

NEWS

OF THE

LEPIDOPTERISTS' SOCIETY



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... and more!



NEWS OF THE LEPIDOPTERISTS' SOCIETY

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The Lepidopterists' Society is a non-profit educational and scientific organization. The object of the Society, which was formed in May 1947 and formally constituted in December 1950, is "to promote internationally the science of lepidopterology in all its branches; to further the scientifically sound and progressive study of Lepidoptera, to issue 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" directed towards these aims. (Article II, Constitution of The Lepidopterists' Society.)

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Front Cover:

Neumogenia poetica (Noctuidae), 2011 Lep Course, Southwestern Research Station, near Portal, Arizona, August, 2011, Hugh McGuinness (see p. 19 for 2012 course info and back cover for more pictures)

A New Larval Host plant for the Golden-Banded Skipper (*Autochton cellus*: Hesperidae: Eudaminae) in Florida

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During a field trip of the North American Butterfly Association Hairstreak Chapter on May 21, 2010 to Florida Caverns State Park, we found a few young hesperiid larvae on an undetermined vining legume (Figure 1D). The park is located just north of Marianna in the Florida Panhandle (Jackson County). The site was along a trail through mesic to xeric hardwood forest. The larvae were too young to identify. The Long-tailed Skipper (*Urbanus proteus*) and Silver-spotted Skipper (*Epargyreus clarus*) are common Florida butterflies that use many different legumes as host plants. Young larvae of these skippers are difficult to distinguish from those of the Golden Banded-Skipper. However, on June 12, 2010 we returned to this site and found two last instar larvae of the Golden Banded-Skipper (*Autochton cellus*) on the same plant (Figure 1C). This observation was noted by Schweitzer *et al.* (2011). Here we discuss the new host plant and its use by the Golden Banded-Skipper in greater detail.

Prior to our observations, the Golden Banded-Skipper has only been known to use Hog Peanut (*Amphicarpaea bracteata*) as a larval host in the eastern U.S. (Clark 1936, MacNeill 1975, Burns 1984, Opler and Krizek 1984, Scott 1986, Opler and Malikul 1992, Glassberg 1993, Allen 1997, Glassberg 1999, Glassberg *et al.* 2000, Brock and Kaufman 2003, Cech and Tudor 2005, Minno *et al.* 2005). However, the southwestern population uses many legumes as larval hosts including *Phaseolus filiformis* (formerly *Phaseolus wrightii*), *Phaseolus pedicellatus* var. *grayanus* (formerly *Phaseolus grayanus*), *Clitoria mariana*, and *Vigna* species (Burns 1984) as well as *Robinia neomexicana*, and probably *Phaseolus ritensis* and *Desmodium batocaulon* (Bailowitz and Brock 1991).

On July 24, 2010 we again visited the Golden Banded-Skipper site at Florida Caverns State Park. This time we found a few flowers and were finally able to identify the host plant as Thicket Bean (*Phaseolus polystachios* var. *polystachios*). We also found two groups of first instar larvae in their conspicuous leaf shelters (Figure 1B). As we were examining the plant a female Golden Banded-Skipper appeared (Figure 1A). The female fluttered around the plant and perched on the leaves and other nearby vegetation and fed at the flowers of *Melanthera alba*, but did not lay any eggs. After several minutes she flew into the forest and was lost from view.

The leaves of Thicket Bean are similar to Hog Peanut. However, Thicket Bean is a more robust vine and generally has larger, wider leaflets. Thicket Bean grows on the ground and vigorously climbs into shrubs and other supports. A key character differentiating Thicket Bean from Hog Peanut is the twisted keel petal of the flowers (Wunderlin and Hansen 2003) (Figure 1E). There are two different varieties of Thicket Bean in the southeastern U.S., typical and *Phaseolus polystachios* var. *sinuatus* which has deeply lobed leaves and is found in very dry habitats.

Thicket Bean is locally distributed in Florida and much of the eastern U.S., except northern-most states (U.S. Department of Agriculture PLANTS Database [<http://plants.usda.gov/java/>]). In Florida it has mostly been reported from northern and central regions of the state (Florida Atlas of Vascular Plants website [<http://florida.plantatlas.usf.edu/>]). At Florida Caverns State Park we only know of the one site for Thicket Bean, but others are likely to occur there.

The eastern U.S. population of the Golden Banded-Skipper has declined over the last few decades (Schweitzer *et al.* 2011). In Florida, this rare butterfly had populations in the Panhandle (Leon and Liberty counties) and disjunctly in and near Gainesville (Alachua County) in north-central Florida (Kimball 1965). There are other records of the Golden Banded-Skipper for Columbia, Jefferson, Suwannee, and Volusia counties (Butterflies and Moths of North America website [<http://www.butterfliesandmoths.org/>], Jue *et al.* 2011), but no breeding colonies are known in these areas. Burns (1984) discusses a record of *Autochton cellus* from southern Florida mentioned by Grossbeck and one from Cuba in the British Museum of Natural History that are likely to be mislabeled specimens.

Dean and Sally Jue of the Florida Natural Areas Inventory and other members of the NABA Hairstreak Chapter have recently found colonies of the Golden Banded-Skippers in Leon and Jackson counties. One of the most robust colonies in the eastern U.S. was threatened by prescribed burning (Jue *et al.* 2011), but the land managers of the park have now incorporated the Golden Banded-Skipper into their management plan. The Gainesville population may no longer be extant (Jue *et al.* 2011), since no one has reported the Golden Banded-Skipper from Alachua County for at least a decade.



Figure 1. *Autochton cellus* and host plant at Florida Caverns State Park, Jackson County, Florida. A) adult female on July 24, 2010, B) shelters made by the first instar larvae, C) a mature larva, D) leaves of Thicket Bean (*Phaseolus polystachios* var. *polystachios*), E) flowers of Thicket Bean showing the twisted keel.

Skippers or Silver-spotted Skippers. We did observe two instances of female Golden Banded-Skippers laying an egg on *Phaseolus polystachios* versus no such observations on hog peanut, but we can't conclusively say that they aren't using hog peanut. Before some of the yellow composites started blooming, we found *Phaseolus polystachios* to be the most commonly-used nectar plant for summer brood Golden Banded-Skippers."

The Golden Banded-Skipper is so rare, that host plant use in Florida and other eastern states has been very poorly documented. Marc Minno once found a larva on the invasive exotic Kudzu (*Pueraria montana* var. *lobata*) in Gainesville, but Hog Peanut also occurred at this site. The distribution of the Golden Banded-Skipper in Florida better fits that of Hog Peanut, which has been reported from just four counties in the eastern Panhandle and five in the northern peninsula (Florida Atlas of Vas-

Although Hog Peanut seems to be a critical habitat component for the Golden Banded-Skipper, Thicket Bean may be equally important. It was a favored host plant at Florida Caverns State Park and *Phaseolus* species are much used by the southwestern population (Burns 1984). Dean Jue made the following comments to us in a recent email communication:

"During our surveys at Phipps Park this past year (2011), we found almost no butterfly activity on hog peanut. All eggs, tent shelters, and larvae were on *Phaseolus polystachios*. Some of this activity was due to Long-tailed

cular Plants Website [<http://florida.plantatlas.usf.edu/>], rather than Thicket Bean. However, based on Dean and Sally Jue's observations, Thicket Bean appears to be both an important host and nectar plant for the Golden Banded-Skipper, at least in the Florida Panhandle. Land managers should encourage Thicket Bean at parks and preserves where the Golden Banded-Skipper occurs in order to provide more food for the larvae. Thicket Bean probably likes some habitat disturbance, as it grows along trails, and may respond well to fire, as does Hog Peanut (Jue *et al.* 2011).

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Results of the 2012 Election

The Lepidopterists' Society

President Elect:			
	Andrew D. Warren*		325
	Harry Zirlin		84
	Irving Finkelstein (Write-in)		1
	David Wagner (Write-in)		1
Vice President:			
	Astrid Caldas		198
	Curtis Callaghan*		314
	Adam Cotton*		305
	Daniel Janzen*		284
Secretary: Mike Toliver*			403
Treasurer: Kelly Richers*			407
Executive Council:			
	John Calhoun*		331
	Robert Dirig*		208
	John Fleckenstein		169
	Jeff Marcus		180
	Wayne Wehling*		260
	David C. Iftner (Write-in)		1
	Marcelo Duarte (Write-in)		1
	Jackie Miller (Write-in)		1

(* -- denotes winner)

Honorary Life:

	Yes	No	Abstain	%
Paul Opler:	401	9	23	92.6

Paul Opler is our newest Honorary Life Member. Paul, congratulations from the Lepidopterists' Society!

(Read David Wagner's celebratory article about Paul in this issue on pages 16-17.)



Conservation Matters:
Contributions from the Conservation Committee

An Essay to the Future

John Shuey

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I often tell students across Indiana that they will live through the most interesting of times. My own generation will apply the finishing touches to actions that will shape and mold future society – the future they will inhabit. The Greeks laid the foundations of Western Culture. The Han Dynasty underpinned much of the East. Mesoamerica gave us maize, tomatoes and potatoes – staples of the world. Every culture contributed wonderful religious traditions and beliefs that enrich our lives. Einstein, Darwin and Wallace gave us the conceptual tools required to understand the modern Universe and our place within it. But today, our collective actions may dwarf those contributions of the past. Through over-population, consumerism and commitment to short-term economic gains, I and my merry cohorts will help create an unstable climate that will rock the globe's ecosystems. This will be our historic contribution to our descendants – a century which may indeed be interesting, but to the world itself, not as much. Evolutionarily lineages will be irreversibly lost as our legacy ripples across the planet. Species we take for granted will struggle to find new niches. Entire communities may be lost. While people will certainly notice as the big cats vanish, the thousands, if not tens-of-thousands, of moths and butterflies likely to be lost will fly below the radar. They will become “collateral damage” as stressed ecosystems and societies adapt. Many species, representing unbroken threads reaching back through billions of years of evolutionary history, will be snuffed out like a cheap Dominican cigar on the fossil laden steps of my back porch.

