lot 1985-95) (both Acanthaceae).

***Janatella leucodesma* (C. and R. Felder, 1861).** Photograph n° P.0112

Common name: White-banded Janatella.

Similar to *Castilia ofella*, but with more dominant white.

Geographic range: Nicaragua to Venezuela and Trinidad. Our male was collected in March 2002, in area 2 (Bahía Honda).

***Thessalia ezra* (Hewitson, 1864).** Photograph n° P.0014

Common name: none.

Wings yellow, with brown veins, and broad brown margins spotted with red.

Geographic range: Costa Rica and Panama. Our male was captured in February 2002, in area 3 (Canales). A rare species (DeVRIES, 1987).

Adults visit flowers of the family Asteraceae. The caterpillar and its host plant are unknown.

BRASSOLINAE

***Caligo atreus* (Kollar, 1849).** Photograph n° P.0043

Common name: Regal Owl-Butterfly.

Wings above, dark, with a bold bluish white dash on the forewing, and a broad yellow stripe on the hind wings. Below, the hind wings bear huge eye-spots, which are thought to resemble the eyes of an owl.

Geographic range: Mexico to Peru. Our male, representing subspecies *C. a. dionysos* Fruhstorfer, 1912, was collected in January 2002, in area 5 (Bahía Honda). The subspecies is found in Costa Rica and Panama.

This spectacular species and the next are among the famous Owl Butterflies often pictured up-side-down, with their wings spread to display the huge eye-spots on the undersurface of the hind wings. In truth, Owl Butterflies never assume that pose. They rest camouflaged, on tree trunks or in undergrowth, with the wings folded.

The large caterpillar can become a plague in banana plantations (*Musa*, Musaceae). They also eat *Heliconia* spp., of the same plant family, and various plants of the Cyclanthaceae (DeVRIES, 1987). Bahía Honda is home to at least 3 genera of Cyclanthaceae, *Asplundia*, *Carludovica*, and *Cyclanthus*, as well as a hybrid and 6 species of *Heliconia*.

***Caligo memnon* (C. and R. Felder, 1866).** Photograph n° P.0067

Common name: Memnon Owl-Butterfly.

Wings dusky brown to black, with extensive white on the basal two thirds of the forewing, and powder blue at the base of the hind wing. Below, the hind wings bear the large eye-spots typical of the genus.

Geographic range: Mexico to the Amazon basin. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male, representing subspecies *C. m. memnon* (C. & R. Felder, 1866), was captured in January 2002, at the lights of the "Amazon Express". The subspecies is limited to Central America.

The large caterpillar is a banana (*Musa*, Musaceae) plantation pest. It also eats *Heliconia* (Musaceae) (DeVRIES, 1987).

Reared in Panama on *Canna indica* (Cannaceae) (Aiello 1985-57).

SATYRINAE

***Cissia hesione* Sulzer, 1776.** Photograph n^o P.0015

Common name: White Satyr.

Wings with 3 brown and 2 white bands on both surfaces, but upper surface obscured by white wash. Margin of hind wing undersurface, with 1 small eye-spot, and 4 large, yellow-rimmed eye-spots (2 brown, flanked by 2 black, the black ones often with tiny, central, white dot).

Geographic range: Mexico to Ecuador. Our male was captured in February 2002, in area 2 (Bahía Honda).

Species of the genus *Cissia* are difficult to identify, and the most useful characters are found on the undersurface of the wings.

Caterpillar reported to eat *Eleusine* (Poaceae) (DeVRIES, 1987). Adults visit the decomposing fruits of *Eugenia* (Myrtaceae).

***Taygetis andromeda* (Cramer, 1779).** Photographs n^o P.0135 and P.0138

Common name: Andromeda Ur-Satyr.

Wings above, brown, with undulate hind wing margins. Both wings below, sharply

divided into dark apical portion and darker basal portion, though forewing apical area may have yellowish cast. antemedial line broad, diffuse, and tapering at both ends on each wing.

Geographic range: Mexico to South America. Reported from Coiba Island (VIEJO *et al.*, 1997). Our male was caught in March 2002, in area 2 (Bahía Honda).

As with *Cissia*, the characters most useful for distinguishing the species of *Taygetis* are found on the undersurface of the wings.

Caterpillars reported to eat species of *Acroceras*, *Olyra*, and *Panicum* (Poaceae). The flora of Bahía Honda includes species of the genus *Panicum*.

BOMBYCOIDEA

APATELODIDAE

EPIINAE

***Quentalia ephonia* (Stoll, 1791).** Photograph n° M.0048

Common name: None.

Reddish brown, frosted with gray, and with several dark brown spots along costal (leading) margin. Forewing with slight concavity below apex.

Geographic range: Central and South America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Quentalia amisena (Druce, 1890) was reared in Panama on *Sorocea affinis* (Aiello 1982-60) and *Trophis racemosa* (Aiello 1981-48) (Moraceae).

MIMALLONIDAE

LACOSOMINAE

***Druentica als*a (Schaus, 1910).** Photograph n° M.0154

Common name: None.

Brown, with straight, narrow, darker brown band across both wings, and with small, dark brown spot towards forewing apex.

Geographic range: Central and South America. Our moth was captured in March

2003, at the lights of the boat "Amazon Express."

Druentica inscita (Schaus, 1890) has been reared in Panama on *Clidemia hirta*, *Conostegia speciosa*, *Miconia lacera*, *Ossaesa quinquenervia*, and *Tibouchina longifolia* (all Melastomataceae) (Aiello lot 1987-28).

LASIOCAMPIDAE

MACROMPHALIINAE

***Artace cribraria* (Ljungh, 1825).** Photograph n^o M.0046

Common name: Dot-lined white.

White; forewing veins with black spots.

Geographic range: Southern United States into Brazil and Ecuador. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

In temperate areas, the caterpillar prefers *Quercus* (Oak) (COVELL, 1984).

***Euglyphis fibra* (Schaus, 1890) male.** Photograph n^o M.0049

Common name: None.

Sexually dimorphic. Male gray (darker in apical half of forewing and rusty near base of hind wing), with brown veins, and with thin, brown band across both wings; body densely setose ("hairy"). Female larger, grayish brown, with bristly abdomen, and quite different in appearance from male.

Geographic range: Mexico to Brazil. Our male was captured in January 2002, at the lights of the boat "Amazon Express."

Though harmless, *E. fibra* females resemble female *Hylesia* moths (Saturniidae: Hemileucinae), which bear irritating setae ("hairs") on their abdomens. And, when disturbed, like *Hylesia*, they curl the abdomen under and raise the wings in a warning display.

Reared in Panama on three members of the plant family Lauraceae, *Persea americana* (Avocado) (Aiello lots 1988-20, 1997-4), *Phoebe cinnamomifolia* (Aiello lot 1998-39), and *Nectandra cuspidata* (Wright 98-28). At least 7 other species of *Euglyphis* have been reared in Panama, mostly on Lauraceae.

OXYTENIDAE

***Oxytenis modestia* (Cramer, 1780).** Photograph n° M.0073

Common name: none.

Pearly gray above, with thin, brown line from tip of forewing to center of hind wing inside margin. Undersurface, yellowish, with same thin, brown line across forewing, but not on hindwing. Male forewing with concave margin; female with convex margin.

Geographic range: Guatemala to northern South America. Our male was collected in January 2002, at the lights of the boat, "Amazon Express."

A small family, difficult to classify (JORDAN, 1925; AIELLO and BALCAZAR, 1997), the Oxytenidae comprise 3 genera, *Asthenidia*, *Homoeopteryx*, and *Oxytenis*, all of which are found in Panama.

Thorax of final stage caterpillar has triangular, lateral flanges that bear "false eyes," which can be "opened" and "closed" (AIELLO and BALCAZAR, 1997).

Reared in Panama on two members of the Rubiaceae, *Alibertia edulis* (Aiello lots 1980-9, 1980-46, 1981-43, and 1981-65) and *Genipa americana* (Aiello lots 1978-90, 1978-91, 1984-55, 1985-126, and 1987-52).

The flora of Bahía Honda includes both *Alibertia edulis* and *Genipa americana*.

