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# NEWS OF THE LEPIDOPTERISTS' SOCIETY

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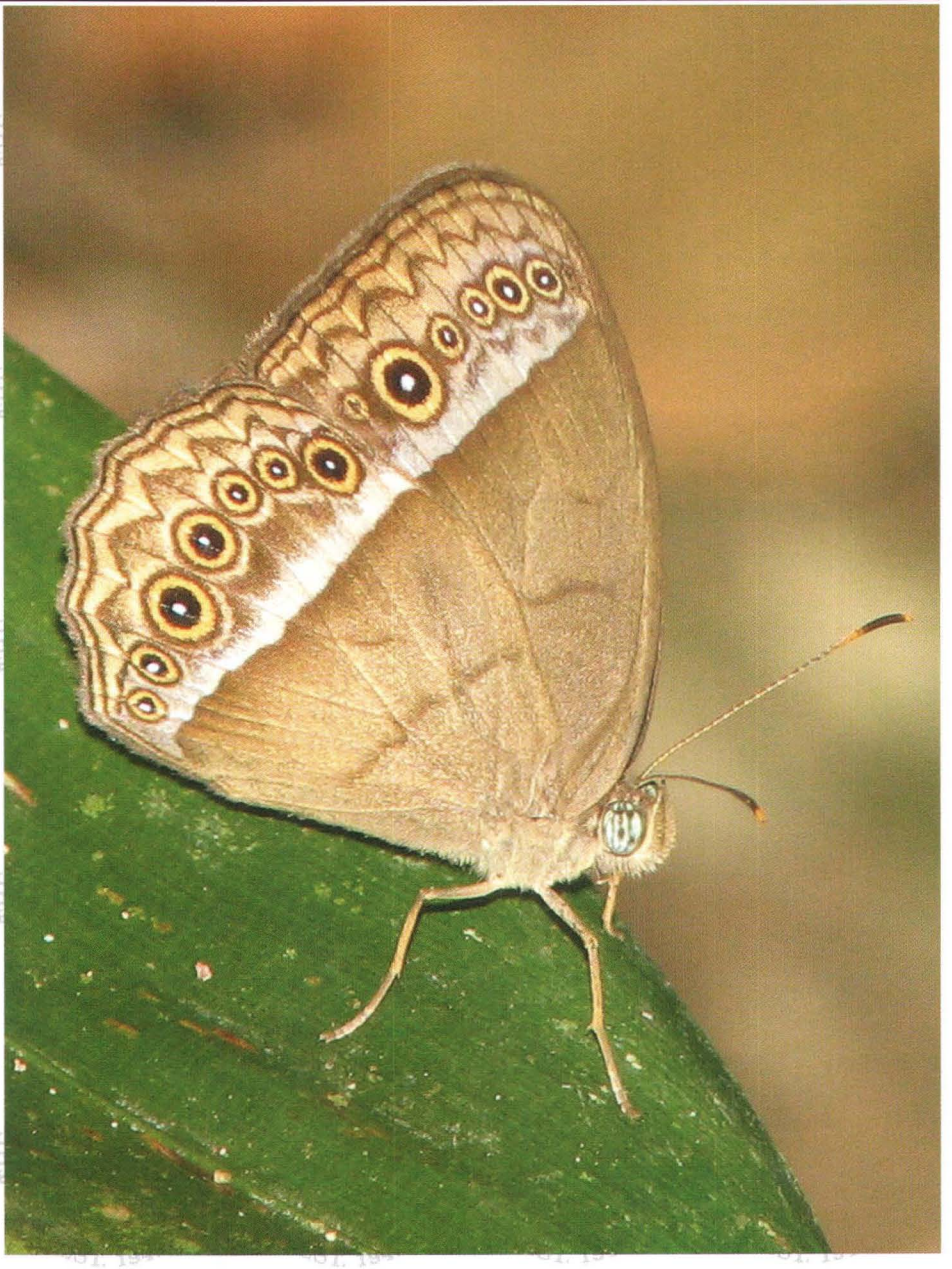

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**Volume 50, Numbers. 3,4**
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## Front Cover:

*Mycalesis orseis*, Taman Negara National Park, Malaysia. Photo by Danusia Antonowicz See article on pp. 63.

# Two Trips to Taman Negara National Park, Malaysia Continued...

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## Nymphalidae

### No Ithomiines, Diverse Danaines

Ithomiines, one of the quintessential Neotropical butterfly groups, are endemic to that region and so characteristic of the lowland rainforest understory. Their very close relatives, the Danaines, are very meager in variety in the Neotropical rainforests, with the few species of the rarely encountered, broad-winged, tiger-striped *Lycorea* accounting for the mainland Neotropical lowland rainforest Danaine fauna.

The Indo-Australian rainforests boast, by far, the greatest expression of Danaine diversity on the planet. As well, in that region, they are the preeminent butterfly group, as poisonous models and/or co-mimics in Batesian and Mullerian mimicry rings. A host of species resides in peninsular Malaysia and Taman Negara, in the following facies groups: the tigers (*Tirumala*, *Parantica*, *Radena*, *Danaus*), the crows (*Euploea*), the Smaller Wood Nymph (*Ideopsis gaura* Horsfield) and the giant Danaines – the tree nymphs (*Idea*). I was surprised and disappointed that I saw so few species and numbers (maybe 20 individuals!) during my two visits. I would like to believe this was a seasonal phenomenon and at different times of the year, Danaines are much more abundant.

Not common but seen a number of times amongst riverside vegetation was the distinctive Yellow Glassy Tiger (*Parantica aspasia* Fabricius). Unwittingly, I may have also seen their aforementioned (Part 1) excellent mimic, the female of the Pierid *Pareronia valeria* Cramer. Besides *P. aspasia*, very few other tigers were observed. Even more surprising, was only seeing a handful of *Euploea* species and individuals, even though they are the most species diverse and a quintessential Indo-Australian Danaine genus with nearly 20 species in peninsular Malaysia. As their common name implies, most are dark brown to black and most also sport some lustrous dorsal blue to blue/purple iridescence. Though seeing so very few, a highlight was seeing distinctive, white-patched *E. radamanthus* Fabricius sail among canopy tree crowns while observing butterflies from Taman Negara's excellent canopy walkway.

Seen once in a very large tree fall light gap was the translucent white, patterned with black, *I. gaura*. I'm cautiously confident that I was viewing this species and not its mimic, the aforementioned (Part 1) female of the Papilionid *Paranticopsis delessertii* Guerin.

Seen three times along rivers were *Idea* species, structurally and superficially similar to *I. gaura* but much larger and with distinctive male genitalia. I saw *I. lynceus* Drury with its smokier gray translucence and/or *I. iasonia logani* Moore, both found in peninsular Malaysia's lowland rainforests. In Taman Negara's montane forests should be found a third species, *I. hypermnestra* Westwood. The most magnificent of Danaines and among the most spectacular of the world's butterflies, seeing these giants soar aloft with hardly a wing beat, is a sight one never forgets. *Idea* can be common in season and in the right locale, as I witnessed years earlier on Borneo's Mt. Kinabalu (*I. hypermnestra*) and in the mountains of northern Sulawesi (*I. blanchardi* Marchal).

### Lacewings, not Longwings

The Heliconiine longwings, especially the genus *Heliconius*, with their distinctive wing shape and aposematic colors and pattern, are a striking characteristic of the Neotropical fauna. The German explorer/naturalist Hans Fruhstorfer long ago discerned that the Indo-Australian *Cethosia* were very close relatives of the Neotropical Heliconiini (Heliconiinae also including Argynnini and Acraeini as per Lamas et al, 2004). If presently included in the Heliconiini, Cethosia is the only non-Neotropical genus in this tribe and like their Neotropical relatives, their larvae feed on Passifloraceae. Not common during my visits, I saw *Cethosia* a small number of times flying riverside along the Tahan River. Noticeably red in flight and not flying as slowly as would be expected of aposematic butterflies, they could have been any one (or more) of three species: *C. hypsea* Doubleday, *C. penthesilea* Cramer and *C. biblis* Drury. I hardly saw them alight and nowhere close enough to see the pattern of the ventral surface, on all *Cethosia* among the most exquisite of the world's butterflies.

### The Archduke, Sailors, and Innumerable Others

This section very briefly summarizes what I encountered among the Nymphalids of the older classification system, for the most part, fast flying, sun loving butterflies of the following modern subfamilies (and tribe): Limenitidinae, Cyrestinae, Vagrantini (Heliconiinae), Nymphalinae. As in the Neotropics and Afrotropics, the Indo-Australian members of these groups, plus a small contingent of the mostly Neotropical Biblidinae, account for a

vast assemblage of butterflies whose beauty and variety are staggering. As in my visits to Taman Negara, only a tantalizing fraction of the total fauna of these Nymphalids is usually revealed in even an extensive visit to a locale.

In the Neotropical lowlands, the vast and relatively homogeneous genus *Adelpha* is the sole representative of Limenitidinae. It is a far different story in both the Afrotropics and Indo-Australian Regions, with both regions harboring many genera and numerous Limenitidines that rank as some of the most glorious Nymphalidae. Foremost among these are the forest dwelling, fruit eating members of the tribe Adoliadini; in Malaysia, this tribe encompasses: *Lexias*, *Euthalia*, *Bassarona*, *Dophla* and the less robust *Tanaecia*.

The Archduke (*Lexias pardalis* Moore) was fairly common in light gaps, along forest trails and at forest river edges, where the primary forest came right down to the river edge. The photos show the striking sexual dimorphism of this magnificent, powerful butterfly whose rapid wing beats are interspersed with short glides. According to Eliot et al (1978), above 1,500 ft, *L. pardalis* is largely replaced by the extremely similar *L. dirtea* Fabricius. The two species can be separated by the color of the apical portion of the antennae clubs, yellowish brown for *L. pardalis*, black as in the rest of the antennae for *L. dirtea*. I was somewhat surprised at *L. dirtea* also occurring at the lower elevations of our explorations.

Even more common than *Lexias* were various species of *Tanaecia*, at times very common in forest light gaps and also found along forest river edges. Having less robust bodies, they fly less powerfully than species in the other *Euthalia* group genera. A novice like myself split them into sagittate patterned individuals, representing both males and females of non-dimorphic species and also females of dimorphic species; and the striking black and blue males of either the more common *T. iapis* Godart or less common *T. godartii* Gray.

I never saw the monotypic, olive *Dolpha evelina* Stoll, *Bassarona* species only a few times, and of the 15 or so Malay Peninsula *Euthalia*, I only knowingly saw one individual. This very fast flyer was dark with a dorsal blue, marginal hindwing band, a pattern found on a few peninsular Malaysia *Euthalia*. On the forest edge at the cascades Lata Berkoh, this individual perched mostly from the middle story to subcanopy level with forays at great speeds over the open amphitheatre above the falls. I only knowing saw this individual *Euthalia*; the sexually dimorphic female Malay Baron (*E. monima* Fabricius) that I photographed close to the Tahan River, I long assumed was one of the similar looking sagittate patterned *Tanaecia* species! Along with The Archduke and The Malay Baron, are other species in this most royal group which bear common names that include titles of a similar stature – count and viscount being two others.

After the *Euthalia* group of Limenitidines, the most noticeable and numerous 'classic' Nymphalids at Taman Negara during my visits were the Limenitidines *Neptis* (Sailors or Sailers) and their relatives: *Phaedyma*, *Lasippa*, *Pantoporia* and *Athyma*. Like *Adelpha*, they are in the tribe Limenitidini and *Neptis* itself, is a huge, predominantly Old World tropical genus that has fair development in the eastern Palaearctic. A good many of the peninsular Malaysian species, as elsewhere, are dorsally black, with white bands and spots. At Taman Negara, they were most frequent in forest light gaps from the upper understory to the middle story. They perched often in forest openings and when flying, their flap and glide flight manner fit perfectly with their common name – sailers.

Superficially looking like a large black and white *Neptis*, I may or may not have seen the widespread *Phaedyma columella* Cramer, sole representative of the genus in peninsular Malaysia as in most of the Oriental Region. Fairly common and usually flying low in forest clearings were small orange and black-banded *Lasippa* and *Pantoporia* species. In peninsular Malaysia, all five *Pantoporia* species and two of the three *Lasippa* species follow this facies pattern, a novice like myself happy to discern small, orange and black *Neptis* relatives! *Athyma*, the sergeants, are larger than *Neptis* with less elongate wings and are also more robust and stronger fliers. A good many are black and white dorsally and though looking superficially in pattern like *Neptis*, their larger size, robustness and wing shape give clue to the fact that Eliot et al (1978) have them placed in the *Limenitis* group of genera in the Limenitidini and not the *Neptis* group. I'm sure I saw at least a few species of *Athyma* in Taman Negara.

The spectacular Clipper (*Parthenos sylvia* Cramer) was locally common along forest river edges, usually flying at middle story height. A Limentinine of the small Indo-Australian tribe Parthenini, *P. sylvia* has a vast range – from Sri Lanka to the Solomon Islands. The western races including West Malaysian *P. sylvia lilacinus* Butler are more stunning with their green or green and blue dorsal iridescence.

In the small pantropical tribe Cyrestinae, the Old World tropical (one Afrotropical species) map-wings (*Cyrestis*) are ecological equivalents of the Neotropical daggerwings (*Marpesia*), common along forest watercourses and also in forest light gaps. Of the five peninsular Malaysian *Cyrestis*, I saw only one, the white *C. themire* Honrath, which was locally very common along the Tahan River on my second visit. Such are the vagaries of butterfly seasonality, in the tropics and elsewhere, that on the first visit, at the same time of year and in the exact same locales, I didn't see a single one. Seen once, low along the Trenggan River edge, was an orange and brown banded *Chersonesia* (maplet) species. Smaller relatives of *Cyrestis*, all seven species have similar patterns; five *Chersonesia* species are known from West Malaysia.

Among the Heliconiines, the solely Palaeotropical Vagrantini are most closely related to the mostly Holarctic Argynnini and in the Indo-Australian Region, Vagrantini includes seven or so genera. The large orange Cruiser (*Vindula dejone* Erichson) was seen a few times coursing along the Tahan River corridor; similarly, I had seen *V. arsinoe* Cramer along Papuan watercourses many years previously. The similar *V. erota* Fabricius replaces *V. dejone* as one ascends the hills in W. Malaysia and should also be found in Taman Negara.

The Royal Assyrian (*Terinos terpander* Hewitson) was locally common in light gaps close to rivers, perching often and usually within a couple of meters of the ground. Of the seven Indo-Australian species, most have the gorgeous purple iridescence of *T. terpander* including the two other Oriental region species found in W. Malaysia: *T. clarissa* Boisduval and *T. atlita* Fabricius. According to Eliot et al (1978), both these species are much less common than *T. terpander* in W. Malaysia.

The Rustic (*Cupha erymanthis* Drury) also was locally common in light gaps close to rivers, often found in the lower understory but also into higher forest levels. It was twice seen feeding at flowers: from the canopy walk, the Rustic imbibed with other butterflies on clusters of small flowers on a middle story tree; on the first trip, clustered, bell-shaped, white ericaceous flowers on a dominant shrub among the low elevation, poor soil, scrubby forest on the Gunung Indah ridge, attracted the Rustic and a few other butterflies. The one photographed was the only one seen attracted to urine moistened sediment. With upturned abdomen, is this a female unreceptive to mating?

Somewhat similar to *C. erymanthis* (and somewhat larger), The Banded Yeoman (*Cirrochroa orissa* C. & R. Felder), is the most common of the Malay Peninsula *Cirrochroa* species. Among what I thought were *C. erymanthis* in forest levels above the lower understory, I am fairly certain I saw this *Cirrochroa* at least a few times but am unsure if I saw any other *Cirrochroa* species.

Reminiscent of Holarctic fritillaries, the few species of *Phalanta* are very widespread in the Old World tropics – from Africa and Madagascar through the Indo-Australian region to the Solomon Islands. I saw one in Taman Negara in the understory of riverine forest, most probably The Small Leopard (*Phalanta alcippe* Cramer); in southeastern Papua, I saw this same species abundant in lowland hill forest. The larger Malay species, *P. phalantha* Drury, also ranges through the Afrotropics.

Any mention of Oriental Region Nymphalinae is compelled to include the famous and fantastic dead leaf butterflies, *Kallima,* one of nature's greatest examples of protective resemblance. W. Malaysia's one species, *K. pareletka* Horsfield, is iridescent purple-blue dorsally with a broad, vibrant orange subapical forewing band. I saw one flying around riparian bamboo along the Tahan River, though bamboo is not a hostplant. Another large Nymphaline, the monotypic *Rhinopalpa polynice* Cramer (The Wizard), exhibits its own excellent crypsis. It was photographed while feeding on some foul substance along a forest trail.

## An Apaturine Resting Under Leaves

A small number of Apaturinae genera and species are resident on the Malay Peninsula. Medium-sized *Eulaceura osteria* Westwood is sexually dimorphic; the male is dark brown above with a tapering white medial band, ventrally it is dull grey-green. The only Apaturine I saw, the first individual, a male, was rather inactive as it rested under leaves with closed wings in the lower understory of primary forest. Settling on the underside of leaves is a characteristic of this species. Later another male was seen flying strongly in a very large tree fall light gap.

## A Paucity of Charaxines

Both the Afrotropical Region, with the gargantuan genus *Charaxes*, and the Neotropics, with speciose *Memphis* plus many others, exhibit very rich Charaxinae diversity. The Indo-Australian Region boasts much more modest Charaxine numbers. The genus *Charaxes*, though predominantly Afrotropical, has a moderate number of Indo-Australian species. A number of times, I believe I saw one (or more?) of the orange-brown Malay Peninsula *Charaxes* (rajahs) species flying swiftly along the Tahan river corridor.

The mostly creamy to yellowish white *Polyura* (nawabs) are endemic to the Indo-Australian Region. On my first visit, I saw a small number, along forest rivers and creeks, feeding from urine moistened sediment. The one photographed may or may not have been the same species as the others, as there are four of these smaller *Polyura* in W. Malaysia that are rather similar. Two magnificent, larger *Polyura* that should occur in Taman Negara are the whitish *P. delphis* Doubleday and the dark *P. schreiber* Godart. The last named species has some dorsal blue iridescence and a simply gorgeous ventral pattern.

The small Indo-Australian tribe Prothoini includes two species resident in W. Malaysian forests: *Prothoe franck* Godart and the monotypic, larger Glorious Begum (*Agatasa calydonia* Hewitson). In the forest on the second trip, a very large whitish butterfly flew powerfully up to my girlfriend Danusia and I, seeming to inspect for something. I immediately thought *A. calydonia* and was hoping beyond hope, it would land and thereby reveal one of the most glorious ventral sides in the Lepidoptera kingdom! Hope was dashed, as it flew around us for a few moments and sped off and disappeared as quickly as it had appeared.