Or not.... Certainly, we are all aware of the calls for reducing greenhouse gasses, and I won't devolve into a discussion of this issue. But instead, I'll bring this essay back to Lepidoptera, our common interest. As Astrid Caldas (in the previous essay in this column) noted, there are legitimate concerns about the perceived lack of research into the impact of climate change on Lepidoptera. The bulk of the emerging literature is a tribute to changing distributions – virtually all devoted to expansions while largely ignoring the more difficult to detect contractions that would also be expected. From a conservation perspective, these range contractions could provide important insights into the mechanisms of climate induced extinction, guiding the development of future conservation strategies. Or in some cases lack of range contractions may demonstrate ranges that were not limited by climate. While Astrid is just too polite to say it out loud, her essay clearly points out our ignorance on the subject. Her point being that we need to address our short comings if we hope to make a difference.

Admittedly, I've never been one to allow ignorance to get in my way. I live in a state with shattered ecosystems, a tribute to Mesoamerican genetic engineering. In a fragmented landscape like this, site-based conservation is all about placing your bets for the future and, for the most part, letting them ride. Every park and nature reserve is a drawn out experiment that will potentially never end. Can a preserved habitat (we call them ecosystem remnants in the Corn Belt) hold onto its diversity for 20, 50 or 100 years? Think back to your understanding of island biogeography for insights, picture prairie remnants floating in a sea of maize and soya, and you are likely to intuit species declines, at least for the native species. Throw in climate change and the increased uncertainty can unhinge the pessimistic among us. In Indiana, I place most of our bets. But like my conservation counterparts everywhere, I try to cheat the system as best as possible using “best available science”.

Conservation is an iterative and sequential exercise – a critical concept. With a few exceptions, we build today on the success of our predecessors, such as the professionals that protected the bulk of the remaining prairies in the Midwest and set them aside for the future. In the process, they conserved many of the finest locations for prairie lepidopterans in the country. But within 10-15 years of effort, they and others realized that these prairies were rapidly becoming shrublands and that prairie insects were often the first to succumb to reduced habitat size and quality. Aggressive prescribed fire was implemented to re-open habitat, further stressing insects. Later professionals scaled this management to provide refuge for fire sensitive species - a process still being refined. About 15 years ago, I helped initiate the first attempt to heal a Midwestern prairie landscape from an entomological perspective. It involved a local genotype mix of > 500 plant species seeded over 6,000+ acres designed to create expansion habitat around remnants and to re-build a larger grassland “island” of over 30 square miles. Today we ponder and implement strategies to increase ecological resilience in conservation areas by restoring complex hydrologic gradients, in part designed to address the predicted impact of climate change on these grassland mosaics. By removing agricultural drainage in adjacent fields we can retain more water as insurance against drought. At the other extreme, we are aggressively restoring the open drought-adapted oak barrens in these mosaics as “pre-adapted” species rich habitats that should thrive under future predicted climates in Indiana. And yes, butterflies

and moths are used at these and a few other limited sites as tools to assess the success of these strategies. At some point in my life I'll move on, but the sequential process will proceed. My successors will adjust strategies accordingly as new insights are developed. Another critical concept that we must understand is that ignorance is a moving target. Even as we fill critical gaps in our knowledge, new questions will emerge. The one constant in conservation is the uncertainty of the future.

At some level, our charge as a (mostly middle-aged) organization is to leave something positive for the future. If I include my toes, I bet that I can count the entomologists like myself who have direct influence in land management decisions in the US. We are numerically swamped by botanists, fisheries biologists, herpetologists and ornithologists, and these ecologists routinely shape the future management of conservation areas that benefit their selected organisms of interest, often to the detriment of ours (not out of malice, but rather due to that ignorance thing). For example, those typical 30-50 plant species "prairie restorations" perform admirably for grassland birds, reptiles and mammals. Wetland restorations provide wonderful breeding habitat for amphibians even if dominated by invasive plants. For these vertebrates it's all about "habitat structure" - not composition. But expanses of invasive species and low diversity restorations play little, if any, role in enhancing the diverse regional assemblages of host-specific lepidopteran communities. With just a few seats at the table, our influence on action is limited and strategies that maximize perceived conservation gains generally take insects for granted.

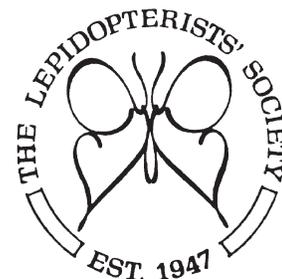
I'm not recommending that we all leave our jobs for careers at national parks or land trusts. Rather, that we strategically lend our expertise to the assessment and understanding of the effectiveness of the slow-motion conservation experiments that surround us. Unfortunately, we generally perceive that "Lepidoptera conservation" is focused on glamorous species in some distant location. The reality is that success hinges on the conservation of the "common" communities that literally surround us, especially as the future stresses of climate change unfold. For example, the rich mesic forests of glaciated Indiana support upwards of 2,000 species of Lepidoptera. Most of the small isolated woodlands (< 100 acres) of the Corn Belt are probably doomed to collapse from increased drought and invasive species over the next 50 years. In Indiana, we've moved our bets to just three larger glaciated forest sites that seem "defendable", with the hope that these limited sites can carry the bulk of our mesic forest diversity into the future. It's a bet we placed based on two factors; "best available science" masking ignorance, and the financial realities that limit the number

of bets we can place. I would love to have some real insight beyond botany and neotropical migrant songbirds to adjust our decisions, but alas, I don't. Across the globe and likely within a few miles of your home, people like me are making similar decisions which have great potential to conserve lepidopteran communities and there is a good chance that they are missing the mark.

Collectively, our membership possesses world-class expertise and insight that could help move the conservation bar forward. Astrid asked us very politely to engage in the process - I'm willing to beg! As a rule, scientists and lepidopterists are cautious people, never prone to making ungrounded recommendations. That innate caution, that we are never absolutely sure "that *(insert your recommendation here)* is a good conservation strategy" inhibits our ability to influence the future. Climate change is upon us now. It is not some abstractly interesting process of the future. Trust me, you can provide best available science if you are inclined. Your field observations, data, ideas, and insights all trump my ignorance. After 18 years in this business, I think I can speak for my counterparts across the US in encouraging your engagement. They cringe when I talk of ignorance, but they know what I mean. So much of conservation around the world- the real stuff where land is set aside and managed - flies by the seat of our collective pants!

The most interesting of times. Many of you have met Ryan, my eleven year old son, at our annual meetings. He's an awesomely mature kid, and over the years, I've had many "talks" with him about grown-up stuff. But the one discussion that I've avoided is my "you *will live through the most interesting of times*" talk. Personally, it is too painful and personal a subject for me to discuss with someone for whom I bear so much responsibility. I'm hoping for a day when I believe that the future world will offer more than just interesting times. Perhaps interesting plants and animals will endure as well. Someday soon, I'm hoping to glimpse a light at the end of this particular tunnel. And I'm trusting that some of you will provide some of the flashlights we'll need to push through it. Then perhaps I can have "the talk" and explain how we are trying our best to fix the things we broke.

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Notes on *Megathymus yuccae* as illustrated by Boisduval & LeConte [1873], with remarks about the holotype of *M. cofaqui*

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Plate 70 of the book *Histoire générale et iconographie des Lépidoptères et des chenilles de l'Amérique septentrionale* by Boisduval and Le Conte (1829-[1837]) portrays a butterfly that these authors named *Eudamus (?) yuccae*. This species is now recognized as the yucca giant-skipper, *Megathymus yuccae*. A small engraved inscription on the plate reads, "Abbot pinx.," meaning the illustration was derived from an original drawing by the artist-naturalist John Abbot ("pinx." is an abbreviation for the Latin "pinxit" = he/she painted it). The plate includes figures of the dorsal male, dorsal and ventral female, mature larva, pupa, and hostplant (Fig. 1). The engraver of this plate, known simply as Borromeé, rearranged the figures from Abbot's original drawing—probably measuring about 25 x 34 cm—to accommodate the smaller format of the book (16 x 24 cm). Whereas the original drawing was probably rendered around the year 1820, the engraved plate was issued nearly two decades later (Boisduval & Le Conte [1837]). No accompanying text was included, thus Plate 70 represents a description by indication; a named illustration with no written review of taxonomic characters.

Abbot's original drawing is believed lost, but his accompanying notes are preserved in the Houghton Library, Harvard University. He called this species the "Great Georgia Skipper Butterfly" and wrote that it was "rare but most frequent in the lower parts of the Country." He credited John E. Le Conte, Jr. (co-author of *Histoire générale*) with discovering the caterpillar and its "manner of living." These naturalists first became acquainted in 1813, when Le Conte commissioned Abbot to complete a set of Lepidoptera drawings. In 1828, Le Conte traveled to Paris, France, to meet with the entomologist Jean B. A. D. de Boisduval. Le Conte took with him many drawings by Abbot, including those commissioned in 1813, as well as some that he had rendered himself. Boisduval decided to use the drawings for a book on North American Lepidoptera and he considered Le Conte, who lived in New York, as his co-author. Livraisons (parts) were issued beginning in 1829. Boisduval also intended to include moths, but he lost interest in the book and ceased its production in 1837.

Abbot's drawings were the basis of 61 of the 78 hand-colored engraved illustrations in *Histoire générale* (Calhoun 2004). Many of these original watercolors are now preserved in the Irvin Department of Rare Books and Special Collections, University of South Carolina (Calhoun 2004). Among them is a life-sized drawing of a mature *Megathymus* larva, undoubtedly rendered by

Le Conte (Fig. 12). Across the top of the drawing in Le Conte's hand is written "Larva de le grande *Hesperia* [Larva of the large *Hesperia*]. Beneath the drawing, Le Conte wrote a brief Latin account of the life history of the species. Manuscripts at Harvard University reveal that the American entomologist Samuel H. Scudder sketched Le Conte's *Megathymus* drawing during a visit with Boisduval in 1871. Scudder later sent his sketch to the entomologist Charles V. Riley, asking if it represented *M. yuccae*, to which Riley enthusiastically replied, "Without doubt!" Riley (1876) published a detailed treatise on the life history of *M. yuccae*.

