

# **Butterflies reported from Doyle's Delight, Toledo and Cayo Districts, Belize.**

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December 20, 2008

Two expeditions have assessed the butterfly fauna in the immediate vicinity of the Doyle's Delight ridgeline and surrounding valleys. Jan Meerman, in August 2004, observed butterflies as part of his wide-ranging survey of plants and animals at the site. He recorded 20 species, including two that represented species previously not known from Belize. In August 2007, the authors were involved in an aggressive effort to sample butterflies at the site. This effort generated 185 discrete collections of butterflies from the site, a relatively small sample for the effort expended.

Our sampling increased the total known butterfly fauna at Doyle's Delight to 95 species, approximately 10% of the species known from Belize. The butterflies of Doyle's Delight remain poorly known. Slightly fewer than 1,000 species are known from Belize and well inventoried sites, such as Cockscomb Basin, Las Cuevas or la Milpa Biological station range between 300-400 known species. The relative paucity of species known from Doyle's Delight is a reflection of the low effort spent sampling the site relative to other, more accessible areas, as well as the poor weather experienced on the 2007 expedition. During the 10 days on site, skies were generally overcast with scattered showers experienced on most days. This created cool, wet condition which limited butterfly activity during our stay. In addition, both expeditions to the site have occurred during August, minimizing our exposure to seasonal variation in butterfly flight periods. Ideally, at least two additional sampling efforts, one in the early rainy season (April or May), and one later in the season (October, November) would be required to gain a fuller understanding of the butterfly community at the site.

Ironically, the undisturbed nature of the habitat contributed to the low encounter rate as well. Most butterflies visit flowers to feed, and are most easily sampled along forest edges and openings where early successional plants often bloom profusely. Almost no such habitat existed in the vicinity of Doyle's Delight. Although the recent bamboo die off created scattered openings within the previous few months, early successional plants had not yet fully responded to these newly open habitats and very few species were producing blooms. Likewise the helipad and trail systems were freshly cleared and offered few flowers that were attractive to butterflies.

Despite our relatively poor understanding of the butterfly community of Doyle's Delight, it is clear that the high ridges that define the area support unique butterfly habitats in Belize. Thirteen of the reported 95 species are known in Belize only from the vicinity of Doyle's Delight. An additional six species are known sparingly from nearby high elevation forests in the Columbia Forest Reserve and are likely restricted to higher elevations in Belize. Based on our experience throughout Belize, we believe that additional sampling at other times of the year at Doyle's Delight would produce a similar high ratio of new species for Belize, and that upwards of 20-30 additional species could be added to the country's butterfly fauna as the area become better known.

**Species known only from Doyle's Delight in Belize include the following:**

Hesperiidae, Hesperinae



*Neoxeniades scipio*. A metallic blue skipper that is probably limited to higher elevations in Belize. We encountered a single male while it visited flowers in the cleared heliport area.

*Quasimellana antipazina*. A dull brown and orange skipper encountered along the ridgeline north of DD. This species is very poorly known and previously reported from only Costa Rica.

Hesperiidae, Pyrginae

*Camptopluera auxo*. A non-descript mottled black skipper. The species is fairly widespread in Central America.

*Entheus matho*. A brightly patterned orange and black skipper that is known from scattered locals from Chiapas southward. The single adult captured was feeding on a small flowering tree in a clearing created by the bamboo die back.

*Oeleus negrus*. A small black skipper known from Mexico southward.

*Quadrus francesius*. A rare, small blue and black skipper known from Chiapas to Costa Rica. It was encountered in the understory along the ridge line.

Lycaenidae, Theclinae

*Calycopis tamos*. A tiny hairstreak known mostly from Mexican forests. The female captured was resting on leaves on the forest floor along the ridge line.

*Oenomeas atena*. A small bluish hairstreak reported from countries south of Belize. A few adults were seen flying from the canopy into a clearing created by a lightning strike. Adults perched on sunlit leaves at the edge of the clearing about 4m above ground.

Nymphalidae, Brassolinae

*Opotera staugingeri*. In 2004 Meerman reported that this owl butterfly was common in the area. We did not encounter it in 2007.

Nymphalidae, Morphinae



*Caerois gerdrudtus*. A satyr-like “Morpho” reported throughout tropical South America, northward to Costa Rica where it is considered rare in lowland swamp forests. The DD record is notable as a significant range extension and the habitat at DD differs significantly from that reported from Costa Rica. The single specimen was taken from a flight intercept trap, where it soaked for an unknown amount of time in the preservative.