SATURNIIDAE

CERATOCAMPINAE

***Syssphinx molina* (Cramer, 1780).** Photograph n° M.0060

Common name: none.

Forewing beige, with thin, brown line separating slightly darker outer third from basal two-thirds. Hind wing with dark pink line separating beige outer third from basal pink two-thirds, and with black spot in center. Undersurfaces of wings, reverse of uppersurface, *i.e.*, forewing pink with black spot on basal two-thirds. Male forewing outer margin slightly excavated.

Geographic range: Mexico to Argentina. Our male was captured in January 2002, at the lights of the boat, "Amazon Express."

Caterpillar reported to eat many Fabaceae: *Acacia* spp., *Albizia*, *Cassia*, *Gleditsia*, *Mimosa*, *Pithecellobium*, and *Robinia* (all Fabaceae) (STONE, 1991). Many of these genera can be found in Bahía Honda.

HEMILEUCINAE

***Automeris hamata* Schaus, 1906.** Photograph n^o M.0069

Common name: none.

Forewing beige, with brown lines dividing outer and basal thirds from darker central area. Hind wing dark pink, with fine, black and yellow outer crescent, and with huge brown eye-spot, framed with black and rimmed with yellow, and with tiny, white, central dot.

Geographic range: Mexico to Bolivia. Our female was captured in January 2002, at the lights of the boat, "Amazon Express."

Caterpillars highly polyphagous. Reported on at least 56 plant genera of 27 families (24 dicots, 2 monocots, 1 gymnosperm). Among these, the Fabaceae dominate.

***Automeris metzli* (Salle, 1853).** Photograph n^o M.0078

Common name: none.

Among the largest *Automeris*. Forewing pale beige, with thin, dark line dividing paler, outer two-fifth of wing from darker basal portion; antemedial line irregular and broken. Hind wings with huge, black eye-spot that is framed by thin black and wider pink crescent lines, and has a jagged white line in center.

Geographic range: Mexico to northern South America. Our male was captured in January 2002, at the lights of the boat, "Amazon Express."

Caterpillars polyphagous; reported on *Erythrina* (Fabaceae) and *Quercus* (Fagaceae), *Platanus* (Platanaceae), and *Crataegus* and *Pyrus* (Rosaceae) (STONE, 1991).

***Automeris zurobara* Druce, 1886.** Photograph n^o M.0064

Common name: none.

Forewing beige, with pale line dividing the outer third of wing from slightly darker

basal portion, and with large brown spot nearly in center of wing. Hind wing pinkish, with huge, pale, black-bordered eye-spot that has a black center with a white dot.

Geographic range: Mexico to Venezuela. Our male was captured in January 2002, at the lights of the boat, "Amazon Express."

Caterpillars have been reared on *Inga vera* (Fabaceae) in the laboratory (V.R. GRACIA, *in litt.*). In Bahía Honda there are 10 species of *Inga*.

SATURNIINAE

***Rothschildia erycina* (Shaw, 1796).** Photograph n^o M.0086

Common name: none.

Large pink and brown moth with elongated forewing that has huge, apical, brown oval. Both wings with large, clear (devoid of scales) triangle. A similar species, *R. lebeau*, is slightly larger, has less elongated forewing, and lacks the large apical oval.

Geographic range: Mexico to Paraguay, always below 500m (V.R. GRACIA, *in litt.*).

Our female, possibly representing subspecies *nigrescens*, was captured in January 2002, at the lights of the boat, "Amazon Express".

Caterpillar reported to eat *Exostema mexicanum* and *Coutarea hexandra* (Rubiaceae) *Ligustrum* (Oleaceae), and *Ailanthus* (Simaroubaceae) (STONE, 1991). Bahía Honda has *Coutarea hexandra*.

Reared in Panama on *Coutarea hexandra* (Aiello lot 1985-20).

SPHINGOIDEA

SPHINGIDAE

SPHINGINAE

***Adhemarius gannascus* (Stoll, in Cramer, 1790).** Photograph n^o M.0151

Common name: none.

Forewing beige, with 2 brown spots. Hind wing pink, with 3 curved, black bands.

Geographic range: Mexico to Brasil, Cuba, Jamaica. Our male was captured in February 2002, at the lights of the boat, "Amazon Express."

Caterpillar reported to eat plants of the family Lauraceae, *Nectandra*, *Ocotea*, and *Persea*. Bahía Honda is home to several species of *Ocotea*, *Persea americana*, and four species of *Nectandra*.

MACROGLOSSINAE

***Eumorpha vitis* (Linnaeus, 1758).** Photograph n° M.0077

Common name: Vine Sphinx.

Forewing dark brown, with complex pattern of intersecting gray lines and curves. Hind wing black, with pink spot and bluish gray band.

Geographic range: Widely distributed, from southern United States (Arizona through Florida) to Paraguay, Argentina, Uruguay, West Indies. Our male was captured in February 2002, at the lights of the boat, "Amazon Express."

Caterpillar reported to eat *Cissus* spp. and *Vitis* spp. (Vitidaceae), as well as *Ludwigia* (as *Jussieua*) *hirta* (Onagraceae) (Moss, 1912, 1920), and it can occasionally harm plantations of *Vitis*. In Bahía Honda three species of *Cissus* have been listed.

Reared in Panama on *Ludwigia octovalvis* (Onagraceae) (Aiello lot 1991-29).

***Eupyrrhoglossum sagra* (Poey, 1832).** Photograph n° M.0076

Common name: Sagra Sphinx.

Body short and stocky. Forewing rich, dark brown, with grayish markings. Hind wing dark brown, with thin, yellow band and yellow margin.

Geographic range: Mexico to Paraguay, Cuba, strays into Florida. Our female was collected in February 2002, at the lights of the boat, "Amazon Express."

***Sabicea aspera* (Moss, 1920)**

Caterpillar reported on Rubiaceae: *Chomelia spinosa*, *Guettarda macrosperma*, *Sabicea aspera*, and *S. villosa* (Moss, 1920; WILLIAM OEHLKE, *in litt.*). The flora of Bahía Honda includes *Guettarda foliacea* and *Sabicea villosa*.

***Pachylia darceta* Druce, 1881.** Photograph n° M.0150

Common name: none.

Wings pale brown; forewing with a single, darker brown, central spot, and suggestion of a thin basal bar.

Geographic range: Panama to Amazonas, Bolivia. Our male was collected in March 2002, at the lights of the boat, "Amazon Express."

The type specimen for this species was collected in Chiriquí, Panamá, by Staudinger (ROTHSCHILD and JORDAN, 1903).

Caterpillar reported on *Brosimum alicastrum* and *Pseudolmedia spuria* (Moraceae) (V.G. GRACIA, *in litt.*). *Brosimum alicastrum* is found in Bahía Honda.

***Xylophanes titana* (Druce, 1878).** Photograph n° M.0152

Common name: none.

Forewing finely brown and beige striped. Hind wing black, with broken, beige submarginal stripe.

Geographic range: Mexico to southern Brasil. Our female was collected in February 2002, at the lights of the boat, "Amazon Express."

The type specimen for this species was collected in Panamá by Druce (ROTHSCHILD and JORDAN, 1903).

Caterpillar reported on *Manettia reclinata* and other Rubiaceae (V.R. GRACIA, *in litt.*; Moss, 1912), which is found in Bahía Honda.

NOCTUOIDEA

NOTODONTIDAE

***Antaea juturna* (Cramer, 1777).** Photograph n° M.0062

Common name: None.

Forewing brown, long, with excavated anal angle, and with 5 complete (and several incomplete), very thin bands that have a raised appearance, because they are dark brown on one side and pale on other. Hind wing darker brown, and much smaller and rounder.

Geographic range: Central and South America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Wings tented at rest, the "raised" pattern giving appearance of a brown, dry leaf.

***Bardaxima lucilinea* Walker, 1858.** Photographs n^o M.0027 and M.0095

Common name: None.

Forewing brown, with scalloped margins and a sharply-defined black stripe that is interrupted by a white dash. Hind wing rounder, brown, with yellow margin.