A second species. Nearly 120 years after the publication of Plate 70 in *Histoire générale*, Evans (1955) realized that the figure of the dorsal female actually portrays the cofaqui giant-skipper, *Megathymus cofaqui* (Strecker). Unaware of this earlier determination, I reached the same conclusion (Calhoun 2004). The wing markings of this figure are very similar to specimens of *cofaqui* from Georgia, including those described by Freeman (1955) as *Megathymus harrisi* (Figs. 2, 3). The ground color of *yuccae* is dark brown, while that of *cofaqui* tends to be a warmer brown. This is reflected by the dorsal figures on Plate 70; the male is seal brown and the female is more russet. The forewing discal spots in nominotypical *cofaqui* are usually connected to the large spot in cell M_3 , forming an unbroken orange band across the wing. These pattern elements are separated in *yuccae*. A small submedian forewing spot in cell CuA_2 (Cu_2) is generally present in females of *cofaqui*, but is virtually always absent in females of *yuccae*. The female on Plate 70 bears a sizable spot at this location. The figure in *Histoire générale* is the earliest known depiction of *cofaqui*.

Megathymus skippers were a great oddity during the early 19th century and specimens were extremely rare. For many years Abbot and Le Conte were probably the only naturalists who knew of their existence. The first species to be described was *yuccae*, followed four decades later by *cofaqui*. They were so misunderstood that some early authors believed they belonged in the moth family Castniidae. Western taxa of *Megathymus*, and those of the related genus *Agathymus*, were mostly described during the 20th century. Only a handful of specimens of *cofaqui* are known from Georgia prior to 1950 (Skinner 1911; Harris 1931, [1950], 1954, 1972). This species was first recorded in Florida around 1885 when it was collected by Charles W. Johnson in the vicinity of St. Augustine (Skinner

1911). Although the hostplant of *cofaqui* was suspected for many years (e.g. Riley 1882), it was not confirmed until Bonniwell (1916) found larvae and pupae in Florida on *Yucca aloifolia* L. Only after the biology of *cofaqui* was fully revealed by Bonniwell (1918) and Harris (1954) were numerous additional populations discovered, as adults are rarely encountered in nature. Many records are based solely on the presence of larval tents. The species was first recorded in South Carolina in 1976 (Mather 1977), in North Carolina in 1992 (K. Roever pers. comm.), and in Alabama in 1994 (Scholtens 1996; Howell & Charny 2010).

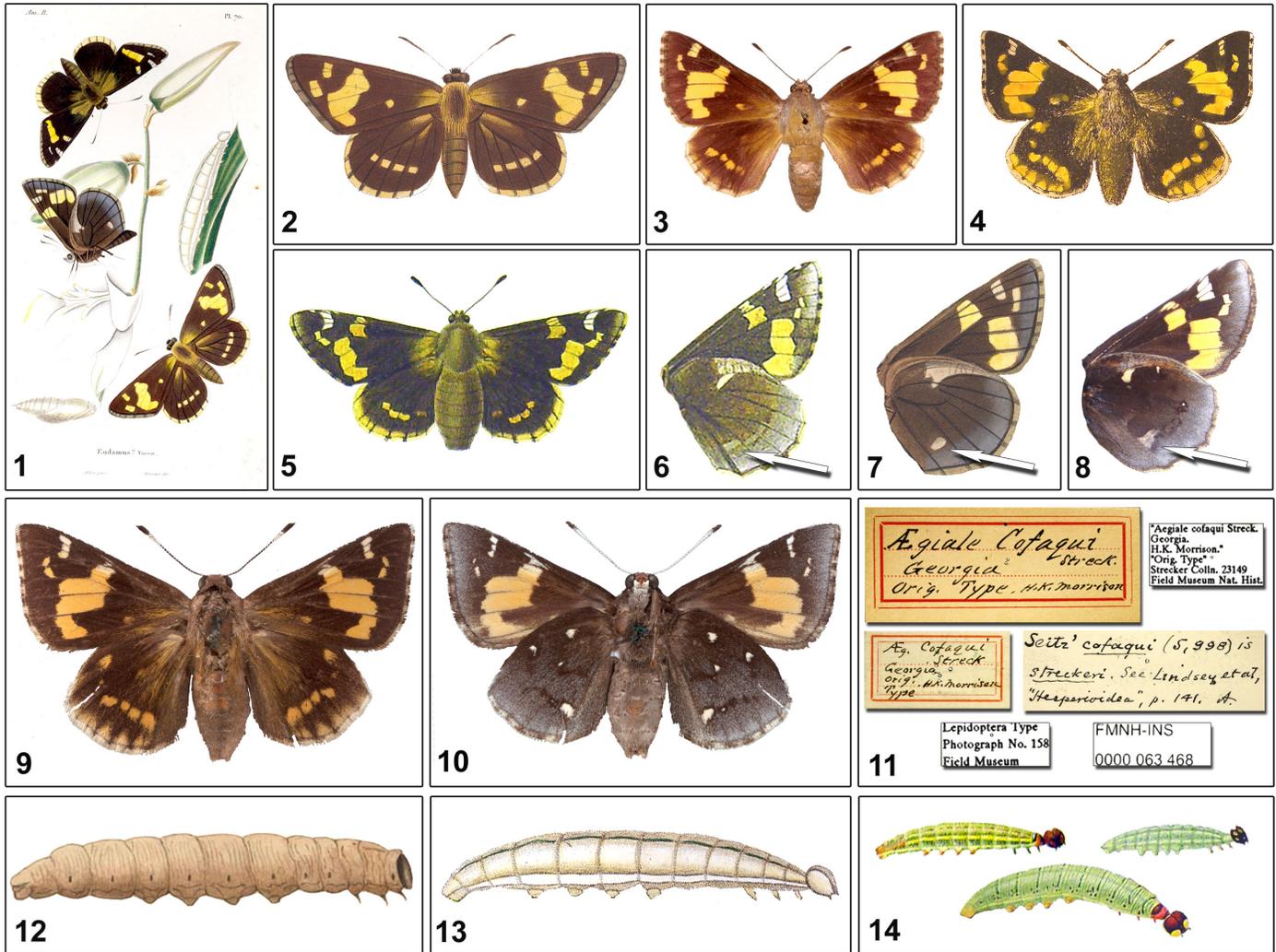
Source of the figured *cofaqui*. There are two plausible scenarios to account for the presence of *M. cofaqui* on Plate 70 of *Histoire générale*. The simplest explanation is that John Abbot collected at least one female *cofaqui* before 1820 and believed it represented *yuccae*. This would not be surprising, as *cofaqui* remained unrecognized until 1876. In addition, Abbot mentioned in his notes for his life history drawing of the “Great Georgia Skipper Butterfly” that one larva pupated on 17 May and the adult emerged on 20 June. This is very late for *yuccae*, which flies in Georgia from mid-February to early May (Harris 1972). Even in Florida, *yuccae* is not known to fly during June. This emergence date, however, may be applicable to *cofaqui*. In Georgia, adults of *cofaqui* have been recorded from early July to early September, but most records are from the piedmont and mountain regions. The species may begin to emerge earlier within the southern coastal plain. The entire flight period of *cofaqui* in southern coastal Georgia may be similar to that of the Florida panhandle, which is located within a similar physiographic region. Adults in the Florida panhandle fly from mid-June through early October, with rare emergences in late April (Zeiger 1979; M. Friedman pers. comm.; K. Roever pers. comm.). Abbot perhaps intended to illustrate the life history of *yuccae*, but mistakenly inserted a female of an undescribed species. He did this on several other occasions, such as portraying two different *Erynnis* skippers as the male and female of the same species. The relationships between species were poorly understood and numerous taxa remained undescribed.

Although Abbot possibly encountered *cofaqui* in Georgia, I do not think that he mixed two species of *Megathymus* in his drawing used for Plate 70 of *Histoire générale*. Abbot routinely duplicated his compositions to more easily fulfill orders for his drawings. He maintained a book of template drawings which he used for many years (Calhoun 2007). Despite Abbot's penchant for duplication, I have found no representations of *cofaqui* among his thousands of surviving Lepidoptera drawings. In fact, his only other illustrations known to portray *Megathymus* are two watercolors of *yuccae* at The Natural History Museum, London. Those drawings, probably rendered during the 1790s, accurately depict the dorsal and ventral aspects of two specimens, male and female, respectively. They were completed before the life history of *yuccae* was known.

Abbot's notes for these drawings, as transcribed by his London agent, John Francillon, read, “Taken 13th April in Oak Woods, sometimes in Fields near Swamps, very Rare.” This date is consistent with the flight period of *yuccae* in Georgia. Abbot was then residing in Burke County, Georgia, not far from the town of Waynesboro (Fig. 15). He collected insects in Georgia primarily within the counties bordering the Savannah River, between Burke and Chatham Counties, westward to Bulloch County. It was previously thought that Abbot lived and collected almost exclusively in Screven County. In reality, he resided there only for about three years, from 1813 to 1816.

The figures on Plate 70 of *Histoire générale* were credited to John Abbot, but it was probably Boisduval who was responsible for the inclusion of the female *cofaqui*. Issued in the tenth livraison of *Histoire générale* is a page entitled “Avis de l'un des Auteurs” [Opinion of one of the Authors], in which Boisduval announced, “I will touch on the nature of the drawings of Abbot, and I will completely redo them when they offer some inaccuracies” (translated from French). Plate 64, based on an Abbot drawing and issued with the 22nd livraison, apparently was altered because Boisduval disagreed with Abbot's representation of the butterfly now recognized as *Libytheana carinenta bachmanii* (Kirtland) (Calhoun 2004). Boisduval probably was not familiar with this species and believed that Abbot's figures were poor representations of the closely related *Libytheana motya* (Hübner), which was represented in his collection. It is conceivable that a female specimen of *cofaqui* likewise persuaded Boisduval to “correct” Abbot's female figure of *yuccae*. Such a specimen most likely came from Abbot, or even Le Conte, whose family owned a rice plantation in southeastern Georgia, called Woodmanston, located near Riceboro in present-day Liberty County. In a letter to the American entomologist Thaddeus W. Harris, Le Conte remarked that he had sent Boisduval “complete collections” of Lepidoptera from New York and Georgia (18 July 1840; Ernst Mayr Library, Harvard University). Although Boisduval referred to Le Conte as his “collaborateur”, Le Conte was not involved in the actual publication of *Histoire générale*. Le Conte provided drawings, specimens, and life history notes, but the plates and text were supposedly prepared entirely under Boisduval's supervision (LeConte 1874). In fact, Boisduval did not provide Le Conte with all the parts of the book as published and he kept all of Le Conte's materials (drawings and specimens) after production of the work had ceased (LeConte 1874; letter from J. E. Le Conte to T. W. Harris, *ibid.*).