Nymphalidae, Charaxinae



*Prepona deiphile*. A spectacular member of the *Prepona*, this species ranges from southern Mexico through Brazil. In Central America it is considered very rare and localized, and is very poorly known south of Mexico. It is generally considered to be a montane species of rainforest habitats. At DD, this species was found exclusively in a small patch of recently killed trees along the ridge line where lightning apparently vaporized soil moisture, killing approximately 40 trees. One or two butterflies could usually be seen high in the tree snags where they were feeding on sap flows. Three males were captured, and females were seen as well. Based on quick glimpses, the females have pale-orange marginal bands on the dorsal wings.

Nymphalidae, Limenitidinae



*Adelpha erymathis*. A rare species known from scattered location throughout Central America. The single adult captured was flying with the following species, and was indistinguishable in flight.



*Adelpha leucerioides*. Meerman reported this as a common species in 2004, and it was again one of the most common butterflies at DD in 2007. Adults flew along the edges of openings, and perched on sunlit leaves.

#### **Other species of note known from Doyle's Delight.**

*Ziegleria denarius*. (Lycaenidae, Theclinae) A small, brown and black hairstreak that was somewhat common along ridges. Adults were generally flushed from the forest floor and where they settled again quickly. A single additional record from Little Quartz Ridge indicates that this species is probably limited to higher elevations in Belize.

*Evenus coronata* (Lycaenidae, Theclinae). A large, metallic blue and red hairstreak distributed from Southern Mexico to the Andes. This species is generally quite localized, and is considered to be limited to montane rainforest habitats. A single individual was collected in a small clearing created by the die-off of bamboo. It has also been collected in high elevation forests in the Columbia Forest Reserve where it is locally common.

*Lamprospilus coelicolor* (Lycaenidae, Theclinae). A medium sized hairstreak found along the edges of the lightning strike opening where it perched on sunlight leaves. Our only other record is from atop the Outlier Peak in Cockscomb basin.

*Theorema eumania* (Lycaenidae, Theclinae). A large hairstreak that is very similar to, and closely related to cycad hairstreaks. This species is known only from three sites in the Maya Mountains. An individual was collected as it was flying through the forest understory and the edges of light gaps.



*Agrias aedon rodriguezii*. (Nymphalidae, Charaxinae). An exceptionally rare subspecies throughout its range. It is also known from the Bladen Reserve and Cockscomb Basin. This subspecies is distributed from southern Mexico to Costa Rica, but is unreported from most intervening countries. Adults were seen at the same opening where *Prepona deiphile* was sighted, and were attracted to sap flows on dead and dying trees.



*Adelpha milleri* (Nymphalidae, Limenitidinae). Fairly common at DD flying with *Adelpha leucerioides*. In Belize, it is also known from higher elevations in the Columbia Forest reserve. This species is typically considered to be a Mexican endemic, limited to montane forests in Veracruz.

*Euptychia* New Species? (Nymphalidae, Satyrinae). A series of females, close to *Euptychia westwoodi* was taken at DD where they were common. Females seem on average to be larger and whiter than do populations from lower elevations. Unfortunately, no males were collected, and the species will have to remain an enigma for now.