Geographic range: Central and South America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

When resting with wings tented and antennae swept back and hidden beneath the wings, this moths resembles a rotting twig, complete with irregularly broken end.

Reared in Panama on *Byrsonima crassifolia* (Malpigiaceae) (Aiello lot 1989-23 and 1991-53).

***Caledema plusia* (Felder, 1874).** Photograph n^o M.0050

Common name: None.

Forewing brown, with distinctive markings: a group of fine, white lines that form a long triangle from wing base to costal (leading) margin, a wide, white stripe joining the triangle to another group of fine, white lines that curve along the outer margin. Hind wing brown.

Geographic range: Central and South America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Rests with wings tented, as do many notodontids, and resembles dry leaves.

***Hapigia curvilinea* Schaus, 1904.** Photograph n^o M.0065

Common name: None.

Forewing rich reddish brown, long, with excavation near base of inner (trailing) margin, and with group of 3 small, white spots near center. Hind wing pale gray.

Geographic range: Central and South America. Our moth was captured in January

2002, at the lights of the boat "Amazon Express."

Rests with wings tented, as do many notodontids, and resembles dry leaves.

***Pentobesa* sp.** [*xylinoides* (Walker, 1866) or *sinistra* Weller, 1991]. Photograph n^o M.0102

Common name: None.

Non-descript brown moth, with long forewing; smaller, paler, more rounded hind wings; and very long body. Tegulae ("shoulder" flaps, located on thorax, near forewing base) long, white.

Geographic range: *xylinoides*, Central and South America; *sinistra*, Central America, Amazonia. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Genitalic dissection is necessary to determine which of two species our specimen belongs to, *P. xylinoides* (Walker, 1866) or *P. sinistra* Weller, 1991.

***Rhuda focula* (Stoll, 1782).** Photograph n^o M.0080

Common name: None.

Attractive, for a notodontid. Forewing dark brown, with huge silvery gray crescent that occupies most of the hind portion of the wing, from the basal fourth of the costal (leading) margin, across the wing base, along the inner (trailing) and outer margins to the apex. Hind wing paler brown, with indistinct, central, yellowish spot.

Geographic range: Honduras to Brasil. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Rhuda focula (Stoll, 1782) has been reared in Panama on *Conostegia speciosa* (Aiello lot 1994-53) and *Miconia impetiolearis* (Aiello 1996-3). The caterpillar is gaudy chartreuse and pink, with a long, soft spine sticking straight up on abdominal segment 2.

***Rosema demorsa* Felder, 1874.** Photograph n^o M.0045

Common name: None.

Beautiful, for a notodontid. Forewing green, with thin, brown costal (leading) and outer margins, and with excavation below apex. Hind wing orangish yellow. Body, with

thorax green, and abdomen orangish brown.

Geographic range: Central America to Amazonia. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

***Salluca pistacina* Schaus, 1901.** Photograph n^o M.0117

Common name: None.

Forewing cryptically patterned brown. Hind wing, plain, paler brown.

Geographic range: Mexico through Central America. Our moth was captured in March 2003, at the lights of the boat "Amazon Express."

Another species, *S. amathynta* Dyar, has been reared in Panama on *Guettarda odorata* (Rubiaceae) (Aiello lot 1989-14).

ARCTIIDAE

PERICOPINAE

***Dysschema jansonis* (Butler, 1870).** Photograph n^o M.0051

Common name: Common Cha-cha caterpillar moth.

Strongly sexually dimorphic. Males occur in two color morphs, one white, the other yellow.

Male forewing dark gray, with pale triangle at base, and 2 broad, pale bands. Male hind wing black, with a large white (or large yellow) marking occupying all but the marginal third, and with a tiny pink spot at the anal angle. Male body above, black, with powder blue spots, and an apical brush of golden yellow. Male body below, white.

Female forewing black, with 2 broad, but faint bands, corresponding to those of the male. Female hind wing black, with a large, irregular pink marking, corresponding to an enlarged version of the male's tiny pink spot, and with a round, yellow spot, corresponding to the apical portion of the male's large white or yellow marking.

Female body black.

Geographic range: Costa Rica and Panama. Our male, the white morph, was captured in February 2002, at the lights of the boat "Amazon Express."

Both male color morphs can occur in the same brood (AIELLO and BROWN, 1988).

Females are mimics of the distasteful females of *Parides* (Papilionidae), and males are mimics of another distasteful group of butterflies, the clear-winged species of Nymphalidae: Ithomiinae.

Reared in Panama on *Lepidaploa canescens* (Aiello lots 1977-60, 1977-74, 1979-54, and 1980-29), *Lycoseris triplinervia* (Aiello lot 1998-64), *Mikania micrantha* (Aiello lot 2001-43), *Spiracantha cornifolia* (Aiello lot 1982-62), and *Vernonanthura patens* (Aiello lots 1987-70, 1988-14, 1992-67, and 1992-75) (all Asteraceae).

***Hyalurga subnormalis* Dyar, 1914.** Photographs n° M.0040 (male) and M.0124 (female)

Common name: None.

Slightly sexually dimorphic. Male, white, with black veins, and forewing with bluish and orangish costal (leading) margin. The female is a "smoky" version of the male.

Geographic range: Costa Rica and Panama. Our moths were captured in January 2002, at the lights of the boat "Amazon Express," and in March, in Area 2, Bahía Honda.

***Hyalurga urioides* Schaus, 1910.** Photograph n° M.0039

Common name: None.

Forewing clear, with black veins, and with orange and black border, all around. Hind wing clear to whitish, with outer margin orange and black-bordered.

Geographic range: Costa Rica and Panama. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

ARCTIINAE

***Ammalo helops* (Cramer, 1775).** Photograph n° M.0082

Common name: Fig caterpillar moth.

Forewing dirty orangish brown. Hind wing pale orange. Body banded with black and orange.

Geographic range: Mexico to Argentina. Our moth was captured in February 2002, at the lights of the boat "Amazon Express."

The caterpillars of this moth are well-known as defoliators of fig trees (*Ficus* spp.). They are bristly black, with red heads, and when resting between feeding bouts, or when molting, they form huge black mats on the trunks of their host trees.

Reared in Panama on *Ficus insipida* (Aiello lot 1990-39) and *Ficus yoponensis* (Aiello lot 1978-62) (Moraceae), and *Forsteronia spicata* (Apocynaceae) (Aiello lot 1990-30).

***Scaptius sanguistrigatus* (Dognin, 1910).** Photograph n° M.0037

Common name: None.

Slightly sexually dimorphic. Male forewing yellow apically and reddish brown basally, with sparse, fine, red markings. Male hind wing yellow, squared-off, smaller than forewing. Thorax yellow, with brown markings; abdomen red. Female like male, but larger, and with dark brown, hind wing that is less squared-off.

Geographic range: Central America to Amazons. Our male was captured in February 2002, at the lights of the boat "Amazon Express."

NOCTUIDAE

CATOCALINAE

***Epitausa rubripuncta* (Guenée, 1852).** Photograph n° M.0126

Common name: None.

Wings brown, with small black spot in center of forewing, and with darker brown stripe from forewing apex to middle of hind wing inner (trailing) margin.

Geographic range: Central and South America. Our moth was captured in March 2003, in Area 5, Bahía Honda.

Rests with wings spread and superficially resembles *Oxytenis modestia* (Photograph n° 0073).

***Gorgone ortilia* (Stoll, 1781).** Photograph n° M.0081

Common name: None.

Reminiscent of *Epitausa rubripuncta* (Photograph n° M.0126), but darker brown, with stripe less pronounced, and with silver blotch in place of black spot.

Geographic range: Central and South America. Our moth was captured in February 2002, at the lights of the boat "Amazon Express."

***Helia vitriluna* (Guenée, 1852).** Photograph n° M.0044

Common name: None.

Small moth, with cryptically patterned brown wings, with broad, black curved, band across hind wing.

Geographic range: Central and South America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

***Ophisma aeolida* (Druce, 1890).** Photograph n° M.0052

Common name: None.

Dark brown. Forewing paler brown in the basal half, and with large, pale crescent along forewing outer margin.

Geographic range: Central and South America. Our moth was captured in February 2002, at the lights of the boat "Amazon Express."