Evidence suggests that the dorsal female on Plate 70 was only partially copied from Abbot's original figure. The shape of the wings does not agree with the shorter and broader dimensions of *cofaqui* (Figs. 2, 3). However, the wing shape is virtually identical to Abbot's earlier female of *yuccae* (Fig. 5), and the body is essentially copied from that of the male figure on the same plate. In keeping with



Figures 1 - 14: 1) Plate 70 of Histoire générale. 2) Dorsal female *M. cofaqui* from Plate 70 of Histoire générale. 3) Female (dorsal) *M. cofaqui*, Fulton County, GA (MGCL) (© Nick Grishin). 4) Female holotype of *Aegiale cofaqui*, as figured by Strecker ([1878]). 5) Dorsal female *M. yuccae* by J. Abbot, ca. 1792*. 6) Detail of ventral female *M. yuccae* by J. Abbot, ca. 1792* (arrow indicates “phantom spot”). 7) Detail of ventral female *M. yuccae* from Plate 70 of Histoire générale (arrow indicates overemphasized spot). 8) Ventral female *M. yuccae*, Charleston Co., SC (MGCL) (arrow indicates well-defined “phantom spot”). 9) Holotype (dorsal) of *A. cofaqui* (FMNH). 10) Holotype (ventral) of *A. cofaqui* (FMNH). 11) Labels associated with the holotype of *A. cofaqui* (FMNH). 12) Megathymus larva by J. E. LeConte. 13) Larva from Plate 70 of Histoire générale. 14) Examples of hesperiid larvae by J. Abbot. (*© The Natural History Museum, London).

his earlier compositions of *yuccae*, the original drawing for Plate 70 almost certainly included a female of *yuccae*. After learning the species’ life history from Le Conte, Abbot probably rendered figures of the early stages and combined them with adult figures of *yuccae* which he derived from his template drawings. The engraver of Plate 70 seemingly retained the wing shape of Abbot’s original figure, but changed the wing pattern and other elements at the behest of Boisduval.

The theory that Boisduval modified the dorsal female in Plate 70 is further supported by the gender of the ventral figure. During production of the plates for *Histoire générale*, Boisduval often altered the abdomens of Abbot’s figures to appear leaner (Calhoun 2004). This would explain why the abdomen of the ventral figure of Plate 70

is consistent with a male, but the wing shape and pattern are reminiscent of a female. This figure is comparable to Abbot’s earlier drawings of a female *yuccae* (Figs. 6, 7). If Abbot originally figured a female of *cofaqui*, logic dictates that he would have portrayed the ventral surface of that specimen, not that of another (i.e. a female *yuccae*).

Some lepidopterists have questioned the presence of the pale postmedian spot on the hindwing of the ventral figure on Plate 70 (Fig. 7). This spot is evocative of *cofaqui*, suggesting that Abbot rendered a composite or “hybrid” figure. However, this well-defined spot is undoubtedly an artifact of the reproduction process and does not accurately reflect a discrete character found on Abbot’s original drawing. This opinion is based upon Abbot’s earlier figure of the ventral female of *yuccae*, which includes a

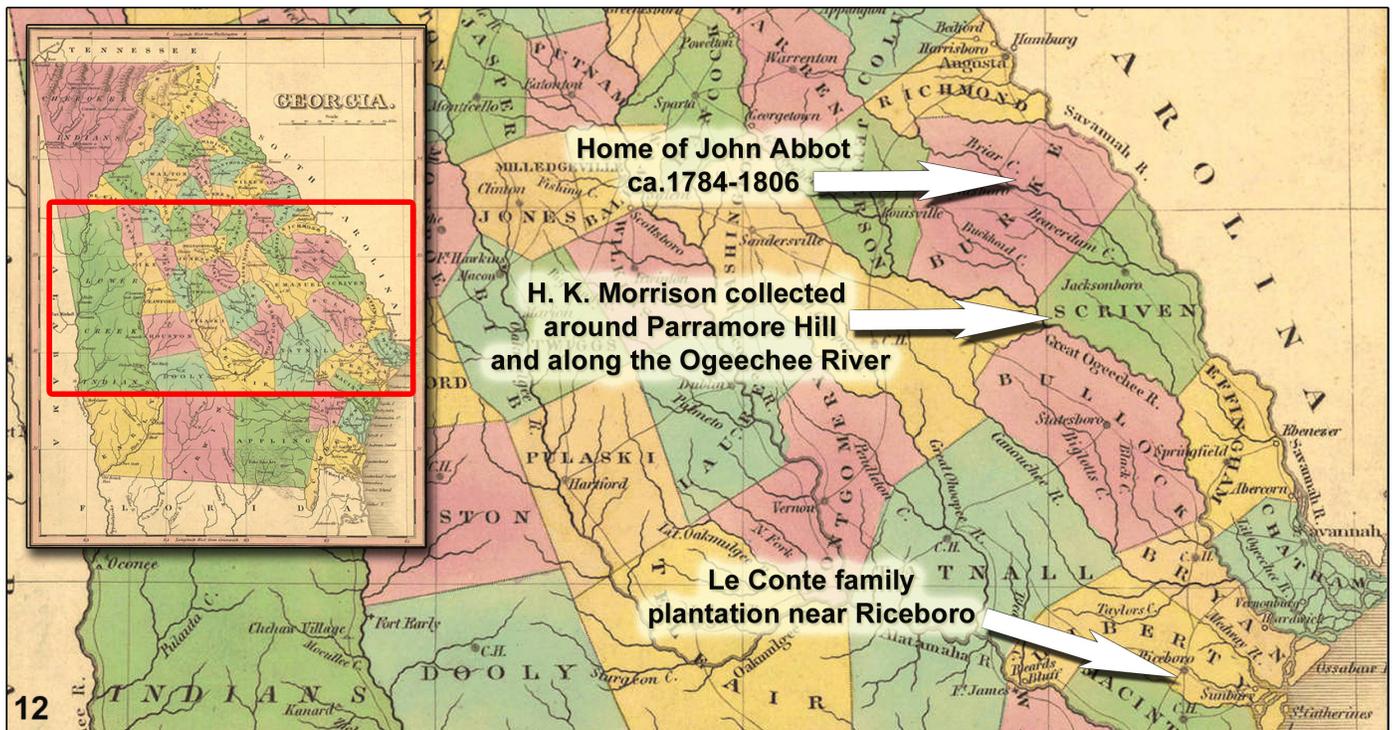


Figure 15. Early map of Georgia (Finley 1823) with locations relevant to this study (inset shows area covered).

faithful representation of a small patch of pale scales (a “phantom spot”) that is very distinct in some individuals of *yuccae* (Fig. 8). Because Abbot frequently duplicated his drawings, this feature was likely present on the ventral figure consulted for Plate 70. When reproducing this figure for the engraving, the colorists simply overemphasized this character. The engraved plates for *Histoire générale* include many such erroneous enhancements.

Finally, the larva on Plate 70 (Fig. 13) bears little resemblance to the actual larva of *yuccae*. Although it is difficult to determine the accuracy of Abbot’s original figure, the engraved version is consistent with his artistic style. He typically tapered the thorax of skipper larvae to create an exaggerated “neck”. The prothorax is generally smaller than the head in most hesperiids, but the opposite is true in *Megathymus*. The shape of the larva on Plate 70 is basically an enlarged version of Abbot’s other hesperiid larvae (Fig. 14). The pupa is likewise similar in form to Abbot’s other hesperiid pupae. It is possible that Abbot did not personally rear this species, but based his figures and notes on information from Le Conte. The colorists possibly contributed to the inaccuracy of the larva on the plate, such as omitting the dark head and adding longitudinal bands.

It is very important to remember that embellishments were a common component of hand-colored engraved illustrations. The abilities of the original artist, as well as those of the engraver and colorists, must be considered. We are so accustomed to photographic reproduction that

we routinely accept such images as accurate portrayals. Historical illustrations require that we refer back to the original drawings, or at least other drawings by the same artist, to help reveal the true nature of the subjects depicted.

The holotype of *cofaqui*. Strecker (1876) based his description of *Aegiale cofaqui* on a single female from Georgia. In his original description, Strecker perceived the similarity between the holotype and the female figured in *Histoire générale*. He wrote, “In markings of upper surface this species resembles somewhat closely the lowermost of Boisduval’s figures on plate 70...but the outline of the wings is entirely different.” Strecker also cited the presence of the forewing spot in cell CuA_2 of the figure, noting that Charles V. Riley, who had studied *yuccae* in detail, never found this spot on specimens of that species.

The holotype of *A. cofaqui*, now deposited in the Field Museum of Natural History (Chicago, Illinois; FMNH), was first figured by Strecker ([1878]) (Fig. 4). Photographs of this specimen were subsequently published, but they were not in color (Barnes and McDunnough 1912; Harris 1954) or were unclear and did not include all the associated labels (Gatrelle 1999). With the help of James H. Boone of FMNH I obtained new high resolution images for review (Figs. 9-11). Strecker created large drawer labels which he placed at the head of each series of specimens. He also used smaller labels to denote type specimens. Both kinds of labels are associated with the holotype of *A. cofaqui* (Fig. 11). These labels show that the specimen was received

from the ardent collector, Herbert K. Morrison. In a list of the type specimens contained in his collection, Strecker (1900) also attributed the specimen to Morrison, but offered no additional locality data. Strecker likely based the name *cofaqui* on the Muskogean settlement of Cofaqui, located near today's town of Louisville in Jefferson County, Georgia. The explorer Hernando De Soto traveled through this area in 1540 (Hodge 1907), and Strecker may have become aware of Cofaqui from Irving (1857) who translated De Soto's travels from contemporary accounts.

Many of Morrison's letters to Strecker are preserved among the extensive Strecker correspondence at FMNH. The late F. Martin Brown organized these manuscripts during the early 1960s and his photocopies are now deposited in the archives of the McGuire Center for Lepidoptera and Biodiversity (Gainesville, Florida; MGCL). According to this correspondence, Morrison collected in Georgia and North Carolina from early February through most of September 1876. Only five of Morrison's letters from this trip have survived, dated 3 March-13 April. All are postmarked from Parramore Hill, Screven County, Georgia (often spelled "Scriven" on older maps). Parramore Hill was situated along the Central of Georgia Railway, about 60 miles south of Augusta (Fig. 15). The site of this community is now located within Jenkins County, which was created in 1905. Morrison is not known to have visited Georgia prior to 1876; his letters from 1872-1875 were postmarked from Boston or Cambridge, Massachusetts, where he lived.