## Amathusiini, Not Morphini and Brassolini

The most famous and largest Neotropical butterflies are Morphinae: the morphos of the tribe Morphini and the owl butterflies and a few large relatives of the tribe Brassolini.

# Butterflies of Taman Negara National Park, Malaysia


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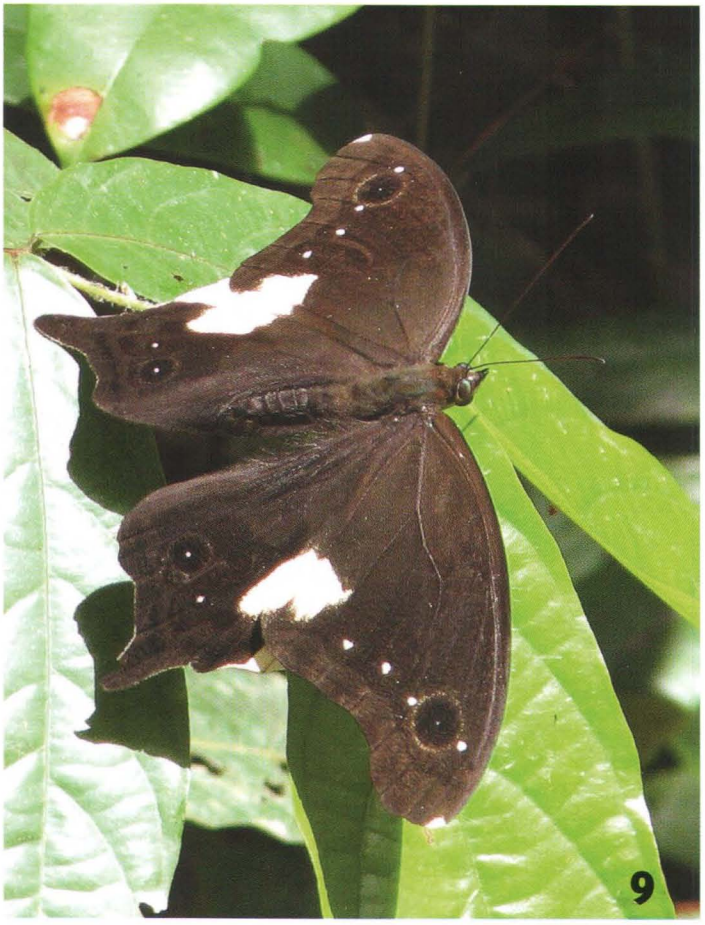



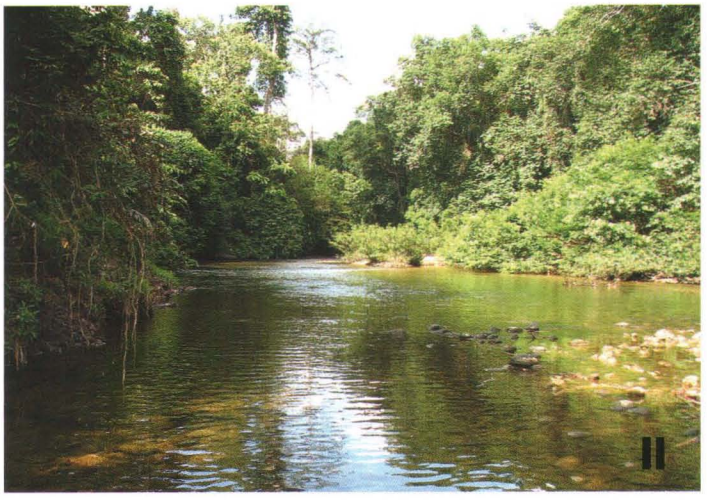


**1)** *Lexias pardalis*, male; **2)** *L. pardalis*, female; **3)** *Cyrestis themire*; **4)** *Euthalia monima*, female; **5)** *Terinos terpander*; **6)** *Vindula dejone*; **7)** *Cupha erymanthis* female? with upturned abdomen, unreceptive to mating?; **8)** *Mycalesis anapita* or *patiana;* **9)** *Neorina lowii neophyta* male?; **10)** *Mycalesis horsfieldi*? **11)** Keniam River with natural secondary vegetation.

Modern systematics, utilizing, I believe, morphology, molecular genetics and early stage biology, has placed the Indo-Australian Amathusiini as a tribe within the Morphinae. As a general rule, the Amathusiini are creatures of the forest primeval, especially the dark understory. Again as a general rule, many inhabit the lower understory close to the forest floor and remain inactive for long periods of time. In this regards, there biology is most similar to *Antirrhea* and *Caerois* of the Morphini subtribe Antirrheina. The larval hostplants of the Amathusiini, as in the Antirrheina (and some Morphina) and Brassolini, are all monocots. As for size, female *Zeuxidia aurelius* Cramer is one of the Oriental Region's (and the world's) largest butterflies; found on the Malay Peninsula, I unfortunately saw none.

Locally common and the most common Amathusiini that I saw on my two visits, was the small Amathusiini *Faunis gracilis* Butler. In general appearance including two ventral hindwing ocelli, this species is reminiscent of a large *Mycalesis* Satyrine. Like other *Faunis* species, it frequents the lower understory within a half meter of the forest floor, its warm brown dorsum very obvious when it flies. According to Eliot et al (1978), *F. canens arcesilas* Stichel (The Common Faun) is the most common *Faunis* on the Malay Peninsula. It and the much rarer *F. kirata* de Niceville lack ventral HW ocelli but have a row of submarginal whitish dots; both are also much darker ventrally than *F. gracilis*. I saw a few *Faunis* like this, which species, who knows?

The monotypic *Xanthotaenia busiris* Westwood is also a small Amuthusiini that flies close to the forest floor. Dark reddish-brown dorsally with a prominent pale yellow subapical band, it was fairly common during both visits. Seen occasionally, the spectacular, monotypic *Thauria aliris* Westwood is much larger than the previously mentioned species. One morning, I saw *T. aliris* fly low and fast across the Trenggan River. Butterflies of the forest interior do not like to tarry out in the open!

Though none of the previously mentioned species are iridescent, a good many Amathusiini sport dorsal blue/purple iridescence. An apt description for the dorsal iridescence of *Thaumantis klugius* Zinken is electric purple-blue, a blaze of deep color as they flew a short distance after being disturbed. Not uncommon on the second visit, they are denizens of the dark understory; I only saw them fly after being disturbed by us and always right above the forest floor. On the two trips, I may or may not have seen the two W. Malaysian congeners: *T. odana* Godart and *T. noureddin* Westwood.

I definitely saw other large Amathusiini with dorsal blue iridescence (*Zeuxidia*?, *Amathuxidia*?) but with a dark understory, thick vegetation and these butterflies' wary nature, good looks were hard to come by. I believe I saw at least one *Amathusia* species, which are large and non-iridescent; it rested one and a half meters up in thick riverside vegetation. On the first trip, a number of times I witnessed within a small area of forest, small congregations of Amathusiini representing a few species, with no food sources discernable. I have seen this phenomenon numerous times in the Neotropics, with Satyrines and other understory skulkers being the major participants.

## Oriental Region Satyrines

The gargantuan Neotropical subtribe Euptychiina (tribe Satyrini) contain a bewildering assortment of small to medium-sized Satyrines, the lowland rainforest species are predominantly inhabitants of the lower understory and so characteristic of that microhabitat. In the Indo-Australian rainforests, their ecological replacements are from the genus *Mycalesis* (tribe Elymniini), the characteristic small to medium-sized Satyrines of the lower understory in that region. Of the nearly one hundred species in *Mycalesis*, eighteen are resident on the Malay Peninsula. I did not see many on the first visit to Taman Negara; on the second visit we saw fair variety and numbers.

Mostly seen in the lower understory of the forest interior, I saw a couple/few in natural secondary vegetation along rivers. One *Mycalesis* was photographed amongst rank vegetation on a low bank of the Keniam River. In the *M. mineus* Linnaeus group, it possibly is *M. horsfieldi* Moore, which according to Eliot et al (1978) is rare in most of the Malay Peninsula. If this is in fact *M. horsfieldi*, I would be surprised if this rank second growth would be the primary or sole habitat for a supposed rare species.

Orangeish *Mycalesis* were fairly common on the second visit. One was seen in riparian secondary growth, the others frequented small light gaps in primary forest and perched approximately one to one and a half meters above the forest floor. Two very similar species are resident in W. Malaysia: *M. anapita* Moore and *M. patiana* Eliot, with another one or two slightly less similar species from Sumatra and Borneo. Nearly identical on the ventral surface, *M. anapita* and M. *patiana* have subtle but distinctive dorsal differences.

The gorgeous *M. maianeas* Hewitson and *M. orseis* Hewitson were photographed minutes apart in the late afternoon (5 – 6 PM), on top of a small ridge near a large buttressed tree. Rather inactive, unless disturbed by us or others of their species (male-male interactions?), they flew and perched close to the forest floor. Their activity was restricted to a very small patch of forest with contiguous forest in all directions, a couple/few individuals of both species present. These same species (same individuals?) were first observed two weeks earlier at the same spot, also in the late afternoon, and also restricted to that same small forest patch. The uncommon *M. maianeas* was only seen at this one locale, *M. orseis* at a couple/few others.

The small *Ragadia* of the Oriental Region are very distinctive with their brown and white striped venter. The Striped Ringlet (*R. makuta* Horsfield)

was local but could be common and is restricted to Sundaland. In the mountains of Taman Negara might be found The Zebra Ringlet (*R. crisilda* Hewitson); ranging south from Assam and China, the Malay Peninsular race *R. crisilda critolina* is the species' most southern extension. *Ragadia* feed on *Selaginella* clubmosses, as do many of the Neotropical true *Euptychia* Hubner, a departure from their normal monocot hostplants. It will be interesting to learn what is the relationship between these two genera.

The few species of Oriental Region *Neorina* are giant Satyrines, the Malayan Owl (*N. lowii neophyta* Fruhstorfer), along with female *Elymnias kuenstleri* Honrath, are the largest Satyrines on the Malay Peninsula. I saw the species twice, both times in sunny areas near rivers. The flight is very fast for Satyrines (and also erratic), leading butterfly cinematographer John Banks in his superb video on Malaysian butterflies, "Wonders of the East", to speculate on a possible mimetic relationship with the somewhat similar looking swallowtails in the *P. helenus* Linnaeus group. Though the swallowtail males normally patrol along the forested edges of river, they do also penetrate into light gaps back from the river, the microhabitat in which I saw *N. l. neophyta*. If there is mimicry between these unlikely partners, it will be most interesting to find out what it is based on. One of the photos shows what looks like a female, with upturned abdomen, unreceptive for mating?

The palmflies, *Elymnias*, are large mimetic Satyrines found throughout the Indo-Australian rainforest region, with the very closely related monotypic *Elymniopsis* occurring in Afrotropical rainforests. *Elymnias* mostly mimic Danaines of various genera, also *Delias* (Pieridae), and *Taenaris* Amathusiini in The Australian Region rainforests. As their common name palmflies implies, their larvae feed on various palms, especially the climbing rattans (*Calamus*). Though 10 of the 12 W. Malaysian *Elymnias* are rare insects of heavy forest, it was very disappointing and striking, during 37 days in Taman Negara's magnificent lowland forest, that I didn't knowingly see a single *Elymnias*!

I did see a small number of the endemic Oriental Region *Erites* and *Coelites*. *Erites* are medium-sized Satyrines with exquisite ventral patterns. The few I saw were not very active, resting from one to one and a half meters up in thick vegetation near rivers. There are four species on the Malay Peninsula; the one or two that I was able to look at closely were not *E. elegans* Butler, the Malay Peninsula's rarest *Erites*. It is easy to identify, as it lacks the greatly enlarged ocellus in space 2 on the ventral FW that occurs on all other *Erites*. When the Third Edition of Eliot et al (1978) was published, *Erites* life histories remained undiscovered. A wild speculation considering my scant experience, but considering where I saw them (close to rivers), maybe the hostplants are bamboos?

Rather large Satyrines, the couple/few *Coelites* I saw were in the lower understory by the forest floor among thick vegetation in primary forest. All three or so *Coelites* species have dark purple-blue dorsal iridescence; of the two W. Malaysian species, *C. epiminthia* West wood and *C. euptychiodes* Felder, the former has much more extensive iridescence. I believe I saw this species, which is also somewhat larger, as one of the sightings.

*Ypthima* is a large Palaeotropical genus easily recognized by their undersides marked with numerous fine striae and their characteristic yellow-ringed black ocelli. Differentiating the numerous similar species is a different matter. At Taman Negara, *Ypthima* were fairly common in forest light gaps and secondary vegetation along rivers. At least some of the large *Ypthima* I saw were most likely *Y. pandocus* Moore, which according to Eliot et al (1978) is one of the Malay Peninsular's most common butterflies, both in forest and secondary growth.

**To be Continued...**

The final section with associated photos will include Riodinidae, Lycaenidae, Hesperidae, Moths and a summation on Taman Negara.

**Author's notes**: as in the first part, this section is at times comparative to the Neotropical fauna. I hope this is of interest to the many I believe, have more extensive knowledge of the Neotropical fauna than the Indo-Australian fauna.

Solely for simplicity's sake and with no disrespect to later revisionary works, species level nomenclature in this report follows Eliot et al (1978). One note concerning this, as noted by D'Abrera (1982), the race *logani* Moore I believe belongs to *I. stolli* Moore and not *I. iasonia* Westwood, as in Eliot et al (1978) and this report.

Higher level systematics at times departs from Eliot et al (1978) and follows some of the more modern works referenced below: Heliconiini and Argynnini are tribes within the Heliconinae, Indo-Australian Region Euthaliini are included in the Palaeotropical Adoliadini, Cyrestinae is used instead of Marpesiinae, Vagrantini replaces most genera in the Old World tropical Argynninae and Amathusiini are included in the Morphinae.

Also for simplicity's sake, subspecific trinomials are only used in a few cases where I wish to make a specific reference concerning the Malayan race.

All photos were taken with a Canon Powershot S3 IS: most in natural light, *Thaumantis klugius*, *Mycalesis maianeas* and *Mycalesis orseis* using a flash in the dark understory.

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*Continued on pp. 97*

# *Wyliea mydas* (Brauer) 1895: Observations of a large robber fly preying on butterflies in the White Mountains of Arizona

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Robber flies are predatory dipterans in the family Aslidae. The family contains in excess of 5,000 described species worldwide and over 880 described species in North America north of Mexico. Robber flies in the North American fauna range in size from approximately 5 to 32 mm, with the majority being in the 9 to 15 mm range. They occur in many different habitats, with dry, sandy areas ranking among those that support the most diverse asilid faunas.

Robber flies feed primarily on other flying insects and capture their prey by intercepting these other insects in flight. Butterflies have previously been recorded in the literature as being captured by robber flies, although the particular species of robber fly is often unidentified. For example, in The Butterflies of Georgia by L.H. Harris, Jr., it was noted under the entry for *Parhassius m-album* (White-M Hairstreak):

"A most unusual accidental catch was made by John Symmes when collecting near his home with Dr. John M. Burns and me on August 22, 1967. A robber fly (*Asilus* sp.) was flying rapidly by with a small butterfly impaled on its beak. Symmes made a quick sweep with his net: to our surprise, the victim of the robber fly was *P. m-album*!"

Many Robber flies are components of so-called mimicry rings with a number of hairy species bearing yellow and black markings similar to bumble bees, while others are clearly yellow jacket or hornet mimics. The mimicry serves not only to deter predators, but allows the mimics to approach similar-looking prey items without alarming the victims. In the West, where wasps in the genus *Pepsis* with characteristic blue-black bodies and bright amber wings known as tarantula hawks occur, some robber flies bear similar colors. One of these, *Wyliea mydas*, was fairly common in the White Mountains of Greenlee and Apache counties, Arizona during August 2007 based on the observations of the authors, while others reported this species in other parts of Arizona as well as New Mexico during the same period (Fisher, pers. comm.).

We report here on two species of butterflies that were captured and killed by the robber fly *W. mydas*. On August 12, 2007, while collecting at Campbell Blue Creek, (mile marker 244 on Rt. 191) the junior author directed the senior author's attention to a large robber fly with bright orange wings perched on the stem of a composite plant species, grasping a dead *Vanessa annabella* (West Coast Lady). The butterfly had its wings folded below the plane of its body with the upper surfaces exposed, that is, in the position that collectors find it necessary to fold back the wings before they lock into that position. The large robber fly was collected but the dead butterfly fell into the tangle of thorny vegetation and was not recovered. That day, four other specimens of this robber fly species were collected (see photo pp. 75).

On August 13, 2007, at the same location, a *Colias eurytheme* (Orange Sulphur) was seen flying from flower to flower (the same composite species referred to above) when it was suddenly grabbed from behind in mid-flight by a large robber fly of the same species. The robber fly carried the butterfly up a slope covered with pine trees and disappeared.

On three other occasions that day, we witnessed individuals of this *W. mydas* chase after the large butterfly *Speyeria nokomis nitocris* (Nokomis Fritillary). These strong-flying butterflies were chased for up to twenty seconds or so, but we did not see any captures nor did we see the robber flies actually come into contact with any of the *S. nokomis*. It was not clear whether the *S. nokomis* were fleeing from the robber fly chasing them or were simply maintaining their powerful patrolling flight oblivious to the threat from the robber fly. All the *S. nokomis* that we saw being chased were males.

Although it was not clear to us whether the *S. nokomis nitocris* males were taking deliberate evasive actions, observations by Dr. Eric M. Fisher, Senior Insect Biosystematist (ret.) with the California Department of Food & Agriculture on this species' interactions with butterflies indicate that butterflies do respond to being chased by *W. mydas* by spiraling upwards. This evasive action is familiar to butterfly observers who have seen male butterflies fly upward in spiral flights when chased by other males. Dr. Fisher's observations were made in August of 2007 in Gila National Forest in the Silver City area of New Mexico. He noted perhaps a dozen instances of this species preying on small pale butterflies. A photo provided by Dr. Fisher showed a *W. mydas* specimen he collected with its captured prey – a skipper in the *Pyrgus communis/albescens* complex.