OPHIDERINAE

***Letis buteo* Guenée, 1852.** Photograph n° M.0028

Common name: None.

Cryptically patterned in black, browns, and gray. Fairly large, with a wingspan of 10-12 cm. Rests with the wings spread flat.

Geographic range: Mexico through Brasil. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

This is among the larger noctuids, though not as large as the similarly patterned "Black Witch," *Ascalapha odorata* (Linnaeus, 1758), which has a wing span of up to 15 cm.

***Diphthera festiva* (Fabricius, 1775).** Photograph n° M.0054

Common name: Hieroglyphic moth.

Among the most attractive noctuids. Forewing cream or yellowish, with dark blue lines, 3 bands of small, dark blue spots, and with a blue triangle near the base of the costal (leading) margin. Hind wings dark gray, bordered with black and yellow.

Geographic range: Tropical America. Our moth was captured in January 2002, at the lights of the boat "Amazon Express."

Reported to eat Pecan and other trees, as well as sweet potato, in eastern North America (COVELL, 1984).

AMPHIPYRINAE

***Argyrosticta meres* (Druce, 1903).** Photograph n^o M.0116

Common name: None.

Forewing brown, with reticulate pattern of darker brown lines and gray spots. Hind wing yellow, with broad, brown margin.

Geographic range: Central and South America. Our moth was captured in March 2003, at the lights of the boat "Amazon Express."

Discussion

Few conclusions can be drawn about the lepidopteran fauna of Bahía Honda and Canales de Tierra Island based solely on the few species and specimens collected during this study. It is safe to speculate, however, that the two sites have similar insect faunas, given that they are only 400m apart and are known to have comparable floras (CASTROVIEJO and IBÁÑEZ, chapter __ in this book). As well, we can predict that further collecting will yield many more species, including members of other nymphalid subfamilies (Apaturinae, Charaxinae, Danainae, and Morphinae), as well as numerous species of the families Lycaenidae and Riodinidae. We know, for example, that *Machaerium* and *Pterocarpus* (Fabaceae: Papilionoideae), the larval food plants for the iridescent blue butterfly *Morpho* (Nymphalidae), are present in the Bahia Honda flora. Most of all, we can expect to encounter many more "microlepidoptera," which represent at least 80 families in our area, yet which account for only 8 families in our study.

And, we can make a few comments based upon information from other studies. For example, though the lepidopteran fauna of Costa Rica is much better known than that of Panama, we do know that the two countries have very similar species

compositions for at least three butterfly families, Papilionidae, Pieridae, and Nymphalidae. These 3 butterfly families are represented in Costa Rica by about 543 species (DeVRIES, 1987), and in Panama by about 550 species (SMALL, unpublished list; DELGADO, unpublished list).

Based on the facts that Mexico is the northern-most limit for most species, and that ranges of all but 18 species extend into South America, we can say that the Panamanian lepidopteran fauna is largely tropical in origin. The same conclusion was reached for insects in general by KIMSEY (1992).

A more detailed examination reveals that the geographic ranges of only 8 species on our list extend into the Southern United States, and, of those, only 2, *Atteva pustulella* (Yponomeutidae) and *Eurema दौर* (Pieridae), extend into the northeastern states. In fact, *Atteva pustulella* was, until recently, confined to the tropics, and expanded its range only after an exotic member of its food plant family was introduced to the United States, from China.

Most of the moth species collected during this study tend to have large geographic ranges, while a great many of the butterflies either have smaller distributions, or are represented in Panama by a subspecies. Is the isthmus a more open corridor for moths than for butterflies? And, if so why? The answers to these and other questions concerning geographic distributions of Panamanian Lepidoptera still elude us.

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List of larval host plants

We provide an outline of the plant families that provide larva hosts for the Lepidoptera covered in this chapter. The outline follows DAHLGREN (1983, 1989), and the associated lepdopteran genera are listed under their larval host plant families. According to the DAHLGREN scheme, the flowering plants form the Class Magnoliopsida (=Angiospermae, which is divided into two subclasses the Magnoliidae (=Dicotyledoneae) and the Liliidae (=Monocotyledoneae). The system comprises 373 dicot families (in 25 superorders and 87 Orders) and 92 monocot families (in 8 superorders and 25 Orders). Of these, the Bahía Honda Lepidoptera, collected so far, utilize 37 dicot families (in 13 superorders and 25 orders), and 6 monocot families (in 3 superorders and 4 orders). The taxa are numbered according to their position in the complete DAHLGREN list.

CLASS MAGNOLIOPSIDA (= ANGIOSPERMAE)

Subclass Magnoliidae (=Dicotyledoneae)

- 1. Magnoliiflorae
 - 2. Aristolochiales
 - 6. Aristolochiaceae
 - Parides* (Papilionidae)
 - 9. Laurales
 - 22. Lauraceae
 - Egylyphis* (Lasiocampidae)
 - Adhemarius* (Sphingidae)
- 2. Nymphaeiflorae
 - 11. Piperales
 - 25. Piperaceae
 - Epimecis* (Geometridae)
- 7. Malviflorae (=Dilleniiflorae)
 - 18. Malvales
 - 58. Sterculiaceae

- Oiketicus* (Psychidae)
Heliopetes (Hesperiidae)
69. Malvaceae
Heliopetes (Hesperiidae)
Pyrgus (Hesperiidae)
19. Urticales
70. Ulmaceae
Paracraga (Dalceridae)
Adelpha (Nymphalidae)
71. Moraceae
Quentalia (Apatelodidae)
Pachylia (Sphingidae)
Ammalo (Arctiidae)
72. Cecropiaceae
Adelpha (Nymphalidae)
Colobura (Nymphalidae)
Historis (Nymphalidae)
75. Urticaceae
Adelpha (Nymphalidae)
20. Euphorbiales
76. Euphorbiaceae
Paracraga (Dalceridae)
Catonephele (Nymphalidae)
Ectima (Nymphalidae)
Eunica (Nymphalidae)
Hamadryas (Nymphalidae)
8. Violiflorae
23. Violales
88. Passifloraceae
Dryadula (Nymphalidae)
Dryas (Nymphalidae)
Euides (Nymphalidae)
Heliconius (Nymphalidae)
27. Capparales
103. Capparaceae
Itaballia (Pieridae)
Perrhybris (Pieridae)
104. Brassicaceae
Leptophobia (Pieridae)
28. Tropaeolales
110. Tropaeolaceae
Leptophobia (Pieridae)

9. Theiflorae

32. Theales
118. Marcgraviaceae
Menander (Riodinidae)
33. Lecythidales
134. Lecythidaceae
Acharia (Limacodidae)
11. Rosiflorae
38. Hamamelidales
149. Platanaceae
Automeris (Saturniidae)
40. Fagales
153. Fagaceae
Megalopyge (Megalopygidae)
Erynnis (Hesperiidae)
Automeris (Saturniidae)
49. Rosales
181. Rosaceae
Megalopyge (Megalopygidae)
Automeris (Saturniidae)
13. Myrtiflorae
53. Myrtales
195. Onagraceae
Eumorpha (Sphingidae)
197. Lythraceae
Megalopyge (Megalopygidae)
198. Combretaceae
Megalopyge (Megalopygidae)
199. Melastomataceae
Druentica (Mimallonidae)
14. Rutiflorae
55. Sapindales
211. Sapindaceae
Nica (Nymphalidae)
56. Fabales
224. Fabaceae
Astraptus (Hesperiidae)
Pseudopieris (Pieridae)
Aphrissa (Pieridae)
Eurema (Pieridae)
Phoebis (Pieridae)
Everes (Lycaenidae)
Syssphinx (Saturniidae)
Automeris (Saturniidae)