# Data Report - Doyle's Delight

## *Hesperiidae*

Cobalus	virbius	fidicula	Toledo/Cayo Dists	Doyle's Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/LabusKovarik,
Damas	clavus		Toledo/Cayo Dists	Doyle's Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/LabusKovarik,
Dubiella	fiscella	belpa	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/24/2007	J.Shuey/LabusKovarik,
Justinia	phaetusa	norda	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/23/2007	J.Shuey/LabusKovarik,
Justinia	phaetusa	norda	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/27/2007	J.Shuey/LabusKovarik,
Neoxeniades	scipio	luda	Toledo/Cayo Dists	Doyle's Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/LabusKovarik,
Panoquina	hecebolus		Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/23/2007	J.Shuey/LabusKovarik,
Papias	dictys		Toledo/Cayo Dists	Doyle's Delight	montanera rainforest, 1,100m	8/28/2007	J.Shuey/LabusKovarik,
Papias	dictys		Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/25/2007	J.Shuey/LabusKovarik,
Quasimellana	antipazina		Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/24/2007	J.Shuey/LabusKovarik,
Remella	vopiscus		Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/26/2007	J.Shuey/LabusKovarik,
Remella	vopiscus		Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/26/2007	J.Shuey/LabusKovarik,
Saliana	triangularis		Toledo/Cayo Dists	Doyle's Delight	montanera rainforest, 1,100m	8/22/2007	J.Shuey/LabusKovarik,
Tromba	xanthura		Toledo/Cayo Dists	Doyle's Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/LabusKovarik,
Anastrus	ne aeris		Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/26/2007	J.Shuey/LabusKovarik,
Astraptes	creteus	crana	Toledo/Cayo Dists	Doyle's Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/LabusKovarik,
Astraptes	creteus	crana	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/24/2007	J.Shuey/LabusKovarik,
Astraptes	creteus	crana	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/27/2007	J.Shuey/LabusKovarik,
Camptopleura	auxo		Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/26/2007	J.Shuey/LabusKovarik,
Entheus	matho	matho	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/27/2007	J.Shuey/LabusKovarik,
Gorgythion	begga	pyralina	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/26/2007	J.Shuey/LabusKovarik,
Gorgythion	begga	pyralina	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/25/2007	J.Shuey/LabusKovarik,
Oeleus	negrus		Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/23/2007	J.Shuey/LabusKovarik,
Polygonus	savigny	savigny	Cayo Dist	Doyle's Delight	montanera rainforest, 950m	8/26/2007	J.Shuey/LabusKovarik,
Polygonus	savigny	savigny	Toledo/Cayo Dists	Doyle's Delight	montanera rainforest, 1,100m	8/28/2007	J.Shuey/LabusKovarik,

Polygonus	savigny	savingy	Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/24/2007	J.Shuey/LabusKovarik,
Polygonus	savigny	savingy	Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/20/2007	J.Shuey/LabusKovarik,
Polygonus	savigny	savingy	Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/27/2007	J.Shuey/LabusKovarik,
Polygonus	savigny	savingy	Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/23/2007	J.Shuey/LabusKovarik,
Polygonus	savigny	savingy	Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/24/2007	J.Shuey/LabusKovarik,
Polygonus	savigny	savingy	Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/21/2007	J.Shuey/LabusKovarik,
Pythionides	jovianus	amaryllis	Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/23/2007	J.Shuey/LabusKovarik,
Quadrus	francesius		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Zera	tetrastigma	tetrastigma	Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/27/2007	J.Shuey/LabusKovarik,

### *Lycaenidae*

Calycopis	tamos		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Calycopis	xeneta		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Evenus	coronata		Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/22/2007	J.Shuey/LabusKovarik,
Lamprospilus	coelicolor		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Lamprospilus	coelicolor		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Oenomaus	atena		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Oenomaus	atena		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Paiwarria	antinous		Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/25/2007	J.Shuey/LabusKovarik,
Pseudolycaena	damo		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Sidenus	tephraeus		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Strymon	gabatha		Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/20/2007	J.Shuey/LabusKovarik,
Theorema	eumenia		Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/20/2007	J.Shuey/LabusKovarik,
Ziegleria	danarius		Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/22/2007	J.Shuey/LabusKovarik,
Ziegleria	danarius		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/25/2007	J.Shuey/LabusKovarik,
Ziegleria	danarius		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/24/2007	J.Shuey/LabusKovarik,
Ziegleria	danarius		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Ziegleria	danarius		Cayo Dist	Doyl�s Delight	montaneraforest,950m	8/26/2007	J.Shuey/LabusKovarik,