According to Dr. Fisher, the distribution of *W. mydas* is restricted in the United States to Arizona and New Mexico. Dr. Fisher also has records

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# Field Occurrence of Interspecific Copulation of a male *Papilio glaucus* and a female *Papilio troilus* (Lepidoptera: Papilionidae)

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This report describes a copulation event observed by one of the authors (SCM) in western Lehigh County, Pennsylvania. This author has only recently resumed the active pursuit of nature photography in general and entomology in particular after a hiatus of 40 years and wishes to apologize for not being aware of the significance of this event at the time and, thus, not recording observations and acquiring useful data which might have been available. This report is based on recollections, physical data gathered after the fact, and analysis of 86 digital photographs of the event.

On June 2, 2008, while on a routine walk around his property and prepared to take photographs, this author observed a male *Papilio glaucus* L. approach a large *Abelia grandiflora* (Caprifolicaeae) bush from the opposite side. Not wanting to startle the butterfly, the author did not immediately approach him but remained hidden, occupying himself by photographing a skipper while waiting for the *P. glaucus* to move to his side of the bush. After about 2.5 minutes, the *P. glaucus* was observed flying away from the bush and approaching a point on the nearby lawn about 8 m distant to the east and about 1 m lower in elevation. A female *P. troilus* L. (assumed at the time to be a dark morph female *P. glaucus*) was seen at that point. Recognizing that a mating event was about to occur, the author approached cautiously and began taking several pictures per minute (Fig. 1, pp. 75). At about 2.5 minutes into the session, picture taking was interrupted for 3.5 minutes to change the camera's memory card after which picture taking resumed for an additional 13 minutes. Total observed elapsed time was about 20 minutes, after which the author departed for about 10 minutes. When he returned, both individuals had departed; thus, it is concluded that the mating event lasted between 20 and 30 minutes.

The female *P. troilus* was not observed in flight just prior to mating, although a *P. troilus* had been seen in the area shortly before on the day in question. No premating behavior was observed. It is entirely possible that the female was on the Abelia bush in the minutes prior to mating.

The location is a 10-acre residential property located near the top of a hill about 50 m in height. The copulation event occurred 10 m SE of a house built on a SE facing slope at the NW corner of a ~1 hectare clearing in a mixed hardwood forest. Spicebush (*Lindera benzoin*), sassafras (*Sassafras albidum*), wild black cherry (*Prunus serotina*), white ash (*Fraxinus americana*), basswood (*Tilia americana*), and magnolia (*Magnolia grandiflora*) are present. Tuliptree (*Liriodendron tulipifera*) is absent. Table 1 (pp. 72) lists various environmental conditions determined locally and from climatological data for nearby locations.

Both *P. glaucus* and *P. troilus* are locally common and double-brooded in Lehigh county. The two broods of these species peak in May-June and August. The unpalatable *Battus philenor* is locally uncommon; the mimetic dark morph of *P. glaucus* constitutes only approximately 10-15% of *glaucus* females in the county. A broad E-W hybrid zone of *P. glaucus* x *P. canadensis* resides 60 km directly north of the observed copulation on the Pocono Plateau (Scriber, 1996). Though the univoltine *P. canadensis* does not occur in the county, some introgressive *canadensis* characters are found in the *glaucus* population. Note the continuous yellow submarginal band of

| Datum | Value | Source |
|---|---|---|
| Date/Time | 6/2/2008 15:14:26--15:33:42 EDST | Camera EXIF Data |
| Location | 40.5699°N, 75.7017°W (±0.0002 °) | GPS reading, Google Maps |
| Elevation | 220±10 m | Google Maps (topographical map) |
| Temperature | 26.0±1.0 C | NOAA Rodale COOP, Penn State Climatologist |
| Sky | Full sun, blocked by clouds at times | Analysis of photos, EXIF data, Rodale COOP |
| Humidity | 30±5 % RH | Penn State Climatologist |
| Pressure | 986.4±0.1 mb | Penn State Climatologist |
| Wind | 5±2 km/h (unknown direction) | Penn State Climatologist |

**TABLE 1:** Environmental Conditions at time of Sighting.

the male's ventral forewing in Fig. 1 (pp. 75).

To our knowledge, this report is the first documentation of an interspecific mating between *P. glaucus* and *P. troilus* in the field. Despite its rarity, such hybridization is not unexpected since these species belong to the same subgenus (*Pterourus* in Pelham, 2008). Sperling (1990) estimated that a minimum of 6% of the more than 200 *Papilio* species hybridize naturally. Most hybrids derive from interspecific matings within the same species group (Wagner, 1978; Sperling, 1990; Scriber, 1996; Rahn, 2001; Warren, 2007). Interspecific copulation between genetically distant swallowtails has also been reported, but less frequently (Deering & Scriber, 1998; Hereau & Scriber, 2003). The fate of the eggs (if any) of this *P. glaucus* x P. *troilus* mating is unknown. Hand-paired laboratory hybridization has shown that con-subgeneric species display lower genome incapability than those of different genera (Tyler et al., 1994; Scriber et al., 1996). Because the male *glaucus* in this event was visually attracted to the dark female *troilus*, it is apparent his mate recognition system was not species-specific. Evidently within a common mimicry system involving a distasteful model and several mimics, one close mimic (female *troilus*) can be mistaken for another close mimic (dark morph female *glaucus*). One wonders if this might happen more often when the con-specific mimic (dark morph female *glaucus*) occurs in low frequency.

## Acknowledgments

*We gratefully acknowledge Dr. Mark Scriber, Department of Entomology, Michigan State University for his encouragement to publish this observation. The photo in the figure is copyrighted by the author (SCM); please write to this author to request permission for use. The author has additional images in the series depicting the male approaching the female, grappling with her, sexual contact, and copulation. These photos can be shared with those interested in studying the event.*

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# Zygaenidae and Their Three Defenses

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Zygaenidae (Burnets) are not very well represented in the fauna of North America. They are more numerous in the Old World than in the New, and the genera found in the New World are mainly aberrant. The larva is short and cylindrical. Pupation takes place in a silken cocoon (Holland).

Zygaenidae are small to middle sized moths with daily activity. There are approximately 1,000 species worldwide, about 60 of them in Europe. I would like to present a picture of two common species of middle European Zygaenids, *Zygaena filipendulae* (Linnaeus), and *Zygaena carniolica* (Scopoli) nectaring upon a blossom of a *Centaurea* sp. (Asteraceae) (see photo pp. 75). The picture was taken on July 15, 2006, Central Bohemia, Czech republic, Europe. Altogether six individuals are sitting at about 12:00 noon (local time) on the blossom of a relatively small flower.

The size of a spread specimen of a *Zygaena* is about 38 mm. Caterpillar host plants are various Fabaceae (*Lotus*, *Coronilla*, *Onobrychis*, etc.). Zygaenidae fly on sunny days only; they prefer dry, stony slopes. They fly very slowly and behave as if "lazy". They are not shy or fearful. They can be easily approached and touched. This behavior is the result of three defensive systems Zygaenidae have available.

1) The European Zygaenids are very colorful, usually the combination of red and blue-black, or yellow and black. This is an aposematic warning coloration and appearance when it is in green terrain.

2) The second defensive system is based upon "cryptic" coloration. When sitting on a red blossom – which the Zygaenids prefer – it merges with the flower coloration and almost disappears (see photo pp.75).

3) The third defensive and protective system is the strongest one: an active

*Continued on pp. 87*

# Pacific Slope Section of The Lepidopterists' Society 55TH Annual Meeting, Alturas, California, July 11-13, 2008

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The Pacific Slope Section consists of members of The Lepidopterists' Society who live in the western states and Canadian provinces. Our 55th annual meeting was organized and hosted by Laurence and Denise Crabtree at Alturas, near the base of the Warner Mountains in the northeast corner of California. Despite living an hour's drive away, the Crabtrees did a fine job in arranging for facilities.

On Friday, Sterling Matoon led an all-day field trip to various parts of the Warner Mountains, returning in time for a barbecue that evening, hosted and cooked by the Crabtrees. It, as well as the Saturday meeting session, was held at the Federated Church. Most of the moth people then headed for the hills, finding excellent collecting at several sites.

We had a meager but varied and interesting program on Saturday morning , July 12:

**Sterling Matoon**, Bakerfield, CA, Gave an introduction to some Modoc butterfly habitats and organized an afternoon field trip.

**Kelly Richers**, Bakersfield, CA, updated us on the California, Arizona, and Nevada County Moth List

**Robert Pyle**, Gray's River, WA, arrived in time to describe his ongoing First Butterfly Big Year, in which he is visiting widespread parts of North America in an effort to compile a list of the most butterfly species seen by one person in a year, with subscribers donating to the Xerces Society.

**Paul Opler**, Ft. Collins, CO, described the challenges he and Powell have faced in writing a book on Moths of Western North America, now in production at the U.C. Press.

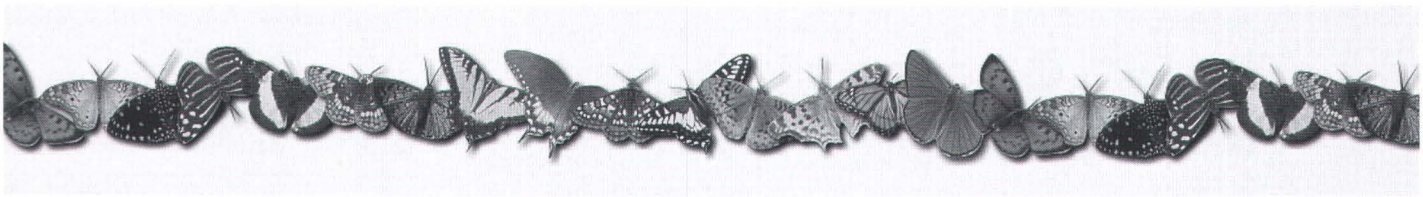
**Paul Johnson**, Pinnacles Natl. Monument, CA, presented field observations of *Euproserpinus* (Sphingidae) by a series of truly fine images of living moths and larvae at the Carrizo Plains Natl. Monument.

**Liam O'Brien**, San Francisco, CA, described Recovery Efforts for the Green Hairstreak in San Francisco, an effort to get the public involved in urban conservation.

**Jerry Powell**, Berkeley, CA, reported on the Discovery and Biology of *Anatralata versicolor* (Crambidae) in the San Francisco Bay area, a diurnal species formerly thought to be primarily montane, which feeds as a leaf miner in *Wyethia angustifolia* .

After an uncharacteristically long business meeting for this group, during which we failed to select a site for the 2009 meeting, and a group photo, we dispersed for lunch. Then several carloads of intrepid collectors fanned out into the Warner Mountains, with moderate success despite an unusually dry spring.

Saturday evening we convened at The Brass Rail for libation at seriously outdated prices and a fine Basque style dinner. The John Adams Comstock student award was not given as there were no student contributors to the program. Kelly M. Richers was recognized as The Person We Honor, and he followed with an entertaining account of his born again career in pursuit of Lepidoptera. At dusk, moth collectors again repaired to the Cedar Pass area, only 20 minutes drive, for blacklighting. A few of the butterfly people made a 2.5 hour drive to Lassen National Park for the 2nd annual butterfly count on Sunday, organized by Joe Smith, who unfortunately, was derailed from attending the meeting by road closures due to forest fires in northwestern California, so was unable to promote interest in the count.



# The Lepidopterists' Society Pacific Slope Section John Adams Comstock Award Honoree for 2008: Kelly M. Richers

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Kelly Richers, a born-again lepidopterist with a fervor, burst upon our complacent scene in the 1980s and soon became an activist in the Lepidopterists' Society and major domo of western moth distribution records. Born Kelly Patrick Moran in Washington, D.C., in 1952, he adopted his surname from his stepfather. Otto Richers worked for NATO and took the family to Germany for four years, enabling young Kelly to visit most of the European and Mediterranean countries. When Kelly was 12, the family returned to the U.S. and settled at State College, Pennsylvania, where he attended high school and college.

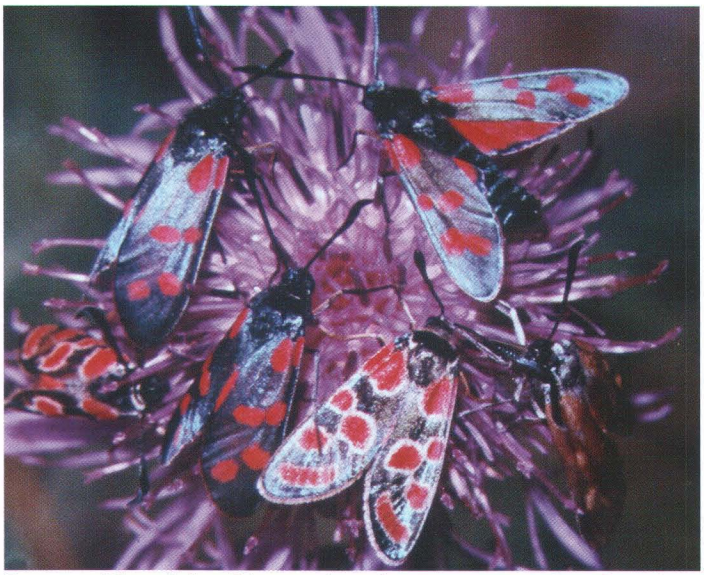
An early interest in collecting insects began in junior high school as a result of a biology class assignment. However, as often happens, that interest was displaced by sports, girls, and other distractions in high school, and his early collections were lost to dermestids and home moves. He attended Pennsylvania State University on a wrestling scholarship and graduated with a B.A. in Health and Physical Education in 1974. He then taught health education for two years in a state correctional facility, which he says prepared him perfectly for teaching junior high school, and he did so in Pennsylvania in 1976-1978. In the latter year, on a visit to California, Kelly met his future wife, Linda, was smitten, and abruptly changed the course of his life. He moved to California and spent six years working in office supply business in Long Beach and Bakersfield, where he married in 1982. They have a daughter, Katherine, 21, who assisted at the Bakersfield meeting and has helped drag Kelly into the modern computer world. He returned to teaching in 1986, earned credentials to teach Earth Science, General Science, and Life Science and subsequently has been a vice principal of a middle school for nine years and principal of elementary and middle schools for six years. He has been awarded the title of Administrator of the Year twice from his professional organization , The Association of School Administrators for Central California, and is President of that organization for Kern County, none of which should surprise any of us, having seen his proven leadership abilities first hand.

Even so, Kelly found living in California had its drawbacks; the hunting and fishing opportunities he had enjoyed in the mountains of Pennsylvania are much more difficult here, so he decided to revive his interest in Lepidoptera. In 1984, he joined The Lepidopterists' Society and began attending our Pacific Slope Section meetings, first at Camp Norris, Barton Flats, where he met Ron Leuschner. He became a regular visitor to the Los Angeles County Museum, and through Ron's and Julian Donahue's influence was converted to moth collecting

My earliest recollection of Kelly is at Turkey Creek in the Chiricahua Mountains at our 1986 field meeting — he met us at the door, handing out golf caps monogrammed for the meeting. I thought 'whoa, just what we need, a young, enthusiastic, energetic collector who might take a lead in organizing our activities.' Indeed, he has been much more . . . those early meetings led to his hosting the Pacific Slope Section at Camp KEEP in Tulare County in 1995 and 2002, and ultimately The Lepidopterists' Society Meetings in Bakersfield in 2007, which was essentially a one-man orchestration, a feat no other person has attempted since the early days of the Society. Kelly has become a regular participant in our national meetings and Treasurer of the Society, spokesperson for its financial decisions, as well as industrious collector en route around North America, to Alberta, Utah, Maryland, Georgia and points between.

But Kelly Richers' most impressive accomplishment has been the *California State Moth Species List* of county records, which he initiated in 1996. After learning to his shock, dismay, and incredulity that we professionals in the universities and museums, busy with our nit-picking doodlings to impress each other, had never gotten around to compiling even a list of the species names of moths in California, he proposed to create a database, not only of the species, but all their county records. He approached me with the idea, which I viewed as improbable and interminable. I gave him a realistic opinion of the magnitude of the chore, which ought to have discouraged any sensible person, and I provided a box of reprints of taxonomic monographs from which he could start recording published records. I figured that would be the last I would hear of it, but as we all now know, one cannot underestimate Kelly's energy, and upwards of 34,000 records later,

*Continued on pp 76*



*Zygaena filipendulae* (Linnaeus), and *Zygaena carniolica* (Scopoli) nectaring upon a blossom of a Centaurea sp. (Asteraceae). See article on pp. 72.

**Fig.1.** Interspecific copulation of male *Papilio glaucus* (on right) and female *P. troilus* (on left) in Lehigh County, Pennsylvania, June 2, 2008. Photo by Stephen C. Menasian. See article on pp. 71.

## Painted Lady (*Vanessa cardui*) Outbreaks and Rainfall in 2005

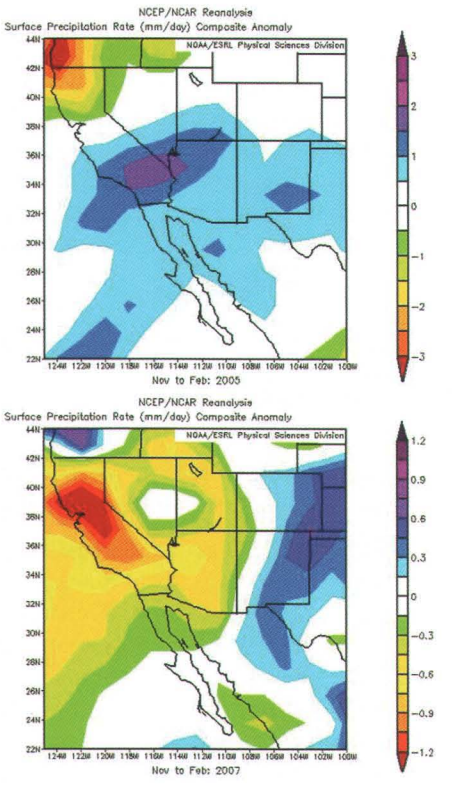



**Fig. 1** The upper panel shows the deviation from normal rainfall for the period November 2004 through February 2005. The lower panel shows the deviation from normal rainfall for the period November 2006 through February 2007. (See article pp. 84)

Two, of several specimens, of *Wyliea mydas* collected in the White Moun-tains of Arizona as they dined on lepidoptera. See article on pp. 70.

## A New Swallowtail Record for the United States

*Mimoides p. phaon* photographed by Martin Reid at Santa Anna National Wildlife Refuge, Hidalgo Co., Texas, October 23, 2008. See article pp. 87.