57. Rutales
225. Rutaceae
Achlyodes (Hesperiidae)
228. Simaroubaceae
Atteva (Yponomeutidae)
Acharia (Limacodidae)
Rothschildia (Saturniidae)
15. Vitiflorae
64. Vitidales
261. Vitidaceae
Eumorpha (Sphingidae)
19. Asteriflorae
70. Asterales
280. Asteraceae
Dysschema (Arctiidae)
20. Solaniflorae
71. Solanales
281. Solanaceae
Arawacus (Lycaenidae)
Mechanitis (Nymphalidae)
284. Convolvulaceae
Heliopetes (Hesperiidae)
72. Boraginales
290. Boraginaceae
Conchylodes (Crambidae)
24. Gentianiflorae
83. Oleales
345. Oleaceae
Rothschildia (Saturniidae)
84. Gentianales
349. Rubiaceae
Paracrags (Dalceridae)
Pseudasellodes (Geometridae)
Adelpha (Nymphalidae)
Oxytenis (Oxytenidae)
Rothschildia (Saturniidae)
Eupyrrhoglossum (Sphingidae)
Xylophanes (Sphingidae)
353. Apocynaceae
Aeria (Nymphalidae)
Tithorea (Nymphalidae)
Ammalo (Arctiidae)
25. Lamiiflorae

85. Lamiales (=Scrophulariales)

367. Bignoniaceae

Syngria (Epilemidae)

368. Acanthaceae

Anartia (Nymphalidae)

Siproeta (Nymphalidae)

Castilia (Nymphalidae)

Chlosyne (Nymphalidae)

Subclass Liliidae (=Monocotyledoneae)

6. Zingiberiflorae

17. Zingiberales

71. Musaceae

Caligo (Nymphalidae)

74. Cannaceae

Caligo (Nymphalidae)

75. Marantaceae

Eurybia (Riodinidae)

7. Commeliniflorae

22. Poales

87. Poaceae

Panoquina (Hesperiidae)

Perichares (Hesperiidae)

Cissia (Nymphalidae)

Taygetis (Nymphalidae)

8. Areciflorae

23. Arecales

90. Arecaceae

Perichares (Hesperiidae)

24. Cyclanthales

91. Cyclanthaceae

Caligo (Nymphalidae)

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Código foto	GÉNERO	ESPECIE	AUTOR	AÑO	SUPERFAMILIA	FAMILIA	SUBFAMILIA
02iiMAE0082"	Defective file						
02iMAE0048	Quentalia	ephonia	(Stoll)	1791	Bombycoidea	Apatelodidae	Epiinae
02iMAE0048v	Quentalia	ephonia	(Stoll)	1791	Bombycoidea	Apatelodidae	Epiinae
02iMAE0046	Artace	cribraria	(Ljungh)	1825	Bombycoidea	Lasiocampidae	Macromphaliinae
02iMAE0049	Euglyphis	fibra	(Schaus)	1890	Bombycoidea	Lasiocampidae	Macromphaliinae
02iMAE0049v	Euglyphis	fibra	(Schaus)	1890	Bombycoidea	Lasiocampidae	Macromphaliinae
02iiiMAE0154	Druentica	alsa	(Schaus)	1910	Bombycoidea	Mimallonidae	Lacosominae
02iMAE0073	Oxytenis	modestia	(Cramer)	1780	Bombycoidea	Oxytenidae	
02iMAE0073v	Oxytenis	modestia	(Cramer)	1780	Bombycoidea	Oxytenidae	
02iMAE0073wd	Oxytenis	modestia	(Cramer)	1780	Bombycoidea	Oxytenidae	
02iMAE0060	Syssphinx	molina	(Cramer)	1780	Bombycoidea	Saturniidae	Ceratocampinae
02iMAE0060v	Syssphinx	molina	(Cramer)	1780	Bombycoidea	Saturniidae	Ceratocampinae
02iMAE0069	Automeris	hamata	Schaus	1906	Bombycoidea	Saturniidae	Hemileucinae
02iMAE0069v	Automeris	hamata	Schaus	1906	Bombycoidea	Saturniidae	Hemileucinae
02iMAE0078	Automeris	metzli	(Salle)	1853	Bombycoidea	Saturniidae	Hemileucinae
02iMAE0078v	Automeris	metzli	(Salle)	1853	Bombycoidea	Saturniidae	Hemileucinae
02iMAE0078wd	Automeris	metzli	(Salle)	1853	Bombycoidea	Saturniidae	Hemileucinae
02iMAE0064	Automeris	zurobara	Druce	1886	Bombycoidea	Saturniidae	Hemileucinae
02iMAE0064v	Automeris	zurobara	Druce	1886	Bombycoidea	Saturniidae	Hemileucinae
02iMAE0086	Rothschildia	erycina	(Shaw)	1797	Bombycoidea	Saturniidae	Saturniinae
02iMAE0086v	Rothschildia	erycina	(Shaw)	1797	Bombycoidea	Saturniidae	Saturniinae
02iMAE0086wd	Rothschildia	erycina	(Shaw)	1797	Bombycoidea	Saturniidae	Saturniinae
02iiMAE0035	Givira	nais	(Druce)	1896	Cossoidea	Cossidae	Hypoptinae
02iiMAE0035v	Givira	nais	(Druce)	1896	Cossoidea	Cossidae	Hypoptinae
02iMAE0066	Morpheis	pyracmon	(Cramer)	1780	Cossoidea	Cossidae	Zeuzerinae
02iMAE0066wd	Morpheis	pyracmon	(Cramer)	1780	Cossoidea	Cossidae	Zeuzerinae
02iMAE0029	Acraga	coa	(Schaus)	1892	Cossoidea	Dalceridae	
02iMAE0104	Paracraga	argentea	(Schaus)	1910	Cossoidea	Dalceridae	
02iMAE0026	Acharia	nesea	(Stoll)	1780	Cossoidea	Limacodidae	
02iMAE0026v	Acharia	nesea	(Stoll)	1780	Cossoidea	Limacodidae	
02iMAE0053	Epimecis	subroraria	(Walker)	1860	Geometroidea	Geometridae	Ennominae
02iMAE0053v	Epimecis	subroraria	(Walker)	1860	Geometroidea	Geometridae	Ennominae
02iMAE0032	Leptostales	delila	(Schaus)	1912	Geometroidea	Geometridae	Sterrhinae
02iMAE0032v	Leptostales	delila	(Schaus)	1912	Geometroidea	Geometridae	Sterrhinae
02iMAE0033	Pseudasellodes	fenestraria	(Guenée)	[1858]	Geometroidea	Geometridae	Sterrhinae
02iMAE0033v	Pseudasellodes	fenestraria	(Guenée)	[1858]	Geometroidea	Geometridae	Sterrhinae
02iiMAE0082	Ammalo	helops	(Cramer)	1775	Noctuoidea	Arctiidae	Arctiinae
02iiMAE0082v	Ammalo	helops	(Cramer)	1775	Noctuoidea	Arctiidae	Arctiinae
02iiMAE0037	Scaptius	sanguistrigatus	(Dognin)	1910	Noctuoidea	Arctiidae	Arctiinae
02iiMAE0037v	Scaptius	sanguistrigatus	(Dognin)	1910	Noctuoidea	Arctiidae	Arctiinae
02iiMAE0051	Dysschema	jansonis	(Butler)	1870	Noctuoidea	Arctiidae	Pericopinae
02iiMAE0051v	Dysschema	jansonis	(Butler)	1870	Noctuoidea	Arctiidae	Pericopinae
02iiiMBH20124	Hyalurga	subnormalis	Dyar	1914	Noctuoidea	Arctiidae	Pericopinae
02iiiMBH20124v	Hyalurga	subnormalis	Dyar	1914	Noctuoidea	Arctiidae	Pericopinae
02iiiMBH20124wd	Hyalurga	subnormalis	Dyar	1914	Noctuoidea	Arctiidae	Pericopinae
02iMAE0040	Hyalurga	subnormalis	Dyar	1914	Noctuoidea	Arctiidae	Pericopinae