### *Nymphalidae*

Caligo	uranus		Toledo/Cayo Dists	Doyl�s Delight	montaneraforest, 1,100m	8/22/2007	J.Shuey/LabusKovarik,
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Ooptera	staugingeri		Cayo	Doyle's Delight		Meeman, Jan
Ooptera	staugingeri		Toledo Dist	Doyle's Delight	montane broadleaf forest	8/1/2004 Meeman, in Shuey et al
Opsiphanes	cassina	fabricii	Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,
Opsiphanes	cassina	fabricii	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Agrias	aedon	rodriguezi	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/25/2007 J.Shuey/Labus/Kovarik,
Agrias	aedon	rodriguezi	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Archaeoprepe	amphimachus	amphimachus	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/26/2007 J.Shuey/Labus/Kovarik,
Archaeoprepe	amphimachus	amphimachus	Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,
Archaeoprepe	amphimachus	amphimachus	Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/28/2007 J.Shuey/Labus/Kovarik,
Archaeoprepe	demophon	centralis	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/27/2007 J.Shuey/Labus/Kovarik,
Archaeoprepe	demophon	centralis	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Memphis	proserpina		Cayo	Doyle's Delight		Meeman, Jan
Memphis	proserpina		Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Memphis	proserpina		Toledo Dist	Doyle's Delight	montane broadleaf forest	8/1/2004 Meeman, in Shuey et al
Memphis	proserpina		Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/25/2007 J.Shuey/Labus/Kovarik,
Memphis	xenica		Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Zaretis	itys		Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Prepona	gnorima		Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/25/2007 J.Shuey/Labus/Kovarik,
Prepona	omphale	octavia	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/27/2007 J.Shuey/Labus/Kovarik,
Prepona	deiphile	diaziana	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/25/2007 J.Shuey/Labus/Kovarik,
Prepona	deiphile	diaziana	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Prepona	deiphile	diaziana	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/26/2007 J.Shuey/Labus/Kovarik,
Greta	nero		Cayo	Doyle's Delight		Meeman, Jan
Hypoleria	cassotis		Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Hypoleria	cassotis		Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,
Hypoleria	cassotis		Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/23/2007 J.Shuey/Labus/Kovarik,
Ithomia	patilla		Cayo	Doyle's Delight		Meeman, Jan
Ithomia	patilla		Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/22/2007 J.Shuey/Labus/Kovarik,
Ithomia	patilla		Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Ithomia	patilla		Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,
Lycorea	cleobaea	atergatis	Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,

Melinaea	ethra	imitata	Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/23/2007	J.Shuey/Labus/Kovarik,
Melinaea	ethra	imitata	Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/Labus/Kovarik,
Oleria	paula		Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/22/2007	J.Shuey/Labus/Kovarik,
Oleria	paula		Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/Labus/Kovarik,
Oleria	paula		Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/25/2007	J.Shuey/Labus/Kovarik,
Oleria	paula		Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/27/2007	J.Shuey/Labus/Kovarik,
Catonephele	mexicana		Cayo	Doylés Delight			Meeman, Jan
Catonephele	numilia	esite	Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/25/2007	J.Shuey/Labus/Kovarik,
Catonephele	numilia	esite	Cayo	Doylés Delight			Meeman, Jan
Catonephele	numilia	esite	Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,
Catonephele	numilia	esite	Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/24/2007	J.Shuey/Labus/Kovarik,
Hamadryas	amphinome	mexicana	Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/24/2007	J.Shuey/Labus/Kovarik,
Dryas	iulia	moderata	Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,
Dryas	iulia	moderata	Cayo	Doylés Delight			Meeman, Jan
Heliconius	cydno	galanthus	Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,
Heliconius	cydno	galanthus	Cayo	Doylés Delight			Meeman, Jan
Heliconius	ismenius	tekhinia	Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,
Philæthria	dido	diatonica	Cayo	Doylés Delight			Meeman, Jan
Philæthria	dido	diatonica	Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/26/2007	J.Shuey/Labus/Kovarik,
Philæthria	dido	diatonica	Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,
Adepha	erymanthis		Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/25/2007	J.Shuey/Labus/Kovarik,
Adepha	leucerioides		Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/22/2007	J.Shuey/Labus/Kovarik,
Adepha	leucerioides		Toledo Dist	Doylés Delight	montane broadleaf forest	8/1/2004	Meeman, in Shuey et al
Adepha	leucerioides		Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,
Adepha	leucerioides		Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/26/2007	J.Shuey/Labus/Kovarik,
Adepha	leucerioides		Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/24/2007	J.Shuey/Labus/Kovarik,
Adepha	leucerioides		Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/Labus/Kovarik,
Adepha	leucerioides		Cayo Dist	Doylés Delight	montanera rainforest, 950m	8/27/2007	J.Shuey/Labus/Kovarik,
Adepha	leucerioides		Cayo	Doylés Delight			Meeman, Jan
Adepha	milleri		Toledo/Cayo Dists	Doylés Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/Labus/Kovarik,