# Recent Additions to C.P. Gillette Museum, Colorado State University

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During the past 15 months, three major collections have been donated to the C.P. Gillette Museum at Colorado State University. In May 2007, the last drawers of the Ray E. Stanford collection were received. This collection, which forms the background of our collection, had been donated over a period of several years. This collection of flawlessly curated specimens was especially strong in material from Colorado and other nearby states. Ray's first love is the Hesperiidae and the collection is especially strong with long series of many western species. Ray has donated much of his library and many of these were added to the Morgan Library which has perhaps the finest selection of Lepidoptera literature in the region.

This past spring the Karolis Bagdonas collection was donated to C.S.U. by his family. This collection comprises some 400 or more pinning boxes of moths and butterflies and documents Karolis' extensive studies in the Rocky Mountain Region. Especially well represented are the Colorado Front Range, as well as Fremont and Teton Counties, Wyoming. Karolis and his Bagdsonas Flying Circus were well-known for their enthusiasm and intense investigations. Karolis was a teacher and mentor for several people who have become successful contributing biologists. An article on Karolis' contributions to the field is contemplated, and any information would be welcome!

Recently, Richard W. Holland has donated the major portion of his Lepidoptera colelction to Colorado State University. Together with previous donations, this amounts to almost 170 drawers of spread butterflies and moths. Richard retains some material that is still under study. The collection is especially rich in material from New Mexico and northwestern Mexico. Richard travelled to many sites off the beaten track and made many discoveries, most of which are documented in publications and by his material. Especially valuable is the wide representation of many species, ranging from those that were uncommon and even common species. Richard is currently home-bound with a chronic illness, and we wish him well.

It should be mnentioned that we continue to receive donations of smaller collections over time. These include material from Donald E. Bowman, Ken Davenport, Scott Ellis, Cliff Ferris, Chuck Harp, John Hyatt, Robert L. Langston, Gary Marrone, John Nordin, Charles P. Slater (deceased), J. Bolling Sullivan and others. All donors are well appreciated. As a result of these kind contributions,. the Gillette Museum may have the largest institutional collection of Lepidoptera in the Intermountain West, Rocky Mountains, and Great Plainbs regions. We are willing to entertain any requests for research loans. Please refer to our web site **www.ColoState.edu/depts/bspm/museum/home.html**

# John Adams Comstock Award Honoree 2008: Kelly Richers

*Continued from pp. 74*

representing 4,324 species, we have a state and county list of the moths. Every record includes taxonomic names, source of the record, county, locality, date, collector, and ID authority — a truly monumental accomplishment— and now he has started databasing Arizona and Nevada records!

Numerous lepidopterists, including some of us here today, have helped by providing records, but it was Kelly who abstracted the literature and spent many weekend-long marathons searching the collections at Los Angeles, Berkeley, and Davis to exhume historical records from specimen labels, an unbelievably tedious exercise. Armed only with a laptop, a box of powdered donuts, and incredible patience, and catching cat naps in the museum floor, he alone entered thousands of records into the burgeoning database.

Evidently having not enough on his plate, in 2000 Kelly launched a series of articles, *Classic Collecting Campaigns*, published in the News of the Lepidopterists' Society, describing with characteristic sardonic humor, habitats and his visits to historically important collecting localities in Arizona and southern California.

For having done a great deal to help promote our society and its discipline, serving as meetings host, financial manager, organizer of our collections records, and tireless field companion with ample supply of beer and extra batteries in his truck, we take special pleasure in naming Kelly Richers as Honoree for the 2008 John Adams Comstock award.

# Conservation Matters: Contributions from the Conservation Committee

Administrative rule changes have been proposed to a key provision of the United States Endangered Species Act (ESA). While few of us have likely heard of Section 7 consultations, it has been one of the most effective tools for conservation of imperiled species in the United States. The ESA requires federal agencies to consult with wildlife experts at the Fish and Wildlife Service to ensure that their actions do not jeopardize a listed plant or animal, or harm or destroy its habitat. These independent reviews, called Section 7 consultations, provide a critical safety net for imperiled wildlife and help ensure that Federal actions do not harm those species most at risk. The proposed changes, designed to "streamline" the Section 7 process, allow non-biologists to make initial determinations relative to the project's impact on listed species. Someone without training in conservation, or any biological science, will be able to evaluate projects and, in some cases, allow these to proceed without further review.

Currently, about 70,000 federal actions per year have triggered consultation. On average, between 85 and 95 percent are resolved through informal consultation. Informal consultation allows the project, with agreement from the wildlife agencies, to proceed with or without project modifications. These (external) informal reviews offer crucial safeguards for listed species.

When a Federal agency determines, through a biological assessment or other review, that its action is likely to adversely affect a listed species, the agency submits to the Service a request for formal consultation. During formal consultation, the Service and the agency share information about the proposed project and the species likely to be affected. Following formal consultation, the Service prepares a biological opinion on whether the proposed activity will jeopardize the continued existence of a listed species. The Service also provides the consulting federal agency with reasonable and prudent alternative actions that are designed to minimize or mitigate for negative impacts to listed species.

As required by law, comments were solicited from the public regarding the proposed rule changes. Because of the importance of the proposed changes, the Conservation Committee developed a consensus that our Society should provide comments. With concurrence of the Executive Council and our President, we submitted the following letter. As of this writing, the fate of the proposed rule changes is unknown.

THE LEPIDOPTERISTS' SOCIETY EST. 1947

**THE LEPIDOPTERISTS' S**

A non-profit, scientific, international organiza
professional and amateur lepidopterists sinc

October 13, 2008

Public Comment Processing
Attention: 1018-AT50
Division of Policy and Directives Management
U.S. Fish and Wildlife Service
4401 North Fairfax Drive, Suite 222
Arlington, VA 22203

**Subject: Proposed Rule to Amend Part 402 of Title 50 of the Code of Federal Regulations Implementing Section 7 of the Endangered Species Act of 1973**

Thank you for the opportunity to comment on the proposed rule to amend part 402 of title 50 of the Code of Federal Regulations, which implements section 7 of the Endangered Species Act of 1973. The Lepidopterist' Society has always placed much emphasis on the science associated with butterflies and moths. As stated in our Constitution,

*"It shall be the purpose of the Society to promote internationally the science of lepidopterology in all its branches; to further the scientifically sound and progressive study of Lepidoptera; to publish periodicals and other publications on Lepidoptera; to facilitate the exchange of specimens and ideas by both the professional worker and the amateur in the field; to compile and distribute information to other organizations and individuals for purposes of education and conservation and appreciation of Lepidoptera; and to secure cooperation in all measures tending to that end."*

There are now members in over 60 countries although the majority are from all 50 United States and 10 Canadian provinces. The Lepidopterists' Society embraces a wide range of interests and viewpoints concerning the study and appreciation of moths and butterflies.

Members of the Society have a keen interest in lepidopteran conservation, and the Society has a standing Conservation Committee. Across the country, the members of the Society have worked with the U.S. Fish and Wildlife Service (FWS) and many other federal, state and local partners to conserve threatened and endangered species through several authorities provided under the Endangered Species Act of 1973. Our members have provided much of the science that underlies the recovery and management of listed lepidopteran species and have served numerous roles on Recovery Teams across the country.

Especially relevant to our members' interests and work to conserve lepidopteran species and priority habitats in recent years is a close working relationship with the FWS and Federal action agencies to implement mitigation projects for species under section 7 formal consultations that have required the implementation of reasonable and prudent alternatives to proposed agency actions. In these cases, our members helped shape constructive compromises that have allowed those actions to proceed while avoiding harm to protected species and their habitats. For example; military training exercises still proceed on sites occupied by listed butterflies, but with relatively minor adjustments to ensure that listed species persist on bases; National Forests still manage for timber production, but use strategies that minimize impacts to sensitive species; and highways are maintained and upgraded in ways that do not degrade habitats and hydrology for listed species. The Service has a tradition of developing project alternatives that have ensured a project was able to move forward to accomplish its original purpose (i.e., the bridge or highway was built), but ESA-listed species and their habitat were protected. It is critical that this balance between the federal action agency pursuing its specific mission and charge while also meeting its affirmative, overriding and mandatory duty to avoid jeopardizing the continued existence of listed species be maintained.

The Lepidopterists' Society believes the proposed changes to the section 7 regulations would, in many cases, be detrimental to listed species and habitat conservation on the ground. We understand that approximately 85% of Section 7 consultations are "informal", reflecting the solid partnerships between federal agencies and the small impacts that most activities may have on listed species. We also understand that very large projects will likely require formal Section 7 consultations under the proposed rules. However, we worry that seemingly insignificant projects that have significant impacts to listed species will move forward without having the benefit and expertise of the FWS.

The proposed rule appears to provide nearly unilateral authority to federal action agencies, and shifts the threshold of impact that triggers a consultation away from species protection towards project imperatives. Threshold decisions are now placed in the hands of federal action agencies with incentives to move projects forward, not conserve our national natural heritage. There are likely thousands of examples across the country where action agencies have developed internal determinations of no or minimal effect on listed species that have been reversed following the Service's review. We believe that the proposed rule will create pressure within action agencies to ignore or downplay negative impacts to listed lepidopteran species. The proposed rule allows action agencies to remove from action those effects that are deemed "inconsequential, uncertain, unlikely or beneficial that they are, as a practical matter, tantamount to having no effect on a listed species or critical habitat." These undefined qualifications provide substantial leeway for projects to move forward without consultation.

Moving initial determinations of impact to action agencies is further complicated by the proposed rule's new definition "effects of the action" and the new causation standard to be used for determining effects of agency actions. Based on our reading, ongoing impacts to listed species resulting from historical actions from action agencies will not be addressed unless a newly proposed action is determined by "in house" staff to exacerbate the ongoing negative impact. Again, the pressure to find "no effect of action" within action agencies will be intense.

Cumulative impacts to listed species from seemingly minor actions will likely be ignored. The resulting incremental impacts to habitat can create unstable conditions to populations, especially as habitats for listed species become increasingly fragmented.

The Lepidopterists' Society's Position on the Proposed Rule

The Lepidopterists' Society believes the proposed changes weaken the ESA by giving decision making authority for informal consultation to action agencies that have no vested interest in conserving listed species. Combined with newly proposed and ambiguous definitions and the shortened timelines for informal and formal consultation by the Services, the Section 7 consultation process will be severely weakened. If implemented, the proposed rule will give Federal action agencies unilateral authority to determine whether an informal consultation takes place. Many Federal actions would be expected to move forward with little to no involvement of the Services, to the detriment of the many listed lepidopteran species that are dependant upon federal lands, managers, and agencies.

In summary, the Lepidopterists' Society has strong concerns with the changes proposed by the Services in the proposed rule and believes these changes would allow Federal agency actions to move forward with little regard to their impacts on ESA-listed species and their habitat.

John A. Shuey

Dr. John A. Shuey
Chair of the Conservation Committee
Lepidopterists' Society

# New sightings of *Glyphodes onychinalis* (Guenée) (Pyraloidea: Crambidae: Spilomelinae), a recent arrival to the United States with a description of the larva reared on oleander (*Nerium* sp.) in California

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**Abstract.** In 2007 and 2008, Don Sterba of Culver City, Los Angeles Co., observed the adults of *Glyphodes onychinalis* (Guenée), a non-native crambid, in large numbers. It was first reported new to the United States from Newport Beach, California in 2000 where it was reared from oleander (*Nerium* sp.). The larva of this Afro-Asian species is described for the first time based on material collected from the initial report.

**Key words**. *Glyphodes*, oleander, *Nerium*, larval morphology, California

Don Sterba of Culver City on August 15, 2007 wrote: "Last night, between 9 and 11 pm, I saw at least 20 "*Glyphodes onychinalis*" in my front yard. Most were in the vicinity of Star Jasmine (*Trachelospermum* sp.) plants near my front porch (10755 Molony Rd), and I saw 3 separate individuals insert their proboscises into Jasmine flowers (Fig. 1, pp. 95). Nearly all the flying moths left the area; many slowly gained altitude until I lost them in my flashlight beam. I found two that seemed content to rest on the undersides of Jasmine leaves."

Ron Leuschner, on August 23, 2007 wrote: "I have been catching this [species] in my back yard [in Manhattan Beach] for two years now, with records for 25 July 07, 27 July 06 and 20 Aug. 06. Also, friends from Madrona Marsh Preserve in Redondo Beach, CA (also LA Co.) say there were a bunch of them there this Spring."

On August 2, 2008 Don Sterba reported: "I found 3 more moths at Village Green NNE of Culver City, near the SW corner of Rodeo Rd and La Brea Ave, more than 2 miles from my home in Culver City. Two moths were in the same Star Jasmine hedge where I found a single moth on June 19 (Fig. 2), and the other moth was at a new location, in a Star Jasmine. I've noticed an increase in nocturnal flights lately, with the moths initially hovering a few feet above the ground for several seconds before eventually rising steadily into the air and disappearing from sight, out of range of my flashlight. They seem to

prefer warm nights for this activity." Two weeks later Don reported: "Yesterday (Friday, August, 15) I discovered a new source of moths - the Manhattan Beach Botanical Garden, a tiny area (~1/2 acre) on the west side of Polliwog Park that harbors a selection of native plants (and not a single Star Jasmine). I saw a total of at least 6 moths on St. Catherine's Lace (*Eriogonum giganteum*), Santa Cruz Island Buckwheat (*Eriogonum arborescens*), and Lion's Tail (*Leonotis leonurus*), although those may simply have been temporary hiding spots."

Based on observations above, this exotic moth species has increased its distribution in California since its first report in 2000. Damage by *Glyphodes onychinalis* (Guenée) was first reported on August 29, 2000, when a resident of Newport Beach phoned the local California Department of Food & Agriculture (CDFA) detection office to report damage to his ornamental plantings of oleander. M. Tafreshnia with the CDFA visited the site and brought several larvae back with him that were reared by N. Nisson (CDFA) (Fig. 3, pp. 95). N. Nisson visited the site again September 14, 2000 with R. Garrison (CDFA) and R. Penrose, but collected only one larva (Fig. 4, pp. 95) that was preserved and is described below (this voucher deposited at the National Museum of Natural History [NMNH], Washington, DC).

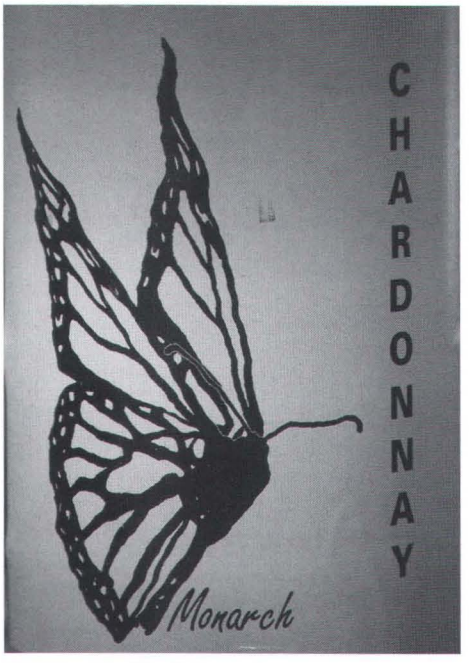
The damage of two of four long-established oleanders was extensive (Fig. 5, pp. 95), with many tips dead from stem boring (Fig. 6, pp. 95), extensive frass around the base, and many pupal skins in the debris around the base of the plants and in debris clusters at the blossom heads. One quarter mile south of the previous location, several larvae were collected from unopened oleander flower buds. At the second location, they were acting as bud borers, with no sign of leaf skeletonizing or stem boring. Adults were reared from both locations. The specimens were originally identified by Michael Shaffer at The Natural History Museum, London, and confirmed by me on December 13, 2000 for Tom Eichlin (CDFA) [Eichlin, T. D. & S. A. Kinnee. 2001. Interesting moths recently found in California: an oleander moth. Plant Pest Diagnostics Branch 2001 Annual Report: 3].

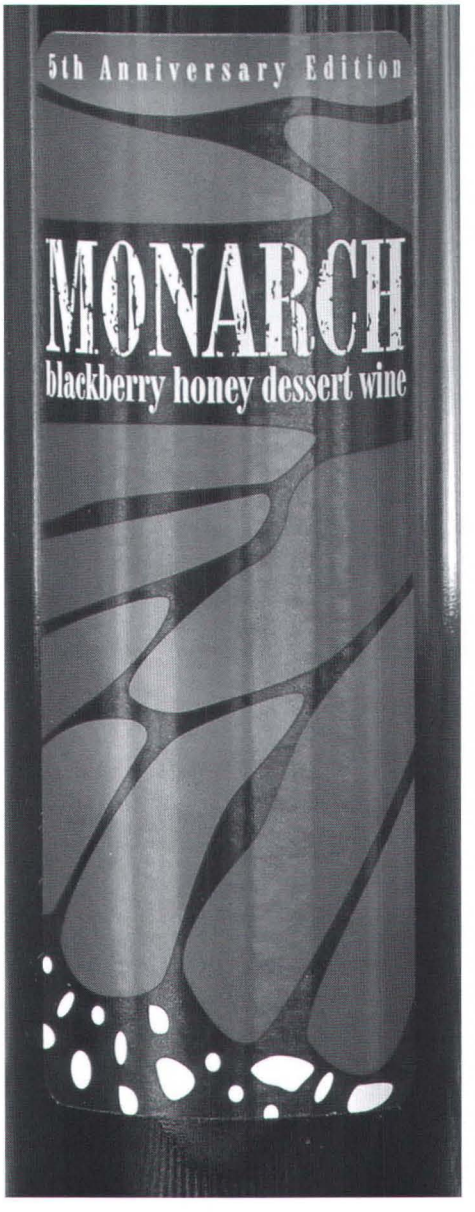
On April 2, 2001, I visited the Newport Beach site and observed only healthy oleanders. In March 22, 2001, David Kellum collected *G. onychinalis* (Guenée) at light in San Diego, CA. (Fig. 7, pp. 95). At the time it was hypothesized that the caterpillars were imported with ornamental oleanders.