02iMAE0040v	Hyalurga	subnormalis	Dyar	1914	Noctuoidea	Arctiidae	Pericopinae
02iMAE0039	Hyalurga	urioides	Schaus	1910	Noctuoidea	Arctiidae	Pericopinae
02iMAE0039v	Hyalurga	urioides	Schaus	1910	Noctuoidea	Arctiidae	Pericopinae
02iiiMAE0116	Argyrosticta	meres	(Druce)	1903	Noctuoidea	Noctuidae	Amphipyrinae
02iiiMAE0116v	Argyrosticta	meres	(Druce)	1903	Noctuoidea	Noctuidae	Amphipyrinae
02iiiMBH50126	Epitausa	rubripuncta	(Guenée)	1852	Noctuoidea	Noctuidae	Catocalinae
02iiiMBH50126v	Epitausa	rubripuncta	(Guenée)	1852	Noctuoidea	Noctuidae	Catocalinae
02iiMAE0081	Gorgone	ortilia	(Stoll)	1781	Noctuoidea	Noctuidae	Catocalinae
02iiMAE0081wd	Gorgone	ortilia	(Stoll)	1781	Noctuoidea	Noctuidae	Catocalinae
02iMAE0044	Helia	vitiluna	(Guenée)	1852	Noctuoidea	Noctuidae	Catocalinae
02iMAE0044v	Helia	vitiluna	(Guenée)	1852	Noctuoidea	Noctuidae	Catocalinae
02iiMAE0052	Ophisma	aeolidae	Druce	1890	Noctuoidea	Noctuidae	Catocalinae
02iiMAE0052wd	Ophisma	aeolidae	Druce	1890	Noctuoidea	Noctuidae	Catocalinae
02iMAE0028	Letis	buteo	Guenée	1852	Noctuoidea	Noctuidae	Ophiderinae
02iMAE0028v	Letis	buteo	Guenée	1852	Noctuoidea	Noctuidae	Ophiderinae
02iMAE0028wd	Letis	buteo	Guenée	1852	Noctuoidea	Noctuidae	Ophiderinae
02iMAE0054	Diphthera	festiva	(Fabricius)	1775	Noctuoidea	Noctuidae	Ophiderinae
02iMAE0054v	Diphthera	festiva	(Fabricius)	1775	Noctuoidea	Noctuidae	Ophiderinae
02iMAE0062	Antaea	juturna	(Cramer)	1777	Noctuoidea	Notodontidae	
02iMAE0027	Bardaxima	lucilinea	Walker	1858	Noctuoidea	Notodontidae	
02iMAE0027wd	Bardaxima	lucilinea	Walker	1858	Noctuoidea	Notodontidae	
02iMAE0095	Bardaxima	lucilinea	Walker	1858	Noctuoidea	Notodontidae	
02iMAE0050	Calledema	plusia	(Felder)	1874	Noctuoidea	Notodontidae	
02iMAE0050v	Calledema	plusia	(Felder)	1874	Noctuoidea	Notodontidae	
02iMAE0050wd	Calledema	plusia	(Felder)	1874	Noctuoidea	Notodontidae	
02iMAE0065	Hapigia	curvilinea	Schaus	1904	Noctuoidea	Notodontidae	
02iMAE0065wd	Hapigia	curvilinea	Schaus	1904	Noctuoidea	Notodontidae	
02iMAE0102	Pentobesa Pentobesa	xylinoides sinistra	(Walker) or Weller	1866 1991	Noctuoidea	Notodontidae	
02iMAE0080	Rhuda	focula	(Stoll)	1782	Noctuoidea	Notodontidae	
02iMAE0045	Rosema	demorsa	Felder	1874	Noctuoidea	Notodontidae	
02iiiMAE0117	Salluca	pistacina	Schaus	1901	Noctuoidea	Notodontidae	
02iHICT0038	Panoquina	ocola	(Edwards)	1863	Hesperioidea	Hesperiidae	Hesperiinae
02iHICT0038v	Panoquina	ocola	(Edwards)	1863	Hesperioidea	Hesperiidae	Hesperiinae
02iHICT0038wd	Panoquina	ocola	(Edwards)	1863	Hesperioidea	Hesperiidae	Hesperiinae
02iiiHBH20114	Panoquina	panoquinoides	(Skinner)	1891	Hesperioidea	Hesperiidae	Hesperiinae
02iiiHBH20114v	Panoquina	panoquinoides	(Skinner)	1891	Hesperioidea	Hesperiidae	Hesperiinae
02iiHAE0019	Perichares	philetes	(Gmelin)	1790	Hesperioidea	Hesperiidae	Hesperiinae
02iiHAE0019v	Perichares	philetes	(Gmelin)	1790	Hesperioidea	Hesperiidae	Hesperiinae
02iiiHBH20127	Achlyodes	busirus	(Cramer)	1779	Hesperioidea	Hesperiidae	Pyrginae
02iiiHBH20127v	Achlyodes	busirus	(Cramer)	1779	Hesperioidea	Hesperiidae	Pyrginae
02iiiHBH20127wd	Achlyodes	busirus	(Cramer)	1779	Hesperioidea	Hesperiidae	Pyrginae
02iHICT0017	Astraptus	creteus	(Mabille)	1903?	Hesperioidea	Hesperiidae	Pyrginae
02iHICT10016	Astraptus	fulgurator	(Walch)	1775	Hesperioidea	Hesperiidae	Pyrginae
02iiHBH20018	Erynnis	tristis	(Boisduval)	1852	Hesperioidea	Hesperiidae	Pyrginae
02iiHBH20018v	Erynnis	tristis	(Boisduval)	1852	Hesperioidea	Hesperiidae	Pyrginae
02iiiHBH40108	Heliopetes	arsaltae	Linnaeus)	1758	Hesperioidea	Hesperiidae	Pyrginae

02iiiHBH40108v	Heliopetes	arsaltae	(Linnaeus)	1758	Hesperioidea	Hesperiidae	Pyrginae
02iiiHBH40111	Heliopetes	arsaltae	(Linnaeus)	1758	Hesperioidea	Hesperiidae	Pyrginae
02iiiHBH60118	Pyrgus	oileus	(Linnaeus)	1767	Hesperioidea	Hesperiidae	Pyrginae
02iiiHBH60118v	Pyrgus	oileus	(Linnaeus)	1767	Hesperioidea	Hesperiidae	Pyrginae
02iHICT0020	Urbanus	teleus	(Stoll)	1790	Hesperioidea	Hesperiidae	Pyrginae
02iiPBH40110	Everes	comyntas	(Godart)	1824	Papilionoidea	Lycaenidae	Polyommatainae
02iiPBH40110v	Everes	comyntas	(Godart)	1824	Papilionoidea	Lycaenidae	Polyommatainae
Niko Lopez 10-3	Arawacus	lincoides	(Draudt)	1919	Papilionoidea	Lycaenidae	Theclinae
02iPBH50043	Caligo	atreus	(Kollar)	1849	Papilionoidea	Nymphalidae	Brassolinae
02iPBH50043v	Caligo	atreus	(Kollar)	1849	Papilionoidea	Nymphalidae	Brassolinae
02iPAE0067	Caligo	memnon	(C. & R. Felder)	1866	Papilionoidea	Nymphalidae	Brassolinae
02iPAE0067v	Caligo	memnon	(C. & R. Felder)	1866	Papilionoidea	Nymphalidae	Brassolinae
02iiiPICT30143	Dryadula	phaetusa	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Heliconiinae
02iiiPICT30143v	Dryadula	phaetusa	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Heliconiinae
02iiiPICT30143wd	Dryadula	phaetusa	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH60004	Dryas	iulia	(Fabricius)	1775	Papilionoidea	Nymphalidae	Heliconiinae
02iiPBH0113	Eueides	aliphera	(Godart)	1819	Papilionoidea	Nymphalidae	Heliconiinae
02iiPBH0113wd	Eueides	aliphera	(Godart)	1819	Papilionoidea	Nymphalidae	Heliconiinae
02iPICT0005	Eueides	vibilia	(Godart)	1819	Papilionoidea	Nymphalidae	Heliconiinae
02iPICT0005v	Eueides	vibilia	(Godart)	1819	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20003	Heliconius	hewitsoni	Staudinger	1875	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20003v	Heliconius	hewitsoni	Staudinger	1875	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20003vw	Heliconius	hewitsoni	Staudinger	1875	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20006	Heliconius	ismenius	Latreille	1817	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20006v	Heliconius	ismenius	Latreille	1817	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20006wd	Heliconius	ismenius	Latreille	1817	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20002	Heliconius	melpomone	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20002v	Heliconius	melpomone	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20002vw	Heliconius	melpomone	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH20002wd	Heliconius	melpomone	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Heliconiinae
02iPBH90029	Aeria	eurimedia	(Cramer)	1779	Papilionoidea	Nymphalidae	Ithomiinae
02iPBH90029v	Aeria	eurimedia	(Cramer)	1779	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100130	Mechanitis	polymnia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100130wd	Mechanitis	polymnia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100131	Mechanitis	polymnia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100131v	Mechanitis	polymnia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100131vw	Mechanitis	polymnia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100131wd	Mechanitis	polymnia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Ithomiinae
02iPBH20007	Mechanitis	polymnia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100132	Tithorea	harmonia	(Cramer)	1777	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100132v	Tithorea	harmonia	(Cramer)	1777	Papilionoidea	Nymphalidae	Ithomiinae
02iiPBH100132wd	Tithorea	harmonia	(Cramer)	1777	Papilionoidea	Nymphalidae	Ithomiinae
02iPICT0009	Tithorea	harmonia	(Cramer)	1777	Papilionoidea	Nymphalidae	Ithomiinae
02iPICT0009v	Tithorea	harmonia	(Cramer)	1777	Papilionoidea	Nymphalidae	Ithomiinae
02iPICT0009wd	Tithorea	harmonia	(Cramer)	1777	Papilionoidea	Nymphalidae	Ithomiinae
02iiPICT110121	Castilia	ofella	(Hewitson)	1864	Papilionoidea	Nymphalidae	Melitaeinae