Adepha	milleri		Cayo Dist	Doyle's Delight	montanerainforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Adepha	milleri		Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/26/2007	J.Shuey/LabusKovarik,
Adepha	milleri		Cayo Dist	Doyle's Delight	montanerainforest,950m	8/24/2007	J.Shuey/LabusKovarik,
Adepha	milleri		Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/22/2007	J.Shuey/LabusKovarik,
Adepha	salmoneus	salm onides	Cayo Dist	Doyle's Delight	montanerainforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Adepha	salmoneus	salm onides	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/21/2007	J.Shuey/LabusKovarik,
Adepha	salmoneus	salm onides	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/28/2007	J.Shuey/LabusKovarik,
Marpesia	chiron	maris	Cayo Dist	Doyle's Delight	montanerainforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Marpesia	chiron	maris	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/20/2007	J.Shuey/LabusKovarik,
Marpesia	petreus		Cayo Dist	Doyle's Delight	montanerainforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Caerois	gertrudtus		Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/28/2007	J.Shuey/LabusKovarik,
Morpho	peleides	montezuma	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/20/2007	J.Shuey/LabusKovarik,
Morpho	peleides	montezuma	Cayo	Doyle's Delight			Meeman, Jan
Morpho	peleides	montezuma	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/28/2007	J.Shuey/LabusKovarik,
Morpho	polyphemus	luna	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/28/2007	J.Shuey/LabusKovarik,
Morpho	polyphemus	luna	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/20/2007	J.Shuey/LabusKovarik,
Morpho	polyphemus	luna	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/21/2007	J.Shuey/LabusKovarik,
Morpho	polyphemus	luna	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/20/2007	J.Shuey/LabusKovarik,
Morpho	polyphemus	luna	Cayo	Doyle's Delight			Meeman, Jan
Chlosyne	erodyle		Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/21/2007	J.Shuey/LabusKovarik,
Colobura	dirce		Cayo Dist	Doyle's Delight	montanerainforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Colobura	dirce		Cayo Dist	Doyle's Delight	montanerainforest,950m	8/27/2007	J.Shuey/LabusKovarik,
Colobura	dirce		Cayo Dist	Doyle's Delight	montanerainforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Historis	acheronta	acheronta	Cayo Dist	Doyle's Delight	montanerainforest,950m	8/24/2007	J.Shuey/LabusKovarik,
Historis	acheronta	acheronta	Cayo Dist	Doyle's Delight	montanerainforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Historis	odius	odius	Cayo Dist	Doyle's Delight	montanerainforest,950m	8/24/2007	J.Shuey/LabusKovarik,
Siproeta	epaphus	epaphus	Cayo	Doyle's Delight			Meeman, Jan
Siproeta	epaphus	epaphus	Cayo Dist	Doyle's Delight	montanerainforest,950m	8/26/2007	J.Shuey/LabusKovarik,
Sm yrna	blom fildia	datis	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/21/2007	J.Shuey/LabusKovarik,
Sm yrna	blom fildia	datis	Toledo/Cayo Dists	Doyle's Delight	montanerainforest,1,100m	8/20/2007	J.Shuey/LabusKovarik,

Sm yrna	blom fildia	dati s	Cay o	Doy lés Delight		Meeman, Jan
Sm yrna	blom fildia	dati s	Cay o Dist	Doy lés Delight	montanera rainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Sm yrna	blom fildia	dati s	Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Chlœreupty chia	sericeella		Cay o	Doy lés Delight		Meeman, Jan
Chlœreupty chia	sericeella		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/22/2007 J.Shuey/Labus/Kovarik,
Chlœreupty chia	sericeella		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Chlœreupty chia	sericeella		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,
Cissia	pseudocnufa		Cay o	Doy lés Delight		Meeman, Jan
Cissia	renata		Cay o Dist	Doy lés Delight	montanera rainforest, 950m	8/25/2007 J.Shuey/Labus/Kovarik,
Eupty chia	nsp		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Eupty chia	nsp		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,
Eupty chia	nsp		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/28/2007 J.Shuey/Labus/Kovarik,
Eupty chia	nsp		Cay o Dist	Doy lés Delight	montanera rainforest, 950m	8/23/2007 J.Shuey/Labus/Kovarik,
Hermeupty chi	hemes		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Magneupty chi	libye		Cay o Dist	Doy lés Delight	montanera rainforest, 950m	8/26/2007 J.Shuey/Labus/Kovarik,
Manataria	maculata		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,
Manataria	maculata		Cay o Dist	Doy lés Delight	montanera rainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Manataria	maculata		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/21/2007 J.Shuey/Labus/Kovarik,
Manataria	maculata		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/22/2007 J.Shuey/Labus/Kovarik,
Manataria	maculata		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Pareupty chia	metaleuca		Cay o	Doy lés Delight		Meeman, Jan
Pareupty chia	metaleuca		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/23/2007 J.Shuey/Labus/Kovarik,
Pareupty chia	metaleuca		Cay o Dist	Doy lés Delight	montanera rainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Pareupty chia	metaleuca		Cay o Dist	Doy lés Delight	montanera rainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Pareupty chia	metaleuca		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/27/2007 J.Shuey/Labus/Kovarik,
Pierella	luna	heracles	Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
Pierella	luna	heracles	Cay o Dist	Doy lés Delight	montanera rainforest, 950m	8/24/2007 J.Shuey/Labus/Kovarik,
Tay getis	rufomarginata		Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,