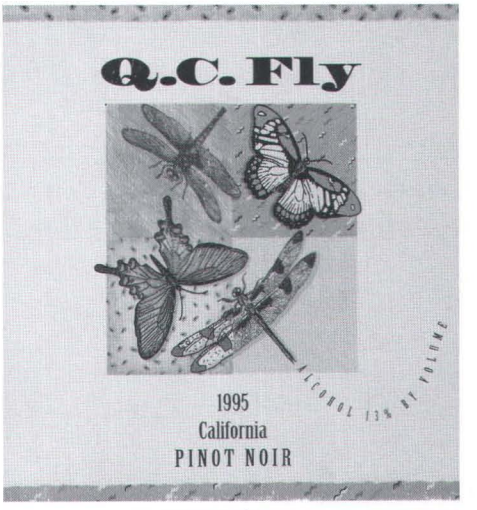
Larva (Fig. 3, pp. 95): Length: approximately 10 mm (last instar). Head yellow with light brown platelets. Coronal suture present. T1-3 and A1-10 integument smooth, shiny, pinacula same color as integument. Prothoracic shield (Fig. 8, pp. 95) yellow with a line of light brown platelets between SD2 and dorsal to XD2. T1 with L1 and L2 setae anterior to spiracle. T2-3 (Fig. 9, pp. 95) with D1-D2 and SD1-SD2 each on same pinaculum; L1 and L2 in a straight line. A1-7 with D1 and D2 on separate pinacula at an angle from each other, A8 with D1 and D2 on separate pinacula in a line. A9 with SD1 and D1 on the same pinacula. A1-8 with L1 and L2 at an angle; A1 with 2 SV setae, A2-6 with 3 SV setae, A7 with 2 SV setae, A8-9 with 1 SV setae. A1-8 with three L setae; A9 with one L seta. Spiracle on A8 larger and slightly more dorsal than other abdominal spiracles. Setae long and dark brown; SV setae longer than prolegs. Prolegs with crochets triordinal in an incomplete circle.

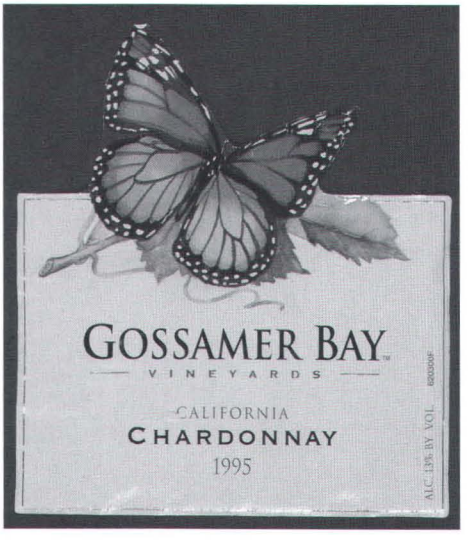
*Glyphodes onychinalis* (Guenée) was described from Côte de Coromandel, from the east coast of India, and is known to occur in the Afro-Asian Region, extending through Indonesia, Australia, and New Zealand. Adults in the NMNH collection from Australia, Philippines, and Sri Lanka (Fig. 10, pp. 95), were compared with specimens from California. This species shows considerable variation in the wing pattern. It was included in morphological and molecular studies by Hari Sutrisno [2002. Cladistic Analysis of the Australia *Glyphodes* Guenée and Allied Genera (Lepidoptera: Carmbidae: Spilomelinae) Entomological Science. 5:457-467; 2006. Molecular Phylogeny of the the Indo-Australian *Glyphodes* and its Allied Genera (Insecta: Lepidoptera: Crambidae: Spilomelinae) Inferred from Mitochrondrial COI and COII and Nuclear EF-1a Gene Sequences. Species Divesity. 11:57-59] that show it belongs in *Glyphodes* group 2 and may require a new genus name for it and its closest relatives. Gaden Robinson kindly searched the HOSTS database [*http://www.nhm.ac.uk/entomology/hostplants*] before it went live on the web; additional host records were not found for *G. onychinalis*.

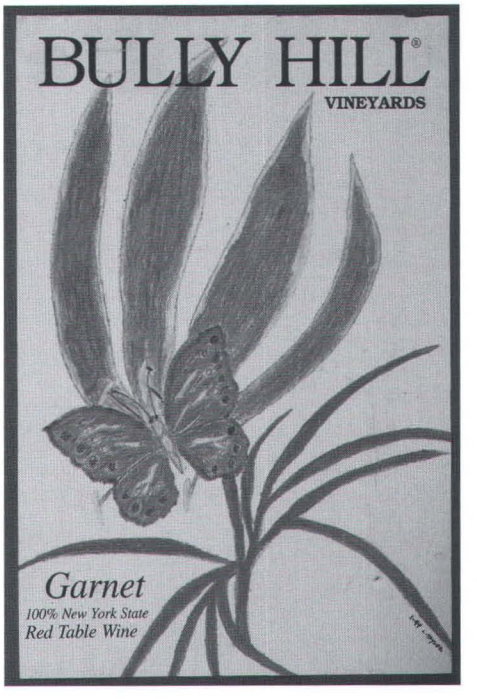
Acknowledgments. Thanks to Nick Nisson for providing directions to the original sight in Newport Beach. Photos were provided by Don Sterba, Rosser Garrison, and Marie Metz. I thank Don Sterba, Ron Leuschner, and Julian Donahue for providing the impetus to write this article. Ron Ochoa and Tom Henry (Systematic Entomology Laboratory, USDA) and Marc Epstein (Plant Pest Diagnostics Branch, CDFA) provided comments that improved the manuscript.




# Wine on Wings: Finding Lepidoptera Images in Unusual (and Tasty) Places

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***ewilliam@hamilton.edu***

We lepidopterists are pleased to find representations of our favorite bugs in unusual places. I enjoy unexpected phrases on license plates, and if you go back to a former issue of the News (Winter 2006, 48(4):121), you'll find color photos of some wonderful license plates with phrases such as LEP NUT, PAPILIO, and ARCTIID. But I like wine at least as much as I do unusual license plates, and leps appear occasionally on wine labels, too. Here are a few. Three of the labels shown here have representations of monarchs; that's no surprise because monarchs are the best known leps. The other two labels show generic butterflies, though one, at least, is recognizable as a swallowtail. If you can find additional lep labels, please let me know about them. By the way, I would barely count the blackberry honey concoction shown here as much of a wine, but the chardonnays were pretty good.

# The Marketplace

***IMPORTANT NOTICE TO ADVERTISERS:* If the number following your advertisement is "501" then *you must renew your advertisement* before the next issue! Remember that all revisions are required in writing.**

## Books/Videos

For Sale: Entomological books from personal library, mostly in excellent condition. Includes such titles as "Butterflies of the Indian Region" by Wynter-Blyth; "Butterflies of the Malay Peninsula" by Corbet & Pendlebury and "Butterflies of South Africa" by Swanepoel. Prices are negotiable. Write or email for list. Alan J. Hanks, 34 Seaton Drive, Aurora, ON L4G 2K1, Canada or email: alan.hanks@sympatico.ca 512

For sale: Book by David W. MacDougall A Field Guide to the Karner Blue Butterfly. 2007. $8 postpaid in US Send checks to: ECOS, PO Box 9118, Niskayuna, NY 12309. Signed copies available on request, no charge. 503

For Sale: Natural history books. Condition ranges from new to somewhat worn, ask for specifics. Some paperback, some hardcover. Selling for half their retail value. Ask for prices. Simon and Schuster's Guide to Insections, Arnett and Jacques; Discovering the Butterflies of Lassen Volcanic NationalPark, Crabtree; A Golden Guide to Familiar Butterflies Caterpillars Chrysalides, Moucha, A Golden Guide Orchids, Shuttleworth, Zim and Dillon; Lower Animals, Wells; The Year of the Butterfly, Ordish; Fremontia Journal of the California Native Plant Society Special Issue, July-October 2001; An Introduction to the Study of Insects, 6'th edition, Borror, Triplehorn and Johnson; The American Wilderness/Time-Life Books, The Grand Canyon and The Badlands; The Moths of America North of Mexico, fascicle 5.1, Sessioidea; Eichlin and Duckworth; fascicle 18.1, Ferguson; Butterflies of the Neotropical Region, part II, Danaidae, Ithomiidae, Heliconiidae, Morphidae; D'Abrera. Contact: Alvin Ludtke, 916-344-1626, *aludtke@earthlink.net* 503

Wanted: Books wanted: Zimmerman E. G. (1978) Insects of Hawaii, vol. 9 (parts 1 and 2) Microlepidoptera, Univ. of Hawaii Press. Also, Hampson, G.F. (1894) Fauna of British India, Moths, (Vol. 2 Arctiidae only) - preferably the 1976 reprint by Today and Tomorrow's Printers and publishers of India. Matthew Barnes Upper Cow Leys Far, Piddington, Bicester, Oxon OX25 1QE England email: mothman@belizemail.net 512

Aurelian Books of London, England specialises in selling secondhand, out of print and antiquarian books and prints about butterflies and moths. Visit their website at www.aurelianbooks.co.uk . Proprietor David Dunbar welcomes enquiries and correspondence for your wants and further information about Aurelian Books at 31 Llanvanor Road, Childs Hill, London NW2 2AR UK Tel.: 00-44 208 455 9612. 504

New Issues of Papilio (New Series):#18, Geographic variation and new taxa of western N.A. butterflies, especially from Colorado. By James Scott and Mike Fisher, some parts by David Wright, Stephen Spomer, Norbert Kondla, Todd Stout, Matthew Garhart and Gary Marrone. 72 p., 4 color plates, $9. #19, Corrections/reviews of 58

The aim of the Marketplace in the **News of the Lepidopterists' Society** is to be consistent with the goals of the Society: "to promote the science of lepidopterology...to facilitate the exchange of specimens and ideas by both the professional worker and the amateur in the field,..." Therefore, the Editor will print notices which are deemed to meet the above criteria, *without quoting prices,* except for those of publications or lists.

No mention may be made in any advertisement in the **News** of any species on any federal threatened or endangered species list. For species listed under CITES, advertisers must provide a copy of the export permit from the country of origin to buyers. **Buyers must beware and be aware.**

Only members in good standing may place ads. **All advertisements are accepted, in writing, for two (2) issues unless a single issue is specifically requested.**

**Note: All advertisements must be renewed before the deadline of the third issue following initial placement to remain in place.**

All ads contain a code in the lower right corner (eg. 481, 483) which denote the volume and number of the **News** in which the ad. first appeared. ***Renew it Now!***

Advertisements must be under 100 words in length, or **they will be returned for editing**. Ads for Lepidoptera or plants must include full latin binomials for all taxa listed in your advertisement.

**Send all advertisements to the Editor of the News!**

The Lepidopterists' Society and the Editor take no responsibility whatsoever for the integrity and legality of any advertiser or advertisement. Disputes arising from such notices must be resolved by the parties involved, outside of the structure of The Lepidopterists' Society. Aggrieved members may request information from the Secretary regarding steps which they may take in the event of alleged unsatisfactory business transactions. A member may be expelled from the Society, given adequate indication of dishonest activity.

Buyers, sellers, and traders are advised to contact your state department of agriculture and/or PPQAPHIS, Hyattsville, Maryland, regarding US Department of Agriculture or other permits required for transport of live insects or plants. Buyers are responsible for being aware that many countries have laws restricting the possession, collection, import, and export of some insect and plant species. Plant Traders: Check with USDA and local agencies for permits to transport plants. Shipping of agricultural weeds across borders is often restricted.

North American butterfly books. J. Scott. 127 p., $8. #20, Biological Catalogue of North American butterflies. J. Scott. 49 p., $5. #18-20, $21; #1-20 $89, postpaid in U.S. James Scott, 60 Estes St., Lakewood, Colorado 80226-1254 USA 504

For sale: *The Butterflies of Venezuela* Part 2 - just published! Price GBP £110 (+ postage and packing at cost). Please order from the author/publisher, Andrew Neild (email: andrew.neild @blueyonder.co.uk, phone: +44 (0)20 8882 8324, or post: 8 Old Park Ridings, London N21 2EU, United Kingdom). 1451 figures on 84 colour plates display all 196 species (355 subspecies) of Venezuelan Acraeinae, Ithomiinae, Libytheinae, Morphinae, and Nymphalinae. 8 new species, 91 new subspecies, 4 neotypes, 10 lectotypes, 272 text pages, 84 colour plates, 31 figures, 2 tables, 4 maps. Laminated hardback, 22 x 30 cm. Details and sample plates: www.thebutterflies ofvenezuela.com 504

New Book on American butterflies: R.R. Askew & P. A. v. B. Stafford: Butterflies of the Cayman Islands. December 2008. Hardback, 24x17cm., 172 pages incl. 6 color plates and 119 color photos. Maps and other figures. US $69.50. Also available: Larsen: Butterflies of West Africa. Hardback 28 x 21 cm. 865 pages in two volumes. 125 color plates depicting more than 1,400 specimens. US $256.00. Monastyrskii: Butterflies of Vietnam, softcover, 21 x 15 cm., Vol. 1: Satyrinae. 199 pages incl. 35 color plates, US $64.00. Many others available. Visit website: www.apollo books.com or contact Peder Skou, Apollo Books, Kirkeby Sand 19, DK-5771 Stenstrup, Denmark, or ask for a copy of our 2008-09 catalogue. 512

## Equipment

**Light Traps:** 12 VDC or 120 VAC with 18 inch vanes (15 & 32 Watt) and 24 inch (40 Watt). Rigid vanes of Stainless Steel, Aluminum, or Plexiglass. Rain Drains and beetle screens to protect specimens from damage. **Collecting Light:** Fluorescent UV 15, 32 & 40 Watt. Units are designed with the ballast enclosed in a weather tight cast aluminum enclosure. Mercury Vapor: 160 & 250 Watt self ballast mercury vapor with medium base mounts. Light weight and ideal for trips out of the country. **Bait Traps:** 15 inch diameter and 36 inches in height with a rain cloth top, nylon coated fiberglass screen, and supported with 3/16 inch steel rings. A plywood platform is suspended with eye bolts and S hooks. Flat bottom has a 3/16 inch thick plastic bottom that will not wrap or crack. Bait container is held in place by a retainer. For more information, visit our web site at: www.leptraps.com, or contact Leroy C. Koehn, Leptraps LLC, 802 South Third Street, Watseka, IL 60970-1607: Tel: 815-515-4060 512

## Specimens

Wanted: Will pay cash for Dynastes hercules (17-18cm) Titanus giganteus (17-18cm) Goliathus (11-12 cm). Yoshiaki Furumi, 97-71 Komizo, Iwatsuki-Shi, Saitama-Ken 339-0003 Japan 512

For Sale or Trade: Assorted worldwide Lepidoptera and Coleoptera. Local specimens are personally collected with detailed data. Will consider trades for beetles, including Lucanids and Scarabs. U.S. sales/trades only. Contact: Edward J. Komperda III. 111 Crestmont Road, Greene, New York 13778. Phone: 607-656-6588 Website: www.bigedsbugs.tripod.com 512

Wanted: North American butterflies, both common and rare. Particularly I need wester Papilios, P. appalachiensis, joanae, etc., Speyeria sp., (diana,etc.), and many others. Please contact me with your trade list. I can exchange tropical and exotic worldwide leps, or possibly purchase your material. Josh Lewallen, P.O. Box 1446 Fort Davis, TX 79734. Phone: 432-426-3851 or email: insects@hughes.net 502

For Sale or Trade: Worldwide Butterflies (+ few beetles from Africa and the Caribbean). Many caribbean species and neotropical species. Mexican butterflies from Chiapas with export permits. Huge selection Holarctic leps and interesting butterflies from remote South Pacific Islands. Worldwide Saturniidae. Website: www.theinsect collector.com Robert Westphal, Steinwies 13 1/2/85077 Manching, Germany. Ph. 49+8459+323409. Email: westphal.robert@t-online.de 512

## Research

Delano S. Lewis (PhD candidate) and Dr. Charles V. Covell Jr. seek to borrow, purchase or exchange for specimens of yellow-and-black, diurnal, neotropical geometrid moths (Sterrhinae, Cyllopodini) for revisionary study. These mimetic moths are often mixed with similarlly colored members of other moth families in collections, such as Notodontidae (Dioptinae) and Arctiidae. Many thanks. Please contact us at *dlewis@ufl.edu* or *covell @louisville.edu* McGuire Center for Lepidoptera and Biodiversity, FLMNH, Hull Rd. at SW 34th St., Gainesville, FL, 32611-2710. 511

Drs. Gerhard Gries and Paul Schaefer have made significant progress on identification of the sex pheromone of the Planthopper Ectoparasitic Moth, Fulgoraecia exigua (Epipyropidae). We expect to first field test a synthetic lure in mid-August 2009. If successful, we immediately wish to conduct a widespread distributional survey for F. exigua. We call on any Society members willing to cooperate by receiving a sticky trap and lure and then to deploy same in a convenient forested hardwood habitat (likely supporting host planthoppers) to contact us at: paulschaefer60@hotmail.com or mail to: Paul Schaefer, 4 Dare Drive, Elkton, MD 21921. Please provide name and mailing address to which we might send trap, lure and instructions in late August 2009. We thank all willing to help by field trapping for this unique moth.

# The Painted Lady (*Vanessa cardui*) Irruption of 2005

*Robert Vandenbosch*

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I spent the early spring of 2005 in Borrego Springs, CA, a small community surrounded by Anza-Borrego State Park. In early mid-February I started seeing large numbers of Painted Ladies *Vanessa cardui*, almost all of which were flying in a northwest direction. One day while out photographing I decided to count the number of butterflies flying between my path and an orchard about 25 feet to the west. In an hour I saw 270 Painted Ladies flying north along this narrow corridor. On the way back home I stopped by a Hawk Watch site, where observers were monitoring the migration of Swainson's hawks through the valley. There wasn't much hawk activity, and I suggested to the leader that they should be counting Painted Ladies instead of Swainson's hawks. Some days later I heard that they had done just that, and observed even more Ladies than I had seen.

I started taking informal counts of the number of butterflies crossing a highway during a 5 minute interval. This was fairly easy to do as the butterflies were almost all flying in the same northwest direction. I did this in several locations in the Anza-Borrego Park and to the southeast in the Imperial Valley south of the Salton Sea. It was not uncommon to count over 50 butterflies in a 5 minute sample. The Borrego Springs 4th of July Count on March 21 reported over 120,000 Painted Ladies, based on observations of 600 butterflies/min crossing a 50 ft. transect! Reports of large numbers of Painted Ladies also appeared in several newspapers from coastal California cities. Later in the spring I drove to Seattle from Borrego Springs, and observed many Painted Ladies as far north as near Hawthorne in west central Nevada. At this point I seemed to have outrun them, and did not see any farther north.

I had previously became interested in Painted Lady irruptions by coming across an article by M. T. Myres (1985) who concluded from reports from Alberta, Canada that there were about a million Ladies flying south in the late summer of 1983. He attributed this to a reverse migration, and noted that the large numbers he observed might be related to the strong 1982-83 El Niño. It had previously been suggested that there were large numbers of Painted Ladies in El Niño years when northern Mexico and southwestern U.S have favorable rains for plant growth. Having developed an interest in El Niño effects on bird populations, I decided to look at historical 4th of July Butterfly Count data to see whether there was a correlation of Painted Lady abundance with El Niño years. Indeed I found a very strong correlation. The results of this study were published in the journal Global Change Biology in 2003 (Vandenbosch 2003).