02iiiPICT110121v	Castilia	ofella	(Hewitson)	1864	Papilionoidea	Nymphalidae	Melitaeinae
02iiiPICT10123	Chlosyne	poecile	(Felder)	1867	Papilionoidea	Nymphalidae	Melitaeinae
02iiiPICT10123v	Chlosyne	poecile	(Felder)	1867	Papilionoidea	Nymphalidae	Melitaeinae
02iiiPBH20112	Janatella	leucodesma	(C. & R. Felder)	1861	Papilionoidea	Nymphalidae	Melitaeinae
02iiiPBH20112v	Janatella	leucodesma	(C. & R. Felder)	1861	Papilionoidea	Nymphalidae	Melitaeinae
02iiPICT30014	Thessalia	ezra	(Hewitson)	1864	Papilionoidea	Nymphalidae	Melitaeinae
02iiPICT30014v	Thessalia	ezra	(Hewitson)	1864	Papilionoidea	Nymphalidae	Melitaeinae
02iiPICT0021	Adelpha	basiloides	(Bates)	1865	Papilionoidea	Nymphalidae	Nymphalinae
02iiPICT0021v	Adelpha	basiloides	(Bates)	1865	Papilionoidea	Nymphalidae	Nymphalinae
02iiPICT0021vw	Adelpha	basiloides	(Bates)	1865	Papilionoidea	Nymphalidae	Nymphalinae
02iiPICT0021wd	Adelpha	basiloides	(Bates)	1865	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH20070	Adelpha	basiloides	(Bates)	1865	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH20070v	Adelpha	basiloides	(Bates)	1865	Papilionoidea	Nymphalidae	Nymphalinae
02IPICT10008	Adelpha	cocala	(Cramer)	1780	Papilionoidea	Nymphalidae	Nymphalinae
02IPICT10008v	Adelpha	cocala	(Cramer)	1780	Papilionoidea	Nymphalidae	Nymphalinae
02IPICT10008vw	Adelpha	cocala	(Cramer)	1780	Papilionoidea	Nymphalidae	Nymphalinae
02IPICT10008wd	Adelpha	cocala	(Cramer)	1780	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPICT110122	Adelpha	cytherea	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPICT110122v	Adelpha	cytherea	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02IPICT10072	Adelpha	melanthe	(Bates)	1864	Papilionoidea	Nymphalidae	Nymphalinae
02IPICT10072v	Adelpha	melanthe	(Bates)	1864	Papilionoidea	Nymphalidae	Nymphalinae
02IPICT10072vw	Adelpha	melanthe	(Bates)	1864	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH60083	Anartia	fatima	(Fabricius)	1793	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH60083v	Anartia	fatima	(Fabricius)	1793	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH60083wd	Anartia	fatima	(Fabricius)	1793	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH20088	Catonephele	nyctimus	(Westwood)	1850	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH20088v	Catonephele	nyctimus	(Westwood)	1850	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH0022	Colobura	dirce	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH0022v	Colobura	dirce	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPBH20120	Ectima	erycinoides	C. & R. Felder	1867	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPBH20120v	Ectima	erycinoides	C. & R. Felder	1867	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPBH20120wd	Ectima	erycinoides	C. & R. Felder	1867	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH50093	Eunica	alpais	(Godart)	1824	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH50093v	Eunica	alpais	(Godart)	1824	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPBH20141	Hamadryas	amphinome	(Linnaeus)	1767	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPBH20141v	Hamadryas	amphinome	(Linnaeus)	1767	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPBH20141wd	Hamadryas	amphinome	(Linnaeus)	1767	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPICT30144	Hamadryas	februa	(Hübner)	1823	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPICT30144v	Hamadryas	februa	(Hübner)	1823	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPICT30144wd	Hamadryas	februa	(Hübner)	1823	Papilionoidea	Nymphalidae	Nymphalinae
02iiPICT30011	Hamadryas	feronia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02iiPICT30011vw	Hamadryas	feronia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02iiPICT30011wd	Hamadryas	feronia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH20079	Hamadryas	feronia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02IPBH20079v	Hamadryas	feronia	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPBH20133	Hamadryas	laodamia	(Cramer)	1777	Papilionoidea	Nymphalidae	Nymphalinae