Morrison traveled to Georgia specifically to look for insects where John Abbot had explored many years earlier (Anonymous 1876a; Mann 1885). Morrison made a business of collecting insects and he offered Strecker many specimens from this trip, with the expectation that Strecker would advertize his collecting activities to other potential customers. On 23 March, Morrison advised Strecker, "I will not promise definitely to give you the rare things you may want, but if I hear from any that give me orders that it was from you they got their information, it would make a good deal of difference." A letter to Strecker from the entomologist Henry Edwards, dated 19 December 1876, reveals that Morrison offered as many as 250 specimens from Georgia for \$25. During that same month, Morrison told Strecker that he had collected additional specimens of *cofaqui*, but had already sold them. Strecker doubtless never knew exactly where these specimens were found, as Morrison was notoriously secretive about his collecting localities.

Citing information from F. Martin Brown, Harris (1972) implied that the holotype of *cofaqui* most likely came from the vicinity of Parramore Hill. However, Morrison did not confine himself to that portion of Georgia. On 13 April 1876, he told Strecker, "I am going down the Ogeechee [River] this next week, I will not be in Parramore for a month to come – I think I shall get good things down there."

The Ogeechee River flows from east-central Georgia to the Atlantic Ocean, just south of Savannah. In an unpublished circular sent to his entomological customers, dated, 1 September 1876, Morrison announced, "During the past summer I have been engaged in collecting the Insects of Southern and middle Georgia and of the Black Mountains of North Carolina." Although Gatrell (1999) argued that there is no evidence that the holotype of *cofaqui* came from anywhere other than the vicinity of Burke/Screven Counties of Georgia, Morrison presumably explored a sizeable portion of Georgia, perhaps reaching deep into the southern counties. Gatrell (1999) noted a resemblance between the holotype of *cofaqui* and specimens of the species from peninsular Florida, which he described as the subspecies *M. c. slotteni*. He downplayed this similarity under the assumption that the holotype was collected in east-central Georgia. Although Gatrell (1999) defined the type locality as Burke County, Georgia, we should consider the possibility that the holotype was collected in southern Georgia.

The holotype's date of capture also hints at a more southern origin. Strecker presented his manuscript describing *A. cofaqui* to the Academy of Natural Sciences of Philadelphia on 4 July 1876 (Anonymous 1876b) (it was published in September). It is reasonable to assume that Strecker required at least a week to compose his paper and submit it for publication. Morrison's letters indicate that he sent specimens to Strecker as he collected them in Georgia and it took five or six days for them to reach their destination in Reading, Pennsylvania. Consequently, the holotype was probably collected no later than the week of 18-24 June 1876. This is consistent with the June emergence date in the notes for Abbot's drawing of *yuccae*, which may refer to an individual of *cofaqui*.

Morrison also collected *yuccae* during his trip to Georgia. He mailed a postcard to Strecker from Parramore Hill, postmarked 1 April 1876, in which he announced, "Caught a perfect ♀ *Castnia yuccae* Bdv. Lec. today." Morrison offered the specimen to Strecker for two dollars—equivalent to about \$40 today. Although Morrison mailed this and five other specimens to Strecker on 12 April, a search of the Strecker collection revealed no *yuccae* from Morrison. Instead, Strecker's collection contains only three *yuccae* from Stewart County, Georgia, which were collected by A. W. Latimer, a druggist and publisher who lived in Lumpkin, Georgia and nearby Eufaula, Alabama. Many of Latimer's letters to Strecker, dated 1875-1900, are preserved at FMNH (copies at MGCL). During the 1880s, Latimer sometimes wrote letters with the letterhead "A. W. Latimer, Collector and Dealer in Insects...Lepidoptera a Speciality." These letters reveal that Latimer sent many specimens to Strecker. In a letter dated 7 April 1879, Latimer included a sketch of a female *yuccae* that he had reared from a pupa. This excited Strecker, who repeatedly asked Latimer to send specimens. After many failed attempts to rear more adults (most were parasitized),

Latimer sent several *yuccae* to Strecker in 1882. The absence of Morrison's "*Castnia yuccae*" in Strecker's collection implies that this was the specimen that Strecker described as *A. cofaqui*. Although populations of *cofaqui* in coastal Georgia may present a rare spring emergence, a capture date as early as 1 April is improbable. Strecker sold and exchanged many specimens from his collection, thus it is more likely that Morrison's *yuccae* was given to another entomologist. Strecker's correspondence also reveals that in 1876 he received several Florida specimens of *yuccae* which were collected by the Ohio naturalists Charles Dury and Edward Mills. These specimens were possibly discarded, as they were not in perfect condition.

Morrison's relationship with Strecker was tumultuous. After providing Strecker countless specimens over the course of a decade, Morrison died of dysentery on 15 June 1885 at the young age of 31 years. Two weeks later, Strecker received a letter from Morrison's wife, Ada, which included a bill for \$35.50 toward outstanding debts. On the envelope, Strecker curtly scrawled, "no answer...I don't owe the wretches a cent."

Acknowledgements

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Growing Degree Days: A Method to Predict Butterfly Emergence

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In 2007, observations of *Euphydryas gillettii* were recorded by multiple individuals in the Caribou Highlands region of Southeast Idaho during late June. Since neither of us had ever observed this butterfly, we planned a trip to southeast Idaho and western Wyoming during late June of 2009. Although we found numerous stands of the foodplant, *Lonicera involucrata*, in suitable habitat, we did not encounter *E. gillettii*. We suspected that we had visited the area prior to *E. gillettii*'s emergence and that suspicion was confirmed when others observed that species in the Caribou Highlands during late July of 2009 (a full month after our visit).

For many years, lepidopterists in Michigan have been using a Growing Degree Day (GDD) analysis to predict the emergence of spring and early summer butterflies in that state. We have successfully used GDD data, developed by our Michigan colleagues, to locate several of the bog-obligate butterflies in Michigan's upper peninsula, including *Boloria frigga*.

Could the same method be used in the western United States to time the emergence of *E. gillettii*?

A GDD is a measure of heat accumulation used by horticulturists and farmers to predict plant development rates such as the date that a flower will bloom or that a crop will reach maturity. This concept is premised on a view that unless influenced by other environmental factors, like rainfall, the development rate from emergence to maturity for many plants depends largely upon the daily air temperature. Since the emergence of many single-brooded butterflies in temperate regions is correlated with the development of their respective foodplants, it seems reasonable to assume that GDD analysis can be used to predict the timing of butterfly emergence.

A GDD is calculated by taking the average of the daily maximum and minimum temperatures compared to a base temperature as shown below:

$$GDD = \frac{T_{\max} + T_{\min}}{2} - T_{\text{base}}$$

Until recently, sources of GDD information were restricted mainly to agricultural agency websites and were rather difficult to access. However, GDD information can now be accessed throughout North America on websites such as

the one maintained by Weather Underground. Moreover, it is not necessary that GDDs be published for the specific locality that one plans to visit. Rather, a nearby airport (or alternative weather data site) can be used so long as there is a temperature correlation between the weather site and the site to be visited.

In order to time the emergence of *E. gillettii*, we first calculated the GDDs (base of 50 degrees Fahrenheit) for past observations in the Caribou Highlands. This analysis indicated that *E. gillettii* should be on the wing between 400 and 540 GDDs. The actual flight period should extend beyond this GDD window unless the prior observations occurred on both the first and last days of the flight period (an unlikely occurrence). We then had to plan a trip to Idaho during the predicted GDD window. That is where the rub occurs. Since we were planning to fly from Louisville, KY to Salt Lake City, UT, we wanted to purchase tickets as far in advance as possible to reduce travel costs. Since the greatest variability in GDDs occurs in the spring, we decided to base the timing of our trip on the actual GDD at the end of May and to assume that GDD values for June and July would be equal to historical averages. That method yielded a planned trip date of July 13-18, 2011.

We visited the Caribou highlands on July 14 and found *E. gillettii* to be flying at the primary locality that we intended to visit. We also found *E. gillettii* at another previously undocumented site in the Caribou Highlands and at a site in Gallatin County, Montana (where it was last observed 60-years ago, to the best of our knowledge).

We recommend the GDD method of estimating butterfly emergence in areas that are experiencing "normal" rainfall patterns and have significant year-to-year fluctuations in spring temperature.

Additional Notes on *E. gillettii* Habitats and our 2011 Experiences with the Species:

The Twin-berry host (*Lonicera involucrata*) of *E. gillettii* is not a common plant unless one locates the correct habitat. In the Caribou Highlands of Idaho, Twin-berry occurs along small and medium sized canyon water courses in the company of willows (*Salix* species), Dogwood (a *Cornus* species) and other riparian species. Twin-berry seems