The 2004-2005 winter was not an El Niño year. This raises the question of what might have caused the 2005 irruption. To address this question we need to review what little is known about Painted Lady migration. It is generally thought that most of the Painted Ladies appearing in the spring are from overwintering sites in northern Mexico. However only one such site has been identified, a coastal site in Baja California. This site was discovered by J. S. Garth and E. Y. Dawson, as reported by Abbott (Abbott, 1951). In the spring of 1949, another irruption year, Painted Ladies were observed emerging from pupae at this site (Abbott, 1951). It is not known whether these pupae originated from butterflies originating from a reverse (southward) migration or from a resident population. In any event, large numbers of Painted Ladies were observed later in California, Nevada, and in one instance as far east as Utah. This irruption, discussed at length by C. H. Abbot, bore many similarities to that in 2005. As mentioned before, irruptions are thought to be associated with greater than average rainfall and hence plant growth in El Niño years. Indeed there is a strong association of winter rainfall in northern Mexico with an index of El Niño strength. The 2004-2005 winter was unusual in that the jet stream was displaced from its usual location, resulting in anomalous weather in southwestern U.S. and northern Mexico. The winter precipitation was greater than normal, as is illustrated in the top map in Fig. 1 (pp. 75). This behavior can be contrasted with the deviation of precipitation from normal during the 2006-2007 winter, a period of drought. The precipitation anomaly for this period is shown in the lower map of the figure. The irruption of 2005 seems to be associated with a weather pattern that happened to be very El Niño-like in the southwestern U.S. and northern Mexico. A dramatic indication of the El Niño-like weather in this region was the emergence of a near-record wildflower bloom in the Anza-Borrego desert. It was the most spectacular bloom in several decades.

Apart from the climate connection, it is surprising how little we know about Painted Lady migration and life cycle. Although there is some evidence for a return migration, it is not known to what extent spring emergence in Mexico

*Continued on pp. 88*

## Classic Collecting Campaigns

# The Warner Mountains, California

*Kelly Richers*

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The Warner Mountains of Modoc County, California, (named after William Horace Warner, who was killed in the range by native Americans on September 26, 1849), are well known to butterfly collectors. These mountains become one of the most fascinating "blend zones" for *Speyeria* (Fritillary) butterflies in the United States, and although remote, they have one convenience many of the classic collecting locations in the country do not have-the Warner Mountains are in close proximity to a town just west of the mountains (Alturas) or on the east side (Cedarville) with motel accommodations readily available.

This is not to say that the Warner Mountains are easy to get to. Located in the northeast corner of California, the Warner Mountains are some 180 miles from either Redding or from Reno, Nevada, and those would be the closest large cities. However, the compensation for this distance from large cities is the drive. Driving to Alturas takes one through either the eastern Sierra Nevada Mountains or the Basin and Range of northern Nevada, and both ways are attractive, though the Nevada approach is much drier.

The Warner Mountains are comprised of a mountain range that runs some 80 miles in a north-south direction from the corner of Lassen County, California, north through Modoc County and into Oregon's Lake County. Some of the best access is from the Alturas area of Modoc County. This mountain range tops out at Eagle Peak near the southern end with an elevation of 9,892 feet (3015m). The Warner Mountains are important because they are not part of the Cascade or Sierra Nevada ranges, but are in fact a significant range of the Great Basin ranges.

Upon reaching Alturas, the only reasonable location to stay for a trip to the Warner Mountains, accommodations are everywhere, as it is also a gateway town for premier trout fishing in Modoc County. Alturas lies fewer than fifteen miles from Cedar Pass, a premier collecting locality, and only some thirty miles from Davis Creek Road, another premier area. Cedarville, somewhat smaller, lies even closer on the east side, but has fewer accommodation choices.

Another advantage of the area is the availability of collecting roadside or just off the main road, due to a variety of excellent campsite roads. Traveling up Rt. 395 north of Alturas, about six miles out of town the collector can turn to the right (east) and follow Rt. 299 directly to Cedar Pass, about ten road miles. The pass, which lies at 6,300 foot elevation, is interesting in itself as an area to collect.

Specific butterfly and moth collecting locations in the Cedar Pass area would begin with the pass itself. Just to the west of the pass, which is indicated by the roadside sign, there is a dirt turnoff to the north that provides parking. Hidden somewhat among the weeds is a relatively level dirt road that one can easily walk looking for *Speyeria*.

Only one mile or less to the west there is a National Forest Campsite on the south side of Rt. 299, information about which can be accessed online by using "Cedar Pass" as a keyword. Cedar Pass Campground lies at between 5600 and 5800 feet elevation and has a pleasant trout stream running through it. There were several nice moist small meadow areas there when this author visited in mid July of 2008. Daytime or evening collecting can be profitable in this area.

To the east, over the pass, lies Cedar Pass Snow Park, on the south side at 6250 feet. The skiing area is readily viewable from the main road, and the dirt road to it is well maintained. Parking in the parking lot or along the dirt road, there are again meadows and woodlands for the most discriminating collector. A walk along the trail produced deer and many *Speyeria* during the daytime. The trail does go up and downhill, so some exertion can be expected.

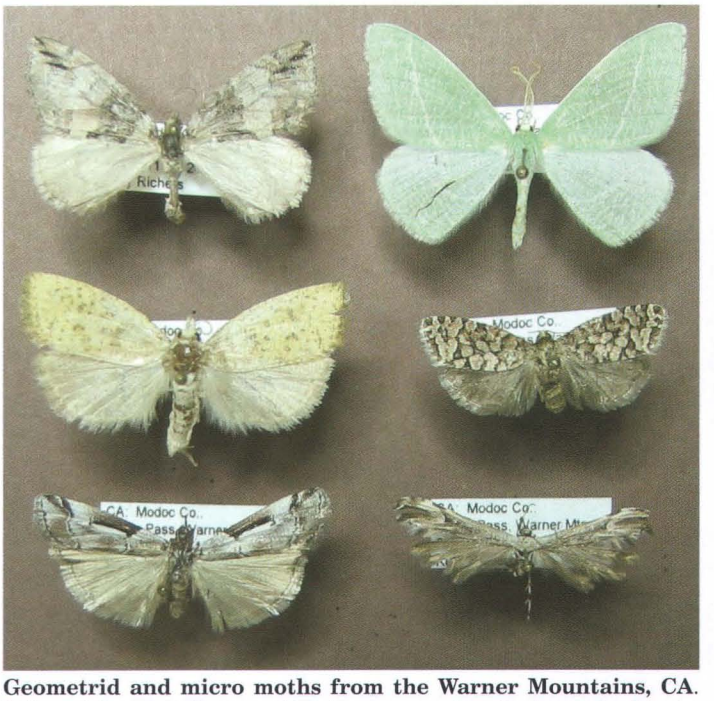
If one takes Rt. 395 further north out of Alturas, some 20 miles north is the turnoff to the east at the small town of Davis Creek. Look for the road sign, as it is not particularly easy to find for the first time visitor. Following the road to the east, then winding many miles into the mountains, many locations can be seen where streams empty out into very small meadow areas, wind through woods, and disappear. One spot at about 5400 feet was particularly good for *Speyeria hydaspe purpurascens*. The road goes through several places where *Speyeria* concentrate and careful slow driving will reveal these.

Butterflies to be expected flying commonly in early or mid July include *Speyeria hydaspe purpurascens*, *Speyeria zerene conchyliatus* and *Speyeria coronis snyderi*. (Idenfications by Bill Gendron, as I know not *Speyeria*). Chalcedona checkerspots may be the most common species out, but three different *Alypia* moths fly in or next to the woodland meadows.

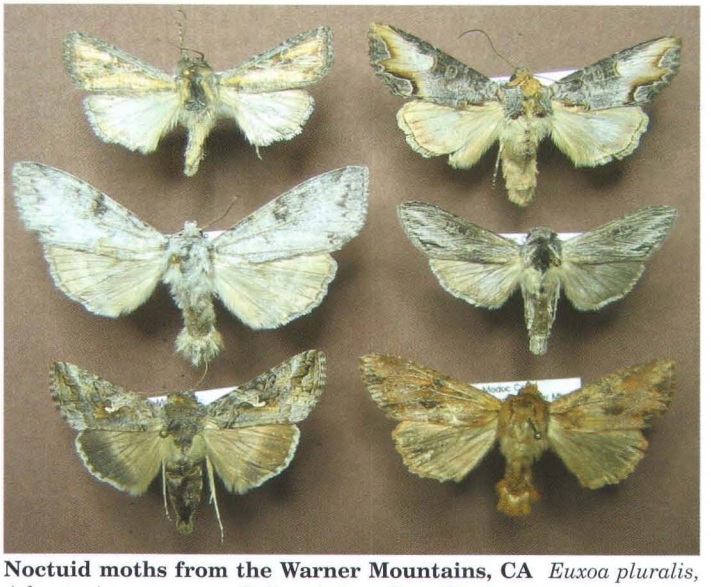
*Gnophaela latipennis*, daytime flying moths, abound in more profusion than this author has seen anywhere, flying with the *Speyeria*, and at night ten species of *Apamea* fly in this county

*Continued on pp. 86*

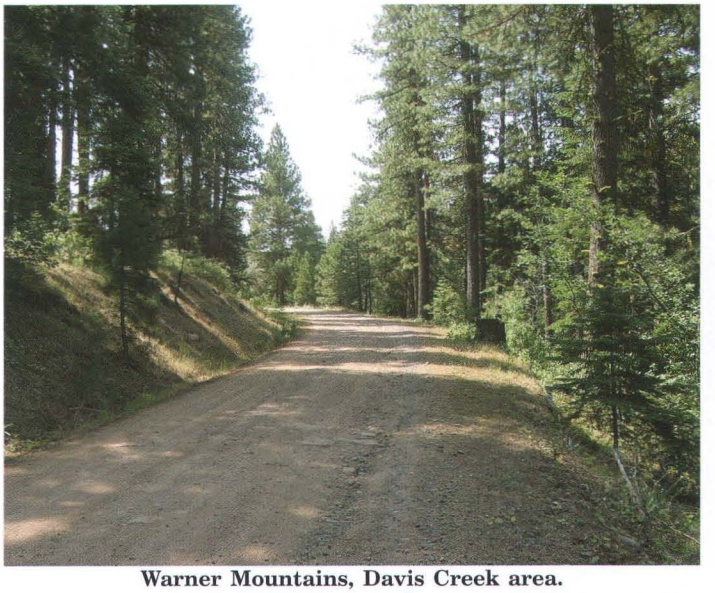
***Speyeria* from the Warner Mountains, CA**. Left to right, top to bottom: *Speyeria hydaspe purpurascens*, male and female; *Speyeria zerene conchyliata*, male and female; *Speyeria coronis snyderi*, male and female (Idenfications by Bill Gendron)



**Geometrid and micro moths from the Warner Mountains, CA**. Left to right, top to bottom: *Hydriomena nevadae, Cholorsea banksaria; Eucosma granfiflaviana, Eucosma skskiyouana; Ambesa laetella, Oidaematophorus phaceliae*



**Noctuid moths from the Warner Mountains, CA** *Euxoa pluralis, Admetovis oxymorus; Polia piniae, Cucullia incresa; Autographa californica, Apamea antennata.* (Moth Identifications by Ron Leuschner and Kelly Richers)



**Warner Mountains, Davis Creek area.**

## Warner Mts.

*Continued from pp. 85*

alone, along with at least nineteen *Oncocnemis* species. Perhaps the best represented genus of macros is *Euxoa*, with no fewer than 48 species flying in Modoc County. Micros are well represented with fourteen *Eucosma* species and four *Cydia* species in the Warner Mountains, and of the larger moths *Sphinx perelegens*, *vashti*, *drupiferarum* and *sequoiae* are all flying, as well as *Paonis myops* are all to be found in traps. This author set ultraviolet traps successfully at all three mentioned Cedar Pass locations for two nights and was very pleased with the results.

Since the trip is lengthy to get to the Warner Mountains, it is to be suggested that a minimum of four days be spent exploring the area. Careful looking will be rewarding to both the butterfly and moth collector or photographer.

# A New Genus of Swallowtail for the United States: *Mimoides phaon* (Boisduval, 1836) (Papilionidae: Papilioninae)

*Martin Reid*

*11500 Huebner Road #1605, San Antonio, Texas 78230, upupa@airmail.net*

The four days preceding October 23, 2008 in the Lower Rio Grande Valley of south Texas were subject to light easterly winds with a southern component. The morning of October 23rd brought slightly cooler temperatures and a light north wind, and the author noted a small trickle of larger butterflies flying determinedly northwards into the light headwind. After a morning of searching the trails at Santa Ana National Wildlife Refuge (Hidalgo Co., Texas) for rare and unusual dragonflies (Odonata), the author moved to the dwindling butterfly garden located north of the parking area at Santa Ana, close to the entrance road, by 1:30 p.m. As he studied various dragonflies enjoying a calm area in the lee of a cool northeast wind, the author saw a mostly black swallowtail basking on a grass stem c. 3 feet from the ground in the same calm spot. Not recognizing it as anything expected, the author noted the red marks on the sides on the black abdomen, and proceeded to take twelve photos of the swallowtail at close range (see photo pp. 75). After basking in full view for more than a minute, the swallowtail flew slowly and rather laboriously off to the north at waist-height, underneath the canopy of some small trees before flitting up into the branches of a mesquite, and out of view. The author made a brief attempt to find it in the mesquite but then continued looking for dragonflies before returning to his vehicle in the parking lot. A quick search of "Butterflies of Mexico and Central America" by Glassberg and of "Butterflies of Northeastern Mexico" by Garwood and Lehman strongly suggested that the swallowtail was a "green form" *Mimoides phaon*. After calling a few local butterfly enthusiasts the author made more attempts to relocate the swallowtail, without success. Soon thereafter two local butterfliers arrived and resumed the search, to no avail. The swallowtail was not seen again.

*Mimoides p. phaon* (Boisduval, 1836), known by the English names Variable or Red-sided Swallowtail, occurs commonly throughout eastern Mexico at least as for north as Los Troncones Cañon, located north of Ciudad Victoria in central Tamaulipas and some 180 miles south of Santa Ana NWR. There is no prior documented record of this taxon north of Mexico, and this is the first occurrence of the genus *Mimoides* in the United States. The dorsal surface of the hindwings (and to a lesser extent the forewings) are unusually variable in pattern and color, with two main types: red-form and green-form. A characteristic of most green-form individuals is a band of soft-edged pale blue-green "lozenges" across the postmedian area plus two bands of broken thin marks (of the same color) in the submargin and on the margin. The individual from Santa Ana was typical in this regard, although the depth of the pale "lozenges" was smaller than the average.

## Acknowledgments

*The author is grateful to Nick Grishin for valuable identification advice.*

## Literature Cited

Garwood, Kim and Lehman, Richard 2005. Butterflies of Northeastern Mexico

Glassberg, Jeffrey 2007. A Swift Guide to the Butterflies of Mexico and Central America.

## Zygaenidae Defenses

*Continued from pp. 72*

chemical repellent. Zygaenidae, when in danger, emit HCN (Hydrocyanic acid), the deadly substance known from gas chambers used in the second World War. Since our standard killing jars contain HCN we have to find other ways to dispatch HCN containing Zygaenids.

This species has in its hemolymph so called "cyanogenic precursors", especially linamarin and lotaustralin, which the larvae accumulate when feeding on Fabaceae. In moments of danger, Zygaenids synthesize HCN using the enzyme glucosidase which is hydrolyzing the above mentioned cyanogenic precursors.

This repellent system is rendering an effective protection against predators. Because of this toxicity other orders of insects (e.g. Coleoptera – beetles, e.g. *Trichodes apiarius* (Linnaeus) and *Trichodes alvearius* (Fabricius), and some Homoptera (e.g. *Cercopis vulnerata* (Illiger) and *Cercopis sanguinolenta* (Scopoli) are copying the color patterns of Zygaenids. We may see here some combination of Batesian and/or Mullerian types of mimicry, because the involved individuals of other insects may themselves be unpalatable to predators.

# Membership Update...

*Julian Donahue*

Includes all changes received by 24 November 2008.

The biennial Membership Directory for 2008 was mailed in November, 2008.

**Correction to entry in the 2008 Membership Directory:**

Cotton, Adam Miles: 86/2 Moo 5, Ban Hua Tung, Tambon Nong Kwai, Hang Dong, Chiang Mai 50230, Thailand.

We welcome the following new members who have joined since News #2 was published, but who joined in time to be included in the 2008 Membership Directory (listed here by name only—see Membership Directory for full addresses): **Bernstein, William; Duff, Adam; Holman, Heidi (Ms.); Menasian, Stephen C. (Ph.D.); Sohn, Jae-Cheon; and Zwick, Andreas.**

The following members have reported new addresses since News #2, and their new addresses are included in the 2008 Membership Directory (listed here by name only): **Albu, Valeriu (M.D.); Arnaud, Paul H., Jr. (Dr.); Black, Benjamin A.; Davenport, Ken; de Mordaigle, Rodolphe C.; Dowell, Robert V.; Eastwood, Rod; Fiedler, Konrad ; Finneman, Jari (Ph.D.); Garhart, Matthew C.; Goodden, Robert Crane; Grealey, Jessica (Ms.); Halbedel, Elaine M.; Halvorsen, Russell; Koehn, Leroy C.; Kral, Thomas W.; Newcomer, David L. (M.D.); Powell, David J.; Quinn, Michael A.; Rickard, Mike A.; Steiner, John.**

## New and Reinstated Members:

Members who have joined/renewed/been found/or rescinded their request to be omitted since publication of the 2008 Membership Directory (not included in the 2008 Membership Directory; all in U.S.A. unless noted otherwise)

**Dreiling, Mark J. (Ph.D.):** 1301 Cherokee Hills Drive, Bartlesville, OK 74006-4308.

**Mattoni, Rudi (Ph.D.):** Lepidoptera Research Foundation, Inc., Agresearch, Inc., Teodoro Garcia 2454 PBC, DMR Buenos Aires C 1426, Argentina. [Charter Member]

**Pozo, Carmen (Ph.D.):** Av. Centenario km 5.5 sn, Chetumal, Quintana Roo 77013, Mexico.

**Raguso, Robert A. (Ph.D.):** Dept. of Neurobiology and Behavior, Seeley G. Mudd Building, Tower Road, Cornell University, Ithaca, NY 14853.