02iiiPBH20133v	Hamadryas	laodamia	(Cramer)	1777	Papilionoidea	Nymphalidae	Nymphalinae
02iiiPBH20133wd	Hamadryas	laodamia	(Cramer)	1777	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH20012	Hamadryas	laodamia	(Cramer)	1777	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH20012v	Hamadryas	laodamia	(Cramer)	1777	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH60085	Historis	odius	(Fabricius)	1775	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH60085v	Historis	odius	(Fabricius)	1775	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH60085vw	Historis	odius	(Fabricius)	1775	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH20013	Nica	flavilla	(Godart)	1824	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH20013v	Nica	flavilla	(Godart)	1824	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH20084	Siproeta	stelenes	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH20084v	Siproeta	stelenes	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02iPBH20084wd	Siproeta	stelenes	(Linnaeus)	1758	Papilionoidea	Nymphalidae	Nymphalinae
02iiPBH20015	Cissia	hesione	Sulzer	1776	Papilionoidea	Nymphalidae	Satyrinae
02iiPBH20015v	Cissia	hesione	Sulzer	1776	Papilionoidea	Nymphalidae	Satyrinae
02iiiPBH20138	Taygetis	andromeda	(Cramer)	1779	Papilionoidea	Nymphalidae	Satyrinae
02iiiPBH20138v	Taygetis	andromeda	(Cramer)	1779	Papilionoidea	Nymphalidae	Satyrinae
02iiiPBH20138vw	Taygetis	andromeda	(Cramer)	1779	Papilionoidea	Nymphalidae	Satyrinae
02iiiPBH20135	Taygetis	andromeda	(Cramer)	1779	Papilionoidea	Nymphalidae	Satyrinae
02iiiPBH20135v	Taygetis	andromeda	(Cramer)	1779	Papilionoidea	Nymphalidae	Satyrinae
02iiiPBH20135vw	Taygetis	andromeda	(Cramer)	1779	Papilionoidea	Nymphalidae	Satyrinae
02iiPBH20068	Parides	arcas	(Cramer)	1777	Papilionoidea	Papilionidae	Papilioninae
02iiPBH20068v	Parides	arcas	(Cramer)	1777	Papilionoidea	Papilionidae	Papilioninae
02iiiPBH100134	Parides	sesostris	(Cramer)	1779	Papilionoidea	Papilionidae	Papilioninae
02iiiPBH100134v	Parides	sesostris	(Cramer)	1779	Papilionoidea	Papilionidae	Papilioninae
02iiiPICT110137	Parides	sesostris	(Cramer)	1779	Papilionoidea	Papilionidae	Papilioninae
02iiiPICT30142	Aphrissa	boisduvalii	(Felder)	1861	Papilionoidea	Pieridae	Coliadinae
02iiiPICT30142v	Aphrissa	boisduvalii	(Felder)	1861	Papilionoidea	Pieridae	Coliadinae
02iiiPBH40109	Eurema	daira	(Godart)	1819	Papilionoidea	Pieridae	Coliadinae
02iiiPBH40109v	Eurema	daira	(Godart)	1819	Papilionoidea	Pieridae	Coliadinae
02iPBH0024	Phoebis	argante	(Fabricius)	1775	Papilionoidea	Pieridae	Coliadinae
02iPBH0024v	Phoebis	argante	(Fabricius)	1775	Papilionoidea	Pieridae	Coliadinae
02iPBH50063	Phoebis	philea	(Linnaeus)	1776	Papilionoidea	Pieridae	Coliadinae
02iPBH50063v	Phoebis	philea	(Linnaeus)	1776	Papilionoidea	Pieridae	Coliadinae
02iPBH60023	Phoebis	philea	(Linnaeus)	1776	Papilionoidea	Pieridae	Coliadinae
02iPBH60023v	Phoebis	philea	(Linnaeus)	1776	Papilionoidea	Pieridae	Coliadinae
02iPBH0074	Pseudopieris	nehemia	(Boisduval)	1836	Papilionoidea	Pieridae	Dismorphiinae
02iPBH0074v	Pseudopieris	nehemia	(Boisduval)	1838	Papilionoidea	Pieridae	Dismorphiinae
02iPICT10071	Itaballia	demophile	(Linnaeus)	1758	Papilionoidea	Pieridae	Pierinae
02iPICT10071v	Itaballia	demophile	(Linnaeus)	1758	Papilionoidea	Pieridae	Pierinae
02iPICT10071wd	Itaballia	demophile	(Linnaeus)	1758	Papilionoidea	Pieridae	Pierinae
02iiiPICT70145	Leptophobia	aripa	(Boisduval)	1836	Papilionoidea	Pieridae	Pierinae
02iiiPICT70145v	Leptophobia	aripa	(Boisduval)	1836	Papilionoidea	Pieridae	Pierinae
02iiiPICT70146	Perrhybris	pyrrha	(Fabricius)	1775	Papilionoidea	Pieridae	Pierinae
02iiiPICT70146v	Perrhybris	pyrrha	(Fabricius)	1775	Papilionoidea	Pieridae	Pierinae
02iiiPICT70146vw	Perrhybris	pyrrha	(Fabricius)	1775	Papilionoidea	Pieridae	Pierinae
02iiiPICT70147	Perrhybris	pyrrha	(Fabricius)	1775	Papilionoidea	Pieridae	Pierinae

02iiiPICT70147v	Perrhybris	pyrrha	(Fabricius)	1775	Papilionoidea	Pieridae	Pierinae
02iiiPICT70147wd	Perrhybris	pyrrha	(Fabricius)	1775	Papilionoidea	Pieridae	Pierinae
02iiiPBH100119	Eurybia	lycisca	Westwood	1851	Papilionoidea	Riodinidae	Riodininae
02iiiPBH100119v	Eurybia	lycisca	Westwood	1851	Papilionoidea	Riodinidae	Riodininae
02iiiPBH0153	Menander	pretus	(Cramer)	1777	Papilionoidea	Riodinidae	Riodininae
02iiiPBH0153v	Menander	pretus	(Cramer)	1777	Papilionoidea	Riodinidae	Riodininae
02iMAE0031	Ategumia	matutinalis	(Guenée)	1854	Pyraloidea	Crambidae	Spilomelinae
02iMAE0031v	Ategumia	matutinalis	(Guenée)	1854	Pyraloidea	Crambidae	Spilomelinae
02iMAE0025	Conchylodes	nolckenialis	(Snellen)	1875	Pyraloidea	Crambidae	Spilomelinae
02iMAE0025v	Conchylodes	nolckenialis	(Snellen)	1875	Pyraloidea	Crambidae	Spilomelinae
02iMAE0041	Polygrammodes	elevata	(Fabricius)	1775	Pyraloidea	Crambidae	Spilomelinae
02iMAE0041v	Polygrammodes	elevata	(Fabricius)	1775	Pyraloidea	Crambidae	Spilomelinae
02iMAE0077	Eumorpha	vitis	(Linnaeus)	1758	Sphingoidea	Sphingidae	Macroglossinae
02iMAE0077v	Eumorpha	vitis	(Linnaeus)	1758	Sphingoidea	Sphingidae	Macroglossinae
02iMAE0077wd	Eumorpha	vitis	(Linnaeus)	1758	Sphingoidea	Sphingidae	Macroglossinae
02iMAE0076	Eupyrrhoglossum	sagra	(Poey)	1832	Sphingoidea	Sphingidae	Macroglossinae
02iMAE0076v	Eupyrrhoglossum	sagra	(Poey)	1832	Sphingoidea	Sphingidae	Macroglossinae
02iMAE0076wd	Eupyrrhoglossum	sagra	(Poey)	1832	Sphingoidea	Sphingidae	Macroglossinae
02iiiMAE0150	Pachylia	darceata	Druce	1881	Sphingoidea	Sphingidae	Macroglossinae
02iiiMAE0150wd	Pachylia	darceata	Druce	1881	Sphingoidea	Sphingidae	Macroglossinae
02iMAE0152	Xylophanes	titana	(Druce)	1878	Sphingoidea	Sphingidae	Macroglossinae
02iMAE0152v	Xylophanes	titana	(Druce)	1878	Sphingoidea	Sphingidae	Macroglossinae
02iMAE0151	Adhemarius	gannascus	(Stoll)	1790	Sphingoidea	Sphingidae	Sphinginae
02iMAE0151wd	Adhemarius	gannascus	(Stoll)	1790	Sphingoidea	Sphingidae	Sphinginae
02iiiMAE0129	Oiketicus	kirbyi	Guilding	1827	Tineoidea	Psychidae	Oiketicinae
02iiiMAE0129v	Oiketicus	kirbyi	Guilding	1827	Tineoidea	Psychidae	Oiketicinae
02iiiMAE0129wd	Oiketicus	kirbyi	Guilding	1827	Tineoidea	Psychidae	Oiketicinae
02iMAE0034	Schidax	squammularia	Hübner	1818	Uranoidea	Epiplemidae	
02iMAE0034v	Schidax	squammularia	Hübner	1818	Uranoidea	Epiplemidae	
02iMAE0075	Syngria	druidaria	Guenée	1857	Uranoidea	Epiplemidae	
02iMAE0075v	Syngria	druidaria	Guenée	1857	Uranoidea	Epiplemidae	
02iMAE0075wd	Syngria	druidaria	Guenée	1857	Uranoidea	Epiplemidae	
02iMAE0036	Atteva	pustulella	(Fabricius)	1787	Yponomeutoidea	Yponomeutidae	Attevininae
02iMAE0036v	Atteva	pustulella	(Fabricius)	1787	Yponomeutoidea	Yponomeutidae	Attevininae
02iMICT0105	Lactura	schenoxantha	(Schaus)	1912	Zygaenoidea	Lacturidae	
02iMAE0087	Megalopyge	lanata	(Cramer)	1780	Zygaenoidea	Megalopygidae	Megalopyginae
02iMAE0087v	Megalopyge	lanata	(Cramer)	1780	Zygaenoidea	Megalopygidae	Megalopyginae
02iMAE0087wd	Megalopyge	lanata	(Cramer)	1780	Zygaenoidea	Megalopygidae	Megalopyginae
02iMAE0047	Megalopyge	opercularis?	(J.E. Smith)	1797	Zygaenoidea	Megalopygidae	Megalopyginae
02iMAE0030	Trosia	dimas	(Cramer)	1775	Zygaenoidea	Megalopygidae	Trosiinae
02iMAE0030v	Trosia	dimas	(Cramer)	1775	Zygaenoidea	Megalopygidae	Trosiinae