Continued on p. 15

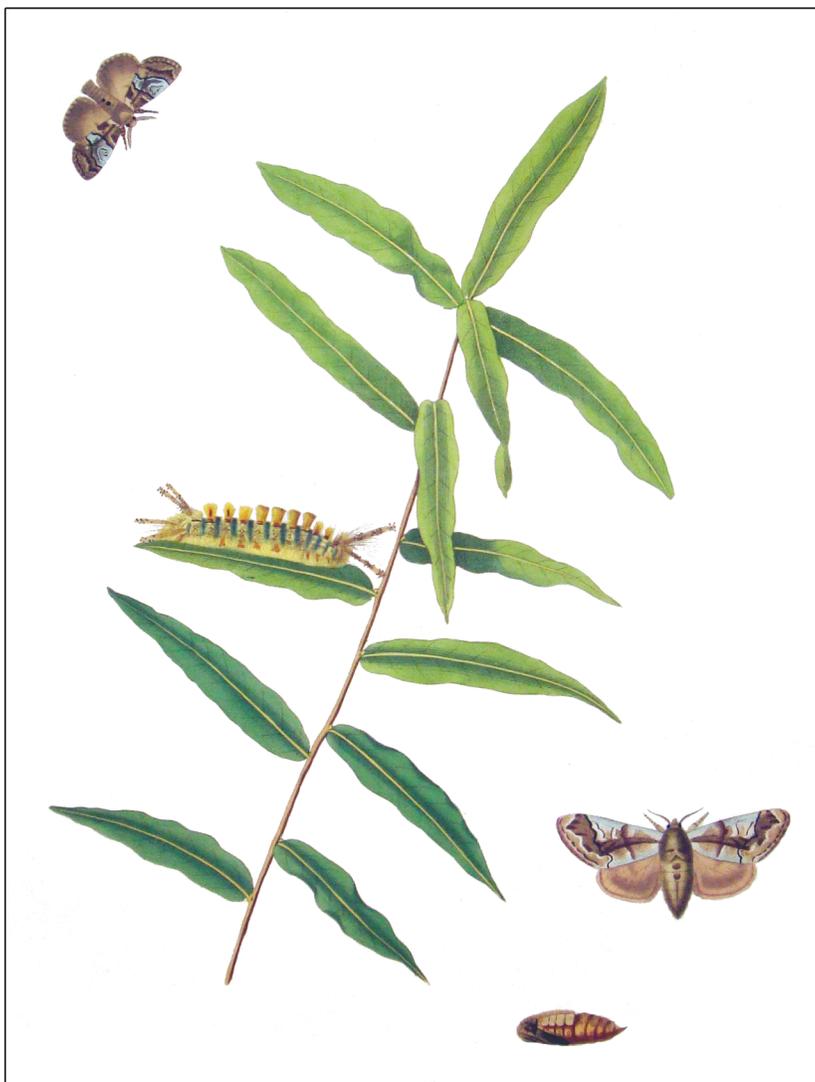
Another *Dasychira* Discrepancy

John V. Calhoun

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In a section entitled “The *Dasychira* discrepancy” within my treatise (2006, J. Lepid. Soc. 60:1-37) of the book, *The Natural History of the Rarer Lepidopterous Insects of Georgia* by Smith and Abbot (1797), I stated that the hostplant portrayed on Plate 78 (Fig. 1) was a species of willow, most likely *Salix nigra* Marshall. Not long after my paper appeared, Dale F. Schweitzer kindly informed me that the plant appeared to represent willow oak, *Quercus phellos* (L.), which is another acceptable host of *Dasychira basiflava* (Packard), the moth depicted in the original drawing by John Abbot and the uncorrected version of the published plate. I discussed this with the botanist who had helped me with plant identifications for the project. He explained that the digital image of Plate 78 which I had provided was slightly pixilated, leading him to believe that the leaves had finely toothed margins as found in *Salix nigra*. As the leaf margins on the actual illustration are clearly entire, I am embarrassed that I did not catch this mistake. This is even more discouraging given that J. E. Smith identified the plant as a species of *Quercus* in the text of the book! Although this oversight does not affect the substance of my paper, it could mislead those studying the historical literature on *Dasychira*.

Figure 1. Plate 78 of Smith & Abbot (1797) portraying *Quercus phellos*, not *Salix nigra*.



Growing Degree Days

Continued from p. 14

especially fond of growing in boggy, gently sloping open areas along these streams. Plants may be found growing in shade or full sun, with individuals of *E. gilletti* preferring plants growing in open sunny locations. We found individuals of *E. gilletti* perched on foliage of the host plants and flying somewhat clumsily along small streams where Twin-berry was growing. On several occasions in both Idaho and Montana we found individuals on mud or moist substrates along roads and trails.

The Gallatin County, Montana locality was noticeably different from Idaho's Caribou Highlands sites. In Montana

we found *E. gilletti* to be fairly common along a two-track trail through an open, second growth coniferous forest of mostly lodgepole pine and spruce. It was not until we had counted over a dozen individuals of the butterfly that we noticed Twin-berry was nowhere to be found. There was no watercourse or boggy opening, only a two-track through an open forest. Finally, we noticed numerous small *Lonicera*-like bushes growing throughout the forest understory. On closer examination we determined that this was indeed another species of *Lonicera*, but not having flowers or fruits, we could not identify the species with any certainty. This unidentified *Lonicera* was almost certainly the host plant for that local population of *E. gilletti*.

Paul A. Opler: Our Society's Newest Honorary Life Member

David L. Wagner

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(Much biographical information and suggested text were supplied Jerry Powell and John Brown)

"As an undergraduate student I attended the first meeting of the Pacific Slope Section of The Lepidopterists' Society, held in San Francisco in 1954; on the back of my program I wrote the name of an enthusiastic high school student from Pleasant Hill, a suburb east of Berkeley. Not in my wildest imagination could I have guessed that our futures would be intertwined and that I was talking with the person who would become in many ways the most influential lepidopterist of our generation, particularly in bringing moths, butterflies, and their conservation into public awareness."

(Excerpt from Jerry A. Powell's biological sketch for the Pacific Slope's 2000 Comstock Award winner, Paul A. Opler, who had come to be Powell's lifelong student, colleague, co-author, and friend.)



In December the membership of the Lepidopterists' Society conveyed Honorary Life membership on Paul Opler, whose interests in butterflies and moths and contributions to lepidopterology are now extending into a seventh decade. It seemed an appropriate opportunity to share some of Paul's background and accomplishments in the News.

Paul was born in Ann Arbor, Michigan on August 3, 1938. His family lived in Detroit until 1944 when they moved to central California. While generally interested in birds and other aspects of natural history as a youngster growing up in the Bay Area, it wasn't until 1947 that his interest in butterflies and moths became a passion after a prescient visit with friend Pete Robinson to the Entomology Department at U.C. Berkeley, where they had a chance to meet with Dr. E.O. Essig, the 'dean' of western entomology. Opler was only twelve when he joined the Lepidopterists' Society in 1950, missing Charter Membership by just a few years. Over the summers of 1953 and 1954, while working as a nature counselor at (Boy Scouts of America) Camp Wolfboro on the Stanislaus River east of Sacramento, Paul spent many hours studying the area's butterfly fauna. His introduction to the tropics would come just a year later, when he joined G. Alan Samuelson on a five-

week expedition to mainland Mexico. Other collecting trips were made to the California deserts, Coast Ranges, and destinations up and down the Sierra Nevada.

His Bachelor's degree in Entomology was completed in 1960 at the University of California, Berkeley. Quoting again from Powell, "Paul's undergraduate career at the Berkeley was worked around legendary weekend trips" to Napa and Lake Counties, the Sierra Nevada, and Coast Ranges. Even the Mojave Desert, Los Angeles County Museum (to record data for a co-authored paper on *Apodemia* paper), and southern California's Laguna Mountains were not too distant. On the latter trip he serendipitously met Ray Stanford, who, over the years, would become a lifelong colleague and close friend.

After graduation, Paul served as a medical entomologist in the U.S. Army, mostly identifying mosquitoes from U.S. Army posts in the Northeast, for two years. He then matriculated into a Masters program at San Jose State where he studied *Euchloe* (Pieridae) under the guidance of J.W. Tilden. He then entered a doctoral program at U.C. Berkeley under Jerry Powell. His research, funded by an NSF grant, examined host specificity, distribution, and ecology of Microlepidoptera that feed on California oaks and related genera; he received his Ph.D. in 1970.

From 1971 through most of 1974, Paul was a research associate of the Organization for Tropical Studies in Costa Rica. He conducted field studies on various aspects of reproductive ecology of tropical lowland plants, many of which were carried out at La Selva Biological Station. More than 25 papers and book chapters—on pollination biology, plant-insect relationships, and tropical ecology—resulted from the four years of his postdoctoral studies.

At the end of 1974, Paul was hired as the first invertebrate specialist with the United States Federal Endangered Species program. The present federal list of 60 endangered and threatened insect species is largely that which Paul developed. He authored innumerable contributions on threatened and endangered insects: recovery plans, status reports, and various symposia over his tenure in Washington. In 1983, he was promoted to Chief of a research section for U.S. Fish and Wildlife Service and National Biological Survey (later a branch of the U.S. Geological Survey) in Ft. Collins, Colorado. He retired from the USFWS 1997. During this 25-year period Paul did most of his research and writing on North American butterflies, which included the publication of three major books: *Butterflies East of the*

Great Plains: an Illustrated Natural History, Field Guide to Butterflies of Eastern North America, and Field Guide to Butterflies of Western North America. Virtually all his work was done in evenings and over weekends--after graduate school he was never employed to study Lepidoptera.



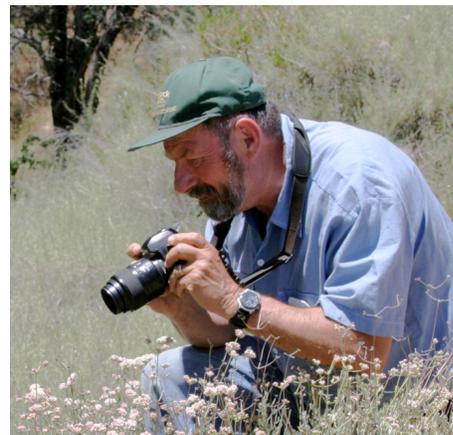
Since 1998 Paul has been a professor at Colorado State University where he has guided the research of four graduate students and the growth of the Lepidoptera collection to its present level of more than 2000 drawers. Paul played a key role the acquisition and subsequent cura-tion of several major western collections. In 2009, he and Jerry Powell published their landmark work on *Moths of Western North America*, an effort that had been in the making for the whole of their careers and draws on more than 100 years of collective studies of western Lepidoptera.

Paul's lifelong research interests include the systematics, distribution, and genetics of Lepidoptera, especially Anthocharinae (Pieridae), Lycaenidae, Erebidae (Arctiinae), and Notodontidae. He owes a great debt of gratitude to the late Doug Ferguson and, more recently, to Don Lafontaine for their patient mentoring in macrolepidopteran taxonomy. Beyond lepidopteran systematics, Opler maintains interests—and more importantly has published important papers—in the fields of tropical biology, invertebrate conservation, pollination ecology, and biogeography.

Paul has been active in numerous societies, serving as the president of the Lepidopterists' Society and the Association for Tropical Biology, vice-president of the North American Butterfly Association and Xerces Society, and section chair for the Entomological Society of America. As editor

of the *American Entomologist* he transformed the Society's newsletter into the full-color magazine that we know today. He long served as an editor for the Xerces Society/NABA's Fourth of July Butterfly counts, and currently is the founding and managing editor of the Gillette Museum Publications, which includes a series of atlases of North American Lepidoptera. For the past ten years he has served as a director of the Wedge Entomological Research Foundation (publisher of the series the Moths of North America). Paul has initiated several www sites, including the Butterfly and Moths of North America BAMONA and Children's Butterfly sites served by the U.S. Geological Survey. He and his wife Evi have organized and hosted three national meetings in Fort Collins (1993) and Sierra Vista (1999 and 2005), are assisting with planning the meeting at the Denver Museum in 2012, and Paul continues to serve on the Society's program and meeting committee.