**Seriff, Don**: Conservation Science Office, 9401 Plaza Road Extension, Charlotte, NC 28215-9533.

**Shupp, Gary G.:** 1603 North 26th Street, Allentown, PA 18104-1801.

## Address Changes

(all U.S.A. unless noted otherwise) since publication of the 2008 Membership Directory

**Ellsbury, Michael M. (Dr.):** 70855 Highway 8, Fairbury, NE 68352-5565.

**Heath, Fred:** 5128 North Sabino Fairway Place, Tucson, AZ 85749-7130.

**Heckscher, Christopher M. (Dr.):** College of Agriculture & Related Sciences, Delaware State University, 1200 North DuPont Highway, Dover, DE 19901-2202.

**Hicks, Tyler Leon:** 910 Eastview Drive, Mulvane, KS 67110-1471.

**Meekel, Hendrik:** 26838 – 100 Avenue, Maple Ridge, British Columbia V2W 1S6, Canada.

**Oemick, Donald A.:** 431 431 Stillwood Drive, Newnan, GA 30265-5552.

**Wist, Tyler:** 716 Lamarsh Lane, Saskatoon, Saskatchewan S7W 1B6, Canada.

**York, Matthew W.:** 9910 Ramblewood Drive, Waco, TX 76712-3119.

## Painted Lady Irruption of 2005

*Continued from pp. 84*

is due to a return migration population, or to butterflies that remain in or near to Mexico. Much is left to be learned about the life history of Painted Ladies, including the location of the principal overwintering sites in Mexico, the number of generations involved in the migration, and the importance of a return migration.

## Literature Cited

Abbott CH (1951) A Quantitative Study of the Migration of the Painted Lady Butterfly, Vanessa cardui L. Ecology 32, 155-171.

Abbott CH (1959) The 1958 Migration of the Painted Lady Butterfly in California, The Pan- Pacific Entomologist *35, 83-94.*

Myres MT (1985) A Southward Return Migration of Painted Lady Butterflies, Vanessa cardui, over Southern Alberta in the fall of 1983, and biometeorological aspect of their outbreaks into North America and Europe. Canadian Field Naturalist 99, 147-155.

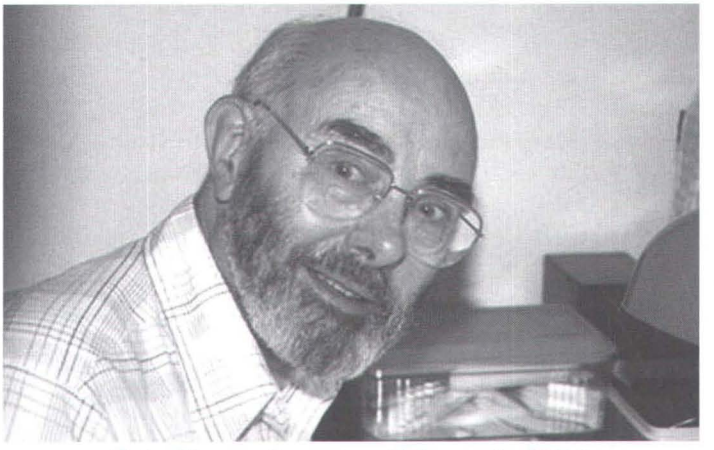
Vandenbosch, R. 2003. Fluctuations of Vanessa cardui butterfly abundance with El Niño and Pacific Decadal Oscillation climatic variables. Global Change Biology 9:785-790.

# Metamorphosis...

The Society has learned of the death of the following members. Our condolences to their families.

**Bagdonas, Karolis Richard, Ph.D.**, on 16 October 2007, in Conroe, Texas. Most recently a professor of Biology at Sam Houston State University in Huntsville, Texas, Karolis was best known to many of us from his accounts at our annual meetings of his team, the "Bagdonas Flying Circus," and their work on the montane Lepidoptera of the western U.S.—most notably the significance of noctuid moths in the diet of grizzly bears. He was a founding member of The Xerces Society, and has been a member of The Lepidopterists' Society since 1975. He is survived by his wife, Patrice Lussy, three children, a sister, and a grandson. His collection of more than 400 boxes of butterflies and moths was donated to the C.P. Gillette Museum of Arthropod Diversity at Colorado State University in 2008.

**Classey, Eric William**, of Gloucester, U.K., on 7 September 2008 at the age of 91, after a short illness. Classey had been a member of the Society since 1999 (when he also served as a Vice President). Classey was an accomplished entomologist, publisher and bookseller, perhaps best known to our members as E.W. Classey Ltd., seller of antiquarian and recent books on insects; his company was the inaugural co-publisher (with R.B.D. Publications, later to become the Wedge Entomological Research Foundation) of the first several fascicles of the landmark series, The Moths of America North of Mexico, including Greenland. He worked at the Natural History Museum in London and in the Royal Army Medical Corps (where he studied malarial mosquitoes). After WW II he was manager of the Watkins and Doncaster naturalists' supply business, and in 1949 was co-founder of The Entomologist's Gazette. He began his book business in 1950, and became a limited company in 1959. In addition to his office in the Society, he has been a president of the British Entomological Society and the Amateur Entomologists' Society, and a Fellow of the Royal Entomological Society. Eric's wife Ivy died in 1982. He is survived by three sons, one daughter (Sally Noseda, who provided information for this obituary), eight grandchildren and three great-grandchildren.



Eric Classey [courtesy Telegraph, U.K.]

**Dooley, A.S. "Tom," Jr.**, of Satellite Beach, Florida, on 10 August 2008, at the age of 87. Tom first joined the Society in 1979, and became a Life Member in 1982. Tom loved the challenge of collecting and the camaraderie of The Lepidopterists. Society. He and his wife of 32 years, Pat, attended many of the Society's annual meetings across the country, and in the 1980s and 1990s they traveled to South and Central America on many collecting trips, often in conjunction with those meetings. Tom had been in poor health the last eight years and died peacefully at home. He is survived by his wife, four children, three stepchildren, and seven grandchildren. [information from Pat Dooley]

**Paul F. Pfenninger**, a member of the Society from 1973 to 2006, last known to us in Boynton Beach, Florida. [notification from an unnamed son]

# An Almost Forgotten Field Observation on *Morpho cypris*

*John R. MacDonald*

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About 32 years ago, give or take a year, I was living at Ft. Sherman in the Canal Zone of Panama. I was the eldest of three military dependents. Our housing area was on a hill. My brother, sister and I would sometimes collect butterflies along the road leading up this hill. Between the hours of about 11:00 am.-1:00 pm. we would sometimes have opportunity to chase a "real good blue morpho" or "royal blue", which to us meant *Morpho cypris*. For those who may be curious, we called *Morpho menelaus amathonte* an "all blue" morpho, *Morpho helenor* a "black edge" blue morpho, and *Morpho theseus* a "royal brown". The "royal blues" or "real good blue morphos" would usually fly out of reach along the lower edges of the hill, but would often fly at an angle closer to the road as they flew up the hill, thus giving us a shot a capturing them.

I recently recalled an observation I had made years ago that may or may not be significant. One day while chasing one of these coveted "royal blues" up the hill and viewing its underside in the light of the midday sun, it occurred to me how similar it looked to *Papilio thoas* (except of course minus the tails). Could there be something going on here? Is this just a coincidence, or is *Morpho cypris* in some way a mimic of *Papilio thoas*? That would only make sense if *Papilio thoas* is a distasteful butterfly to predators. This I don't know. Why does *Morpho cypris* have this pattern of white stripes and spots? Unless I am mistaken, most *Morpho* species are solid blue except for those having black or dark wing margins. Could it be that the underside profile of this species is important since it often flies so high above the ground?, and thus the ventral surface might be the primary side observed by some predatory species, such as birds. Knowing that there are some well known distasteful models for a butterfly such as *Morpho cypris* to mimic, why would it pick something like *Papilio thoas*? If *Papilio thoas* is truly a distasteful species, perhaps *Morpho cypris* could mimic it in fewer steps than it could another model.

We never collected a female of *Morpho cypris*, and so far as I know, we never saw any. Sometimes the females are the only sex involved in a mimicry relationship, with the males being more expendable. In *Morpho cypris*, there are forms with varying widths of white bands in both sexes (ie. form bugaba as illustrated in DeVries, 1987) and the females can sometimes lack blue and have a wide yellowish medial band (DeVries, 1987). Could these forms be a mimic of some other Papilionid?, such as *Papilio androgeus*? And what about the "royal brown" and related species of *Morpho* that are often high flyers, wouldn't they have to deal with the same selection pressure of a predator potentially attacking from its lower side? Their underside pattern seems to be more cryptic in nature and may in fact resemble fallen leaves, as DeVries (1987) mentions in his observation of the flight habits of *Morpho theseus*. Most things in nature have a reason, even though they may not be apparent to us. I present this field observation and pose a few questions and a highly speculative hypotheses here, so that others might add their input.

## Literature Cited

DeVries, P. J. (1987). The Butterflies of Costa Rica and their Natural History. Papilionidae, Pieridae, Nymphalidae. Princeton University Press, NJ.

# 2009 Annual Meeting of the Lepidopterists' Society June 16-20th

The 2009 Annual meeting of the Lepidopterists' Society will be held in conjunction with the third meeting on Neotropical Lepidoptera, and the Association for Tropical Lepidoptera in the city of Chetumal, Quintana Roo, Mexico on June 16-20th. The joint meeting will be sponsored by El Colegio de la Frontera Sur (ECOSUR), Universidad Autonoma de México (UNAM), and Universidad de Colima (UniCol).

Further information will be posted in the Spring, 2009 issue of the NEWS. There will also be updates posted on the Lepidopterists' Society website (www.lepsoc.org), as well as on the event website (http://w2.ecosur-qroo.mx/ElenIII/indexingles.htm

## Conservation Matters: Contributions from the Conservation Committee

# Volunteers Are Helping Inventory and Conserve Rare Florida Butterflies

*Dean K. Jue*

*Florida Natural Areas Inventory, 1018 Thomasville Rd.; Suite 200-C; Tallahassee, FL 32303* ***djue@fnai.org***

Florida, the land of sunshine. To lepidopterists, the southern part of Florida, especially the Florida Keys, is the place to explore for rare Caribbean butterfly species in the U.S. But Florida is also the land of rapid population growth and development. The state's population growth rate from 1990 to 2000 was greater than 23 percent.

With the influx of new state residents and accompanying land use changes over the last 20 years, what is happening to the Lepidoptera fauna of Florida? Many historical Florida localities are now located in metropolitan areas. Old-growth longleaf pine forests are almost gone, many replaced with housing, agriculture, or silviculture.

Answers to the above question are being sought through a state wildlife grant (SWG) awarded by the Florida Fish and Wildlife Conservation Commission (FFWC) to the Florida Natural Areas Inventory (FNAI). The FNAI is the natural heritage program for the State of Florida and is part of Florida State University (The nationwide network of natural heritage programs was described by John Shuey in the Spring 2008 issue of the Conservation Matters section of the News of the Lepidopterists' Society).

### The FFWC State Wildlife Grant for Surveying Butterflies

The FNAI received the three-year state wildlife grant in July 2007. Objectives of the grant are 1) to develop a comprehensive database on the current distribution of rare butterfly species on Florida's conservation lands; 2) to assess the success of Florida's environmental land acquisition programs in protecting the FNAI-tracked butterfly species; and 3) to identify management strategies and/or strategic land acquisitions that will remedy gaps in the protection of Florida's butterfly biodiversity.

Although these are ambitious goals, much of the background data for this SWG project was already available. The Florida Committee on Rare and Endangered Plants and Animals had developed an initial list of rare Florida butterfly species. Florida has many resident lepidopterists who are knowledgeable about the butterfly fauna. An active network of competent butterfly watchers also existed in Florida. Even before the butterfly SWG began, the FNAI had received a general invertebrate SWG from the FFWC that allowed FNAI to refine and expand its list of tracked butterfly species.

Because of Florida's rapid population growth, the State of Florida had the foresight to initiate one of the most aggressive environmental land acquisition programs in the U.S. Since 1990, over $20 billion dollars have been allotted to acquire public lands for conservation and recreation. As a result of the State's efforts combined with environmental land acquisition programs of local, regional, and federal governments, over 25% of Florida is now held in public conservation lands. The FNAI is an integral part of the state environmental land acquisition process and maintains the boundaries, ownership, and management status of all lands managed for conservation. Thus, comprehensive information on conservation lands in Florida is readily available.

The butterfly SWG project utilizes regional coordinators around the state to organize data collection and conduct strategic field surveys to document the localities where rare Florida butterfly species still persist and assess long-term viability if possible. The regional coordinators are volunteers who donate their time and expertise and get reimbursed only for gas mileage. The coordinators are Mary Ann Friedman in the western Florida panhandle, Dean and Sally Jue in the central panhandle, Kathy Malone in the northern Florida peninsula, Linda and Buck Cooper in the central peninsula, Don Stillwaugh in the western central peninsula, and Mary Truglio in the southern peninsula. Most regional coordinators have been conducting butterfly surveys or annual butterfly counts in Florida for five or more years. Consequently, there has been minimal need to provide formal training in the identification of the rare butterfly species to this group. John Calhoun, Jaret Daniels, and Marc Minno serve as advisors to the grant.

The regional coordinators and lepidopterists meet annually in Gainesville, Florida, to coordinate strategic field surveys across the different regions and to share experiences, observations and suggestions. Most surveys are

conducted by the regional coordinators themselves, sometimes accompanied by other interested volunteers. Field surveys focus on finding new populations of the rarest Florida butterfly species on conservation lands. A standardized data form is used to collect information about each survey. All regional coordinators have been provided with a GPS unit to obtain geographic coordinates for their sightings. A recognizable digital photograph is required by FNAI to document the occurrence of a tracked butterfly species at a new location. (Photo documentation is usually adequate in Florida but may not be sufficient in other parts of the U.S.) Sightings and reports are considered as "possible records" unless this confirming evidence is obtained. Photographs of species that may be difficult or tricky to identify are sent to John Calhoun, Jaret Daniels, and Marc Minno for confirmation.

Survey data for FNAI-tracked butterfly species are then entered into the FNAI database using Biotics data management software. Biotics, which was developed by NatureServe for the natural heritage programs, utilizes an Oracle database for managing tabular data and a customized ESRI ArcView geographic information system software for managing and mapping the spatial component of the data. FNAI's statewide database includes occurrences of not only butterflies but all FNAI-tracked plants and animals as well as exemplary natural biological communities and other noteworthy natural features (e.g., special bird breeding areas). All these data are used during statewide decision-making processes for land acquisition and management.

## Noteworthy Florida Butterfly Sightings from the Butterfly SWG

Although the project is only halfway through its three-year grant cycle, there have already been several exciting finds:

1) Two populations, with at least ten individuals observed in each, of Arogos Skipper (*Atrytone arogos*) have been documented, one in the central peninsula and one in the Florida panhandle.

2) Three new populations of Frosted Elfin (*Callophrys irus*) have been discovered in three different Florida panhandle counties (see photo pp. 94).

3) One new population of the endemic subspecies of Duke's Skipper (*Euphyes dukesi calhouni*) has been documented (see photo pp. 94).

Equally important, project coordinators have been collecting information on the current distribution and status of many other rare butterflies in Florida.

## Using the Butterfly SWG Results for Conservation of Florida Butterflies

Land managers cannot properly manage for a biological resource if they are not aware of the presence of that resource. As butterfly SWG data is entered into the FNAI it becomes immediately available to a range of user groups and land managers can be informed about the presence of a rare butterfly found on their property. Managers of conservation lands where the Frosted Elfin, Arogos Skipper, and Duke's Skipper populations were discovered are now aware of the presence of these rare butterflies on their properties and are working with the FNAI and the regional coordinators of the butterfly SWG to help ensure long-term viability of these populations on their lands.

As data collection progresses, observed patterns of abundance data will become useful in identifying better land management strategies for the rarer Florida butterflies. For example, what similarities in land management practices exist on lands where viable populations of Arogos Skippers are found? If a seemingly suitable site for the Arogos Skipper has failed to produce that species despite numerous survey attempts, could its absence be due to the differences in land management practices? Answers to questions such as these may be critical to ensuring the long-term survival of certain butterfly species in Florida.

Project data and the FNAI database will be used to assess the success of Florida's conservation lands acquisition programs in protecting Florida's rare butterfly species. As but one example, biologists will be able to determine which rare butterfly species are already documented on a number of geographically dispersed conservation lands. Or immediately query which species are protected on just one conservation land or none? If lands are proposed for acquisition for conservation purposes and they contain populations of inadequately protected rare species, then those lands could receive higher priority ranking for acquisition than a similar property that does not contain a rare butterfly species. The FNAI database is used by both local and state land acquisition programs in Florida, so these SWG-collected butterfly data will play a role in helping protect Florida's butterfly biodiversity.

## The Crucial Role of Volunteers in Florida's Butterfly SWG Project

A significant point that bears emphasizing is that much of this project is being conducted by volunteers. The grant budget of $65,000 funds administration, reimbursement for gas mileage for surveys and expenses associated with the annual meetings in Gainesville, database entry to the Biotics database, the final analyses and report to the FFWC at the conclusion of the project, and the formal reports and any associated recommendations to the land managers on which the FNAI-tracked butterflies were found. But the most critical part of this project - the field work - relies on amateur butterfly watchers and photographers who coordinate strategic field surveys in their regions and contribute a minimum of one strategic field survey per month to the project for the three-year grant period. Additionally, the professionally-trained lepidopterists who are advising this grant are donating their time and expertise to help ensure the success of

the project. Without this group of dedicated volunteers, the butterfly SWG project would not be possible.

As a result of increased interest in butterflies during the past two decades, there are knowledgeable butterfly watchers/volunteers throughout Florida. This increase can be attributed to a combination of better books for identifying butterflies in the field, close-focusing binoculars, digital cameras, butterfly gardening, and a heightened awareness of the natural environment in general.

### Applying the Lessons from Florida to Your Local Community

Heightened interest in butterflies and their identification is not restricted to Florida. This phenomenon is nationwide. There has been a significant increase in the number of individuals who have the knowledge and expertise to assist with or even take charge of field surveys for inventorying and monitoring populations of rare butterflies deemed of conservation interest. These individuals may have had scientific training in other fields beside entomology, or they may be what is commonly referred to as "citizen scientists." Some could even come from the ranks of high school and even middle school students.