## *Papilionidae*

## *Papilioninae*

Pterourus	menatus	victorinus	Toledo/Cay o Dists	Doy lés Delight	montanera rainforest, 1,100m	8/20/2007 J.Shuey/Labus/Kovarik,
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## *Pieridae*

Dismorphia	amphiona	praxinoe	Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/Labus/Kovarik,
Dismorphia	amphiona	praxinoe	Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/23/2007	J.Shuey/Labus/Kovarik,
Dismorphia	amphiona	praxinoe	Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/27/2007	J.Shuey/Labus/Kovarik,
Dismorphia	amphiona	praxinoe	Cayo	Doyl�s Delight			Meeman, Jan
Dismorphia	theucharila	fortunata	Cayo	Doyl�s Delight			Meeman, Jan
Dismorphia	theucharila	fortunata	Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/22/2007	J.Shuey/Labus/Kovarik,
Dismorphia	theucharila	fortunata	Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/26/2007	J.Shuey/Labus/Kovarik,
Dismorphia	theucharila	fortunata	Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/Labus/Kovarik,
Dismorphia	theucharila	fortunata	Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/23/2007	J.Shuey/Labus/Kovarik,

## *Riodinidae*

Euselasia	aurantiaca		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/26/2007	J.Shuey/Labus/Kovarik,
Euselasia	aurantiaca		Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/22/2007	J.Shuey/Labus/Kovarik,
Ancyluris	inca	inca	Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/28/2007	J.Shuey/Labus/Kovarik,
Ancyluris	inca	inca	Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,
Hades	noctula		Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,
Leucochimona	vestalis		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/23/2007	J.Shuey/Labus/Kovarik,
Manander	pretus		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/23/2007	J.Shuey/Labus/Kovarik,
Menander	purpurata		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/24/2007	J.Shuey/Labus/Kovarik,
Menander	purpurata		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/26/2007	J.Shuey/Labus/Kovarik,
Mesosemia	gaudiolum		Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/22/2007	J.Shuey/Labus/Kovarik,
Mesosemia	gaudiolum		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/27/2007	J.Shuey/Labus/Kovarik,
Mesosemia	gaudiolum		Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/28/2007	J.Shuey/Labus/Kovarik,
Mesosemia	gaudiolum		Cayo	Doyl�s Delight			Meeman, Jan
Mesosemia	lamachus		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/25/2007	J.Shuey/Labus/Kovarik,
Mesosemia	lamachus		Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/21/2007	J.Shuey/Labus/Kovarik,
Mesosemia	lamachus		Toledo/Cayo Dists	Doyl�s Delight	montanera rainforest, 1,100m	8/22/2007	J.Shuey/Labus/Kovarik,
Mesosemia	lamachus		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/23/2007	J.Shuey/Labus/Kovarik,
Mesosemia	lamachus		Cayo Dist	Doyl�s Delight	montanera rainforest,950m	8/26/2007	J.Shuey/Labus/Kovarik,

Mesosemia	lamachus	Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/22/2007	J.Shuey/Labus/Kovarik,
Napaea	umbra	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/24/2007	J.Shuey/Labus/Kovarik,
Detritivora	barnesi	Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/28/2007	J.Shuey/Labus/Kovarik,
Detritivora	barnesi	Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/21/2007	J.Shuey/Labus/Kovarik,
Detritivora	barnesi	Cayo Dist	Doyle's Delight	montanerainforest, 950m	8/24/2007	J.Shuey/Labus/Kovarik,
Detritivora	barnesi	Toledo/Cayo Dists	Doyle's Delight	montanerainforest, 1,100m	8/20/2007	J.Shuey/Labus/Kovarik,