Paul is an accomplished photographer and has taken many of the images in his books and other publications. Favorite pastimes include birding, tropical biology, genealogy, palaeoanthropology, and listening to music (especially modern



jazz). He has three children, Tim, Chris and Laura from his first marriage with Sandy, a stepson, Hans-Eric, and four grandchildren – Alvin, Emile, Gaston, and Oakley. In 1992 he met and, not long thereafter, married Evi Buckner. They enjoy planning and

taking trips together. Their junkets have included visits to China, Costa Rica, Galapagos Islands, Guyana, St. Lucia, and many countries in Europe. Paul and Evi's many trips to Mexico have included some level of collecting and photography, with much of [the latter] later done by Evi in recent years. Evenings out, dining and dancing, are a shared "hobby." Over the past fifteen years, they have led butterfly natural history and identification classes for the Rocky Mountain Nature Association, Teton Science School, and the Sierra Nevada summer field campus of San Francisco State University, usually as part of extended annual collecting trips. Most days Paul works both out of their home in Loveland, Colorado and in his office in Laurel Hall, adjacent to the C.P. Gillette Museum of Arthropod Diversity at Colorado State University. He welcomes visitors to the collection, and encourages all to include Fort Collins in their travel plans.

See also: www.paulopler.blogspot.com & www.colostate.edu/depts/bspm/people/faculty/%20indiv/Opler.html

Announcements:**Summer Class/Workshop on California Butterflies/Moths**

Registration for these workshops is through San Francisco State University and the location is the San Francisco State summer field campus near Bassetts on state highway 49 [see www.sfsu/~sierra]. Reservations and deposits for the class and workshop must be made with J.R. Blair of San Francisco State (jrblair@sfsu.edu).

Biol 315 -- Butterflies of the Sierra Nevada (1)
Introduction to the natural history and ecology of butterflies. Lectures and slide talks cover the fundamentals of butterfly biology. We travel (carpool) to a wide variety of local Sierra Nevada habitats to identify and observe adult butterflies and their behavior, their larvae, and their host plants.

Paul Opler & Evi Buckner July 8-13 \$348

Moths of California

An informal introduction for studying and observing moths. Emphasis will be on collecting and processing adult moths and recording observations based on the techniques described in our book, *Moths of Western North America*. The workshop is recommended for persons interested in moths or those studying insect/plant relationships, or managing biodiversity conservation.

Paul Opler & Jerry Powell July 13-15 \$250

Join the Membership Committee!

Lep Soc Members wishing to have their voice heard can talk/join with the Membership Committee by going to the following link, <http://tech.groups.yahoo.com/group/Lep-SocMembershipCommittee/>, clicking on the blue "Join This Group!" button, and following the instructions. This is for members in good standing, and for a mature discussion of issues. For the complete announcement, see News of the Lepidopterists' Society, Winter 2011 (53:4, pg. 113).

Dave Wikle, Membership Committee Chair, 2007-2012, wikleps2@earthlink.net

National Moth Week July 23-29, 2012
Exploring Nighttime Nature

The first annual National Moth Week will be held July 23 – 29, 2012. Visit the National Moth Week website at www.nationalmothweek.org for more information. The complete announcement can be seen in the News of the Lepidopterists' Society Fall 2011 issue (53:3, pg. 83).

David Moskowitz, Senior Vice President, EcolSciences, Inc., 75 Fleetwood Drive, Suite 250, Rockaway, NJ 07866 www.ecolsciences.com.

Joint Meeting of the Lepidopterists' Society and the Societas Europaea Lepidopterologica, July 23-29, 2012

The 2012 Lepidopterists' Society Annual Meeting (61st) held jointly with the Societas Europaea Lepidopterologica will take place July 23-29. The meeting will be held at the Denver Museum of Nature & Science (DMNS).

Registration for the meeting is now open. Early registration is \$115 for non-students and \$85 for students. The DMNS has created an easy to use registration system for the meeting that can be located at the following web address:

<http://www.dmns.org/lepidopterists-annual-meeting>

Accommodations are provided by the Red Lion Hotel and are reserved at a special rate of \$69/night. Transportation will be provided to and from the hotel both day and evening. Make hotel reservations on your own using the online registration link provided above. For the complete schedule, description of field trips, hard copy registration form, and call for papers, see the Winter 2011 News of the Lepidopterists' Society (53:4, pgs. 126 - 132).

Visit the Gillette Museum Lepidoptera Collection after the Lep Soc Meetings

Attendees at the Lep Soc meeting who wish to study the extensive Lepidoptera holdings at the Gillette Museum of Arthropods Diversity at Colorado State University, one hour drive north of Denver, may make advance arrangements to visit during the week of July 30-August 3 by contacting Paul Opler [paulopler@comcast.net] prior to mid-June (Dr. Opler may not be available after this time). This collection is large [2700 drawers] and is especially strong in butterfly and macromoth groups. Directions, and list of collection holdings by family, are available from Dr. Opler.

Significant donations have helped enlarge the size and coverage of the Lepidoptera collection including but not limited to those from the Bagdonas family on behalf of their father Karolis, Barbara Bartel, Norris Bloomfield, Don E. Bowman, Ken Davenport, John DeBenedicits, Scott Ellis, Cliff Ferris, Mike Fisher, Chuck Harp, Richard Holland, Robert L. Langston, Ranger Steve Mueller, John Nordin, Al Rubbert, James Scott, Ray and Kit Stanford, J. Bolling Sullivan and David Wikle. Many others have made smaller donations. We are grateful for all of this kindness!

Corrections to "Diana Still Reigns in Arkansas," Vol. 53:4, 116-123

I inadvertently used an incorrect e-mail address for Gary Noel Ross, and also omitted one reference. Gary's e-mail address should be: gnross40@yahoo.com and the omitted reference is: Wells, C.N., L. Spencer, and D. Simons. 2011. Reproductive behavior of *Speyeria diana* (Nymphalidae) in Arkansas. (Literature Cited). *Journal of the Lepidopterists' Society* 65(2):136.

More Announcements:**A Request for Help:****Contributions of Locality Data Needed for the Moth Photographers Group Website**

By early January there were at least some mapping data for just over 11,000 species of lepidoptera recorded from the U.S. on MPG. However, in many cases, the amount of available data is too small to present a realistic picture of the range of a species. Members of this society can help to improve the picture by contributing data from their collections, whether the collection is of spread specimens or of photographs.

In additions to distribution maps, information is presented in charts that indicate months in which adults are flying. In the example shown here a few «blank» months were excised to reduce the size of the chart.

Your records contributed to this project will also benefit mapping programs at Butterflies and Moths of North America and Butterflies of America. Data files sent to MPG will be passed on to those groups and will also be made available to compilers of databases for individual states or provinces. Maps, or links to maps, will also be made available to organizations such as Encyclopedia of Life, Wikipedia and others that disseminate species information on the Internet.

Most of the known large databases, including the one for this Society's Season Summaries, are already part of this project. But there are many individuals who have, or could compile, collection data that would significantly enhance these maps. There are probably also a large number of researchers and museum workers who have extensive data for specialized groups of species. We need all of it, and we especially need everything available for the micromoths.

Please send your data to Bob Patterson at **BPatter789@aol.com** where you can also get more information if you need it. If you would like to volunteer to extract data

State/Province	Feb	Mar	Apr	May	Jun	Sep	Oct	Nov
Connecticut					■			
Illinois		■						
Kentucky		■	■				■	■
Michigan						■		
New Brunswick			■	■	■			
New Jersey						■		
New York		■						
North Carolina			■				■	
Ohio	■	■	■	■	■		■	
Ontario			■	■		■		
Quebec		■	■	■			■	
Tennessee		■						
West Virginia				■			■	

Flight Time data for *Lithophane hemina*

from the literature (state publications, journal articles, monographs) I will appreciate hearing from you.

Distribution maps for all butterflies and moths now appear on species pages at Moth Photographers Group. The map and flight period chart that appear here are for *Lithophane hemina*.

Details about the mapping project and a list of early contributors of data are given at

<http://mothphotographersgroup.msstate.edu/AboutMaps.shtml>



Specimen dot map for *Lithophane hemina*
(truncated from entire U.S. map)

The 2012 Lepidoptera Course

The 2012 Lepidoptera Course will be held at the Southwestern Research Station in the Chirichahua Mountains in SE Arizona from 11-20 August. This setting is one of the areas of highest lepidopteran biodiversity in the US. The focus is to train serious amateurs, citizen-scientists, and academic professionals in lepidoptera identification, classification, and biology. The staff for the 2012 course includes Deane Bowers (U of CO), John Brown (USDA, Smithsonian), Jason Dombroskie (Cornell), Lee Dyer (U of NV), Paul Goldstein (Smithsonian), Jim Miller (AMNH), Ray Nagle (U of AZ), Chris Schmidt (CNC), David Wagner (U of CT), and Bruce Walsh (U of AZ). The course fee (which includes room and board) is \$1070 for students, \$1170 for non-students. Application deadline is 11 June 2012. Further details, with link to the application form, can be found at www.lepcourse.org. You can also see photos and comments from students of the 2011 course at their facebook site, "2011 Lep Course, SWRS SEAZ". For questions, contact Bruce Walsh, jbwalsh@u.arizona.edu.

Additional info at <http://research.amnh.org/swrs/education/lepidoptera-course>. See the back cover (page 32) for photos from the 2011 course (and the picture on the front cover).

Continued on p. 24

Notes on Unusual Behavior of the Uncommon Noctuid Moth *Psectraglaea carnosa*

Steve Johnson

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On 8 October, 2004 I set off from my home in Pennsylvania to do some fall collecting in the Pine Barrens of southern New Jersey. It is always a difficult call to make when you decide to make a trip of several hours to go collecting at this time of year. Good conditions could make for a fantastic night of baiting and lighting, or they could just as easily quickly descend into low temperatures that will drastically slow or shut down the action. Baiting is usually the savior on many fall expeditions since it works immediately at dusk and its optimum "hot" time is the first hour or so. If certain species do not respond to bait it adds another layer of uncertainty as to whether the temperature will or will not fall below the range these species fly at by the time they should be on the wing.

The evening started off in the mid to upper 50's but it was a clear sky and in the barrens that usually means the heat will be shooting back out into space quite rapidly. I had a good bait trail out that was producing the usual suspects like *Chaetagnela sericea*, *Sunira bicoloraga*, *Agrotis ipsilon* and *Metaxagnela semitaria*. I also had 2 MV light setups that were doing rather poorly, which is to be expected given the conditions. By around 10:00 PM the temperature was close to 50 and there was almost no action occurring at the lights and the bait had quit producing more than an hour earlier. I kept checking the sheets until midnight and almost no moths had accumulated since 10:00. By this time the gas was running low in the generators and I considered just turning them off and getting some sleep but since I had traveled this far and was here for the night anyway I decided to gas them up and catch a few winks and check them later. I stirred around 2:00 AM and was hit by a temperature of upper 40's. To my great surprise there were 12 *Psectraglaea carnosa* on the sheets.

The habit of certain species of moths waiting until late night to take wing is something most moth collectors are familiar with. *Paonias astylus* and *Hyparpax aurora* are two prime examples. If you pack up your gear before midnight you will almost certainly miss out on the prime activity of these two species. I have been on trips where 19 *Paonias astylus* were seen, but the first one was found after 11:30 PM. Likewise with *Hyparpax aurora* where 10 individuals were seen but none before 11:30 PM. What makes *Psectraglaea carnosa* even more unusual is that it seems hold off flying until late night even though the temperatures late at night in October will typically be in the 40's and 50's during that time. Since it does not come readily to bait its abundance could easily be underestimated unless lights or traps are run until the early morning hours in suitable habitats.

The final event which convinced me that my experience with this moth was not an anomalous event occurred on October 8th 2011. I met up with Sam Smith and Paul Dennehy to do some collecting in the Warren Grove area in Ocean County, New Jersey. We ran a long bait trail and each of us put up a mercury vapor setup. While putting out the bait trail Paul Dennehy found a *Psectraglaea carnosa* sitting on some low foliage so we knew the flight period had started and we looked forward to seeing more when the lights were turned on.

As usual none were found on the bait trail, but other nice moths were seen like *Lithophane patefacta*, *Lithophane thaxteri*, *Euxoa violaris* and *Chaetagnela tremula*. There were clear skies and as usual in the barrens it was down in the low 50's by 10:00 to 11:00 PM. Almost everything had stopped coming in to the lights by this time and I decided to nap for an hour. Around 12:30 I emerged to check the sheets and see if *Psectraglaea carnosa* was going to repeat the behavior I had noticed seven years earlier. The first ones were just arriving at my setup. They came in hopping and fluttering along the top of blueberries and other shrubs and seemed to show up on the sheet only after crawling up towards the light hanging near the top. My sheet was the slow one though. I was set up near a boggy area to try and draw moths from the unusual plants that grow in these herb bog areas in the barrens. Sam and Paul however were inundated with them. Whereas I saw 4 in about 30 minutes after I started checking, Sam had about 30 come in to his setup and trap and Paul had more than 40. It was about midnight before either of them began seeing any, so it seems quite obvious that this a regular feature of their behavior.

Psectraglaea carnosa is almost certainly a localized species and will not occur just anywhere in its range, but it does seem obvious now that it can reach a locally common status where it is present.



Psectraglaea carnosa (Noctuidae) (photo by Steve Johnson)

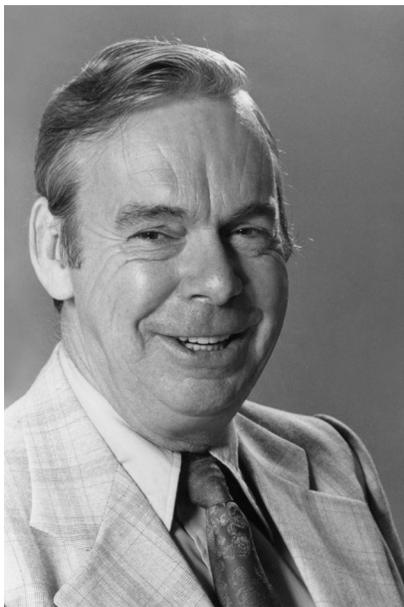
John C. Downey (1926-2005): A Remembrance

Jacqueline Y. Miller

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John C. Downey, a charter member of both the Lepidopterists' Society and the Lepidoptera Research Foundation, passed away on February 20, 2005 at the age of 79. He was active and served in various capacities within the Society, especially as Secretary, 1964-1972. A member of several other professional societies, John was also active in the Iowa, Illinois, and Southern California Academy of Sciences, Pacific Coast Entomological Society, Society for the Study of Evolution, and also a charter member of the Society of Systematic Zoology (now Systematic Biology) and original board member of the Xerces Society. He was also a member of the Entomological Society of America, especially active in the North Central Branch. In addition, he was a Research Associate of the Allyn Museum of Entomology, now part of the McGuire Center for the Lepidoptera and Biodiversity. He is survived by his wife, Norine, and five children, (John Jr., Michael, Dennis, Mary Ann and Patrick), and 12 grandchildren.

John was born on 12 April, 1926, at Eureka, Utah, one of three children of Molly and John Charles Downey. His father was a message runner and decorated WWI war hero, who passed away when John was six due to complications from mustard gas used in the trenches. Subsequently his mother went to work as a librarian to support the children. John was interested in nature as a youngster and completed his elementary and secondary education in Utah. He received his B. S. (1949) and an M. S. (1950) from the University of Utah. He went on to complete a Ph. D. in entomology (1957) at the University of California, Davis, analyzing the infraspecific variation and evolution in populations of *Plebejus icarioides* (Boisduval), with R. M. Bohart as his major advisor. In addition, Downey and H. W. Lange co-authored the seminal paper analyzing the variation in a recently extinct polymorphic lycaenid butterfly, *Glaucopsyche xerces* (Boisduval), with



notes on its biology and taxonomy (1956.) Robert M. Pyle stated (Boyd & Pyle, 2000) that this paper inspired him to later found the Xerces Society for the conservation of butterflies and other invertebrates and their habitats in 1971.

Dr. Downey began his academic teaching career at the University of Utah (1947-1952) and was an Associate in Zoology, University of California, Davis (1952-1956). He accepted a position as an Assistant Professor in the Department of Zoology, Southern Illinois University, Carbondale, Illinois, in 1956, where he rose through the ranks to full professor (1966), and served as Chairman of the Department (1967-1968). He then accepted a position with the University of Northern Iowa, Cedar Falls, Iowa, and served as a full Professor and Chairman of the Biology Department. John went on to serve as Dean of the Graduate School at Northern Iowa in 1981, until his retirement in 1988. He was an active faculty member and administrator not only supervising admissions, overseeing requirements, and appointing advisors, but also finding time to teach general biology, biology of insects, biological illustration, and a graduate seminar in biological communication at the University, along with field entomology at the University's Lakeside Laboratory. He also served on several national committees including as a reviewer and consultant for the National Academy of Sciences and an evaluator for their Summer Institutes Council. He was also a reviewer for the National Science Foundation in addition to several national and international societies and publications.

John's interest in butterflies began as a naturalist when he and another friend found a book on butterflies and attempted to learn the scientific names. They collected in the foothills around Salt Lake City and John met some of the forest park rangers. John began to help the rangers as a lookout for forest fires. Over the years, the rangers developed a mutual trust with John, and he would sleep in the lookout towers, watch for fires and collect in his spare time. He was already a park ranger in high school, and this job would have a profound effect on his future endeavors. According to the detailed account by Boyd and Pyle (2000), Vladimir Nabokov was collecting in the Wasatch National Forest Utah, when John drove up a road and offered him a lift. As a park ranger, John had a variety of tasks, one of which was hauling coal from the Salt Lake Valley to Alta, Utah, a popular ski resort. With a full load of coal, the old dump truck that John was driving was over heating and he had to make frequent stops. John got out of the truck and proceeded to ask the scantily clad Nabokov what he

was doing. Was he collecting insects? Nabokov did not reply and continued down the road intent on collecting. John yelled after him that he also collected insects, especially butterflies. Although John normally brought his collecting gear, he did not include it that day because of the load. A nymphalid flew across the road, and Nabokov asked him what it was. John, with no real professional training on the pronunciation of names from Holland's book, blurted out the name. The interrogation continued and following the identification of the third specimen, Nabokov introduced himself. John had passed the practical exam, and they agreed to meet the following day to collect. John met his wife and son at lunch at the Alta ski lodge. During their discussions, Nabokov mentioned that he was working on *Lycaeides*. Nabokov visited Salt Lake at least two more times teaching at writer's conferences. John was already going to the University, and they met on both occasions going into the field one more time. In a letter to Kurt Johnson in 1996, John mentioned that his encounter with Nabokov in Little Cottonwood Canyon had more than a little effect on his selecting the blues as a specialty. Nabokov subsequently sent him a stack of 3 x 4 cards with morphological sketches of the blues of interest. He also indicated to John that he was turning the project over to him as he was having some severe eye problems and would have to give up using the microscope. Eventually Nabokov's eyes recovered and he did go back to working on the blues. I found a copy of one of Nabokov's illustrations when going through John's files.

John Downey's research focused on ecological and behavioral aspects of Lepidoptera, including distribution, parasites, diapause, mimicry, and myrmecophily, especially in the Lycaenidae. His morphological studies on immature stages and adults were exceedingly detailed. However, he was the consummate entomologist publishing 70 papers in addition to seven books on subjects ranging from the Malpighia of the birds of the Midway Atoll, beetles, thrips, and of course, Lepidoptera. John was an excellent illustrator in the Department of Entomology during his graduate student days at Davis. With this talent, he later authored and co-authored three books on scientific illustration.

He was also interested in the morphology of the immature stages and adults. It was during the collaboration with Arthur Allyn at the Allyn Museum in Sarasota, Florida, that his expertise was tested. Allyn and he studied the UV-reflectance patterns and wing scale ultrastructure in the Lycaenidae (1976) and the Pieridae, especially *Phoebis* and closely related genera (1977). In order to describe various structures appropriately, Downey and Allyn (1975), published a paper on general wing-scale morphology and a lexicon of the appropriate morphological terms. They also studied and published on the comparative ultrastructure of eggs in Lycaenidae