While Florida's butterfly grant is taking a statewide perspective, field surveys or monitoring projects do not necessarily need to focus on such a large area. Many of the SWG volunteers in Florida had already been conducting field surveys prior to this grant. (Indeed, it was these regular local butterfly surveys throughout parts of Florida that led to the conception of a SWG specific to butterflies.) The FFWC SWG grant provides structure and a uniform mechanism for coordinating the surveys across Florida and ensures that field data are entered into a statewide database. Added bonuses include easier access for the regional coordinators and their volunteers to conservation lands normally closed to the public and the ability to provide these data to a broader audience of policymakers and decision makers through the FNAI database.

The essence of the butterfly SWG project could be replicated on a local scale by any member of the Lepidopterists' Society. Start by recording the butterfly (or moth) species that you observe on one of your favorite local conservation lands. While one survey provides a snapshot, systematic surveys over several years will provide a more complete picture. If a rare species is observed, inform appropriate land managers and other concerned parties about your discovery. Many local land managers take great interest in lists of species found on their properties. Butterfly lists are often of special interest to land managers because they know that butterflies are flagship species that can lead to more funding, ecotourism, and support for management efforts. Make efforts to discuss with the land manager ways the property could be managed in order to ensure the long-term survival of the special butterfly populations. Help inform your community about the significance of local conservation lands, perhaps through butterfly brochures or articles in local papers.

So, identify a favorite local park or other conservation land where you like to go for "lepping." By systematically recording what you see while engaging in one of your favorite activities, and then sharing that information and your knowledge and enthusiasm about butterflies with the land manager, you can become a powerful force for the conservation of butterflies in your area.

# Nominations for William D. Winter Service Award

*Rebecca Simmons*

*Department of Biology, University of North Dakota, PO Box 9019, Grand Forks, ND 58202*

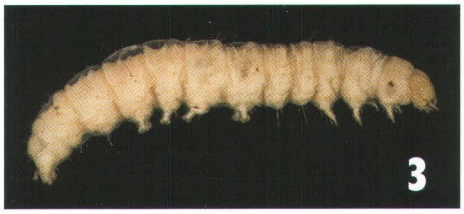
The William D. Winter Award is now given biannually by the Lepidopterists' Society in recognition of outstanding service to the society and its membership. This award, established in 2005, honors the memory of William D. Winter Jr. Dr. Winter's contributions to the Lepidopterists' Society and to the overall community are numerous. Dave was an avid naturalist and shared his love of Lepidoptera through publications, Lepidopterist Society meetings, and public outreach. Dave served as Secretary for the Lepidopterists' Society from 1989-1994. He and his wife Jo Brewer co-wrote the book, Butterflies and Moths: A companion to your field guide, in 1986. His last contribution to the Society and public Basic Techniques for Observing and Studying Moths and Butterflies was published posthumously. The Techniques manual has quickly become a classic reference for serious Lepidopterists and amateurs. In keeping with the example of Dr. Winter's service, there is not a monetary award, although funds will be provided to assist the recipient in attending the Annual Meeting at which the presentation is to be made. Funds for the W. D. Winter Jr. Service award are provided by the Lepidopterists' Society endowment and annual meeting contributions.

Nominations of appropriate individuals are now requested for consideration by the Winter Award Committee for recognition at the 2009 meeting. Applications must include: 1. A curriculum vitae for the candidate; 2. Two supporting letters by current or former members of the society; 3. A cover letter summarizing the candidate's contributions to the society.

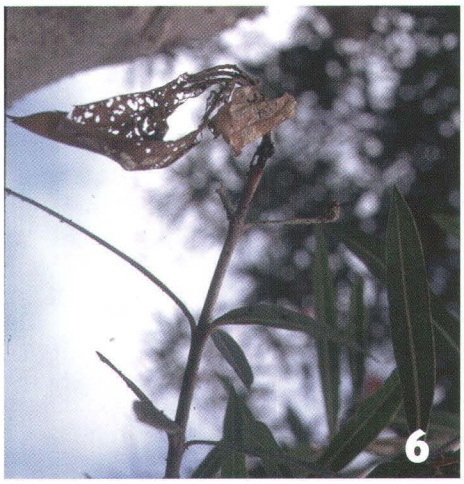
Applications must be complete by February 15, 2009. Please send these to: Winter Award Committee, c/o Dr. Rebecca Simmons, Dept. of Biology, University of North Dakota, PO Box 9019, Grand Forks, ND 58202, ***rebecca.simmons@und.nodak.edu***


**1)** This Frosted Elfin, *Callophrys irus*, was photographed on Sundial Lupine, *Lupinus perennis*, its larval host plant, in the Apalachicola National Fores. In Florida, this species was known from two northeastern counties prior to the discovery of three new Florida panhandle populations in 2008 by SWG grant participants. **2)** The Florida subspecies of the Duke's Skipper, *Euphyes dukesi calhouni*, may be in serious decline due to hydrological changes associated with Florida's population growth. There are only a few sites where this species has been seen since 2000. In April 2008, SWG grant participants documented a healthy population of this species at a new location in Taylor County, Florida. **3)** The Loammi Skipper, *Atrytonopsis loammi*, is known from fewer than five counties in Florida. All known sites are on large land tracts of open fields and prairies maintained by fire. **4)** Dean Jue, statewide coordinator of the SWG butterfly grant, takes a GPS reading at the location where a Frosted Elfin was discovered in the Apalachicola National Forest. Volunteers Virginia Craig and Amy Sang photograph the butterfly to fully document the new locality record for inclusion in the FNAI database. See article pp. 91.

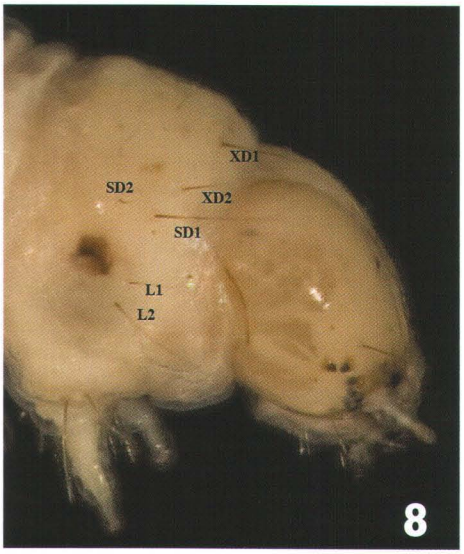


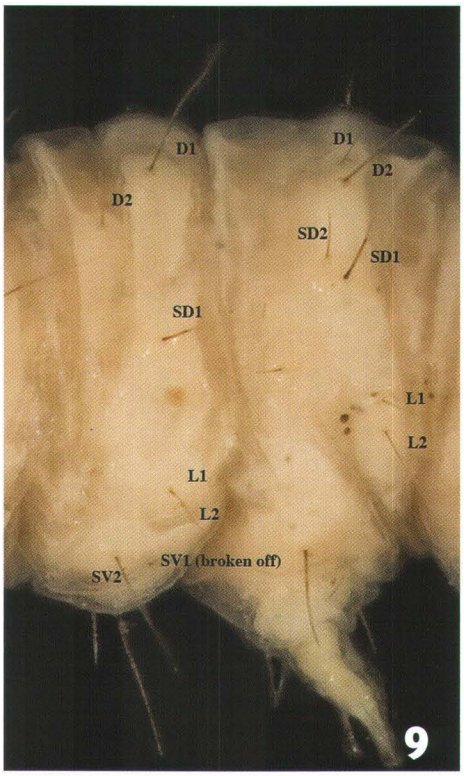


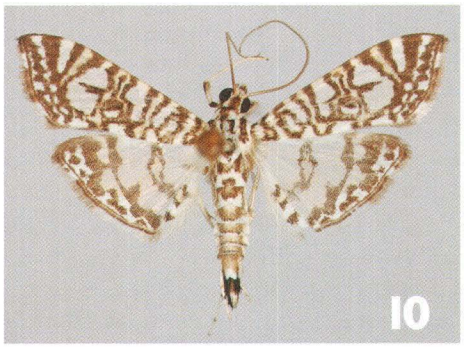







## New Sightings of *Glyphodes onychinalis* in California

**1)** *G. onychinalis* adult feeding on Jasmine flowers (photo by D. Sterba) **2)** *G. onychinalis* sitting on vegetation (photo by D. Sterba) **3)** Larva collected by N. Nisson, R. Garrison & R. Penrose, Newport Beach, CA, September 14, 2000. (Photo by M. Metz) **4)** Larva on leaves of *Nerium* sp.. California, Orange Co., Newport Beach, 14 September 2000. (Photo by R. Garrison) **5)** *Nerium* infested with *G. onychinalis*, CA: Orange Co., Newport Beach, 14 September 2000. (Photo by R. Garrison) **6)** *Nerium* infested with *G. onychinalis*. CA: Orange Co., Newport Beach, 14 September 2000. (Photo by R. Garrison) **7)** Adult male collected at light by David Kellum. California, San Diego Co., San Diego, 22 March 2001 (photo by R. Garrison). **8)** Head and prothorax of larva collected on September 14, 2000. **9)** Metathorax and first abdominal segment collected on September 14, 2000. **10)** *G. onychinalis* adult male at NMNH (Sri Lanka, collected in 1970 by D. Davis & W. Rowe) (photo by M. Metz) See article on pp. 79.

# The Euonymus Leaf-notcher, *Pryeria sinica* Moore (Lepidoptera: Zygaenidae) - Alive and Well in Fairfax County, Virginia

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*and*

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Among the most interesting and attractive additions to the Lepidoptera fauna of North America over the past decade is the euonymus leaf-notcher, *Pryeria sinica* Moore (Lepidoptera: Zygaenidae) (Figs. 1-5). A native of the eastern Palaearctic (China, Taiwan, Korea, Japan, and the Russian Far East), this species was first reported in the United States by Brown et al. (2004) from Virginia and Maryland. It was first noticed in 2001 by a resident of Fairfax County, Virginia, where the brightly colored larvae (Johki & Hidaka 1979) were voraciously stripping the leaves from her ornamental *Euonymus* (Celastraceae). *P. sinica* subsequently was discovered in Anne Arundel County, Maryland in 2003. The pathway for these introductions was assumed to be nursery stock from the Orient (Brown et al. 2004), but neither the route nor the origin has been documented. In the years since its first appearance in Virginia and Maryland, *P. sinica* does not appear to have expanded its range much, suggesting it may remain highly localized and of limited economic importance. It went unnoticed in urban Fairfax in 2006 and 2007. Control of this species has been facilitated, in part, by the use of *Baccillus thuringiensis* and a few "garden variety" insecticides by homeowners to help limit outbreaks and the coincident damage to their ornamental plantings. However, the species was back with a vengeance in 2008.

The handsomely-colored adult of *P. sinica*, with its black and orange body and smoky-translucent wings, appears to be a wasp-mimic (Figs. 1-5). Males are smaller (forewing length 10-13 mm) and have bipectinate antennae (Fig. 1), making it easy to distinguish them from the larger females (12-15 mm), which have clubbed antennae (Fig. 2). The life cycle of *P. sinica* in the eastern Palaearctic is well known (e.g., Ishii et al. 1983): eggs are laid in November, larvae hatch in March and April, and pupation takes place in late May, followed by a diapause until late October or early November, when adults emerge. A late fall flight for a lepidopteran is highly unusual in northern Virginia – few, if any, other diurnal Lepidoptera are still present in urban areas after the first freeze of fall/winter. However, the flight period of *P. sinica* in the eastern U.S. is virtually the same as in the native habitats of this species. Hence, the species is well adapted to the cool or cold days of the mid-Atlantic portion of the U.S.

On 1 November 2008, ca. 1500-1600 hrs, with temperatures in the upper 60s F and sunny skies, we observed numerous individuals of *P. sinica* in flight in Fairfax, Virginia. Adults also were observed the previous and following weeks (i.e., on 26 October and 7 November, respectively). Several vouchers were collected and deposited in the National Museum of Natural History, Smithsonian Institution, Washington, DC.

Dozens of individuals were present, both males and females, on ornamental shrubs, some of which were *P. sinica*'s recorded host plant (*Euonymus* sp.) (Sato 1969) (Figs. 2-4). However, we also found individuals on non-host species such as ornamental juniper (Figs. 1 and 2) when these bushes were in the vicinity of *Euonymus*. We observed intraspecific interactions among individuals on all substrates. Most of these interactions were initiated by males and focused on gaining access to females ready to mate. In some cases three or four males were observed courting a single female (e.g., Fig. 3), but more frequently we encountered male-female pairs, some of which were copulating (Fig. 4). We also observed mated females laying eggs in clutches on *Euonymus* stems, usually close to shoots (Fig. 5). As they were laying their eggs, females placed a cover of scales on top of the eggs (Fig. 6), presumably to discourage predation. After the egg-laying, females have noticeably fewer black hairs in the tuft at the end of the abdomen.

The flight of *P. sinica* is atypical for a lepidopteran and more reminiscent of that of a bee or wasp, with movement that is smooth and slow, and not at all fluttery. Because these moths are likely morphological mimics of stinging hymenopterans, such flight behavior contributes to making the mimicry more convincing.

The diurnal habitat, attractive adult coloration, and unusual flight period of

this species combine to make it the most conspicuous of our recent arrivals to the U.S. Compared to newly arrived tortricid moths, such as the light brown apple moth (*Epiphyas postvittana* (Walker)) and the brown oak tortrix (*Archips xylosteana* Linnaeus), both of which are relatively small and cryptic species but with the potential to become important agricultural pests, *Pryeria sinica* seems relatively innocuous, at least for the time being.

We thank Barbara and Mark Patrick for allowing us to inspect plants and photograph moths in their yard.

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## Taman Negara

*Continued from pp. 69*

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### Acknowledgements

*Thanks to my girlfriend Danusia for being such a great partner on the second Taman Negara trip. Thanks once again to my good friend Holly Gordon for computer help with the digital photos. Thanks to the enthusiasts, collectors and authors whose efforts and dedication provided me with the broad general understanding to have a fair knowledge of this region's butterfly fauna; among authors, especially Bernard D'Abrera, for his magnificent pictorial Oriental Region volumes and A. Corbet, H. Pendlebury and J. Eliot for their excellent natural history volume. For another opportunity and privilege to be immersed in sublimities and bombarded with epiphanies, I Thank our Great God.*

### Correction

*P. Ramaceus* was inadvertently omitted from the caption of photo 4 on the back cover of the Summer NEWS. In the '*Graphium*' congregation, it is actually the most numerous species present.

## Robber Fly

*Continued from pp. 70*

from Mexico from Durango and Morelos. Dr. Fisher informed us that the genus *Wyliea* contains a second species that occurs in Southern Mexico and Guatemala, *W. chrysauges* (Osten-Sacken) which mimics wasps in the scoliid genus *Campsomeris*.

Finally, Dr. Fisher told us that *W. mydas* "is not too abundant" in museum collections, especially when its spectacular appearance is taken into account. He opined that 2007 was an unusual year for the number of collectors reporting it. He cautioned, however, that robber fly populations "are not tracked that carefully" in North America. Time for the dipterists to start holding 4th of July robber fly counts.

### Acknowledgements

*The authors gratefully acknowledge John Acorn, Rob Cannings and Eric M. Fisher for their invaluable assistance in the preparation of this note. The authors also thank Rick Cech for photographing the specimen illustrated.*

### Literature Cited:

E. M. Fisher. October 18, 2008 e-mail to Harry Zirlin.

D. Grimaldi & M. S. Engel 2005. *Evolution of the Insects*, Cambridge University Press.

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# New Book: Moths of Western North America

by Jerry A. Powell and Paul A. Opler

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Submissions are always welcome! Preference is given to articles written for a non-technical but knowledgable audience, illustrated and succinct (under 1,000 words). Please submit in one of the following formats (in order of preference):

**1.** Electronically transmitted file and graphics—in some acceptable format —*via* e-mail.

**2.** Article (and graphics) on diskette, CD or Zip disk in any of the popular formats/platforms. Indicate what format(s) your disk/article/graphics are in, and call or email if in doubt. Include printed hardcopies of both articles and graphics, a copy of the article file in ASCII or RTF (just in case), and alternate graphics formats. Media will be returned on request.

3. Color and B+W graphics should be good quality photos or slides suitable for scanning or—preferably—electronic files in TIFF or JPEG format at least 1200 x 1500 pixels for interior use, 1800 x 2100 for covers. Photos or slides will be returned.

4. Typed copy, double-spaced suitable for scanning aand optical character recognition. Original artwork/maps should be line drawings in pen and ink or good, clean photocopies. Color originals are preferred.

# Submission Deadlines

Material for Volume **51** must reach the Editor by the following dates:

| Issue | Date Due |
|---|---|
| 1 Spring | Feb. 15, 2009 |
| 2 Summer | May 15, 2009 |
| 3 Autumn | Aug. 15, 2009 |
| 4 Winter | Nov. 15, 2009 |

Reports for Supplement S1, the Season Summary, must reach the respective Zone Coordinator (see most recent Season Summary for your Zone) by Dec. 15. See inside back cover for Zone Coordinator information.

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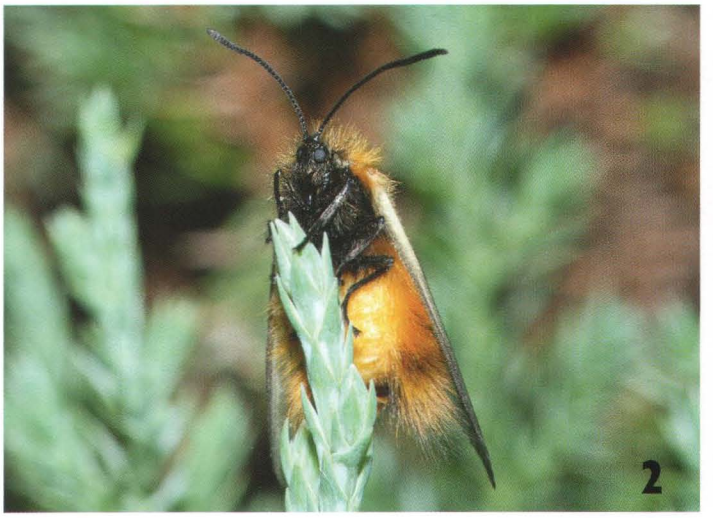






## The Euonymus Leaf-notcher, *Pryeria sinica* Moore (Lepidoptera: Zygaenidae)

**1)** Male of *Pryeria sinica* on juniper. Note the bipectinate antennae. **2)** Female of *P. sinica* on juniper. Note the clubbed antennae. **3)** One male attempting to mate with a female, with another male nearby. **4)** Mating pair. **5)** A female laying eggs. **6)** A close-up of an egg mass showing eggs covered with hairs. (See article on pp. 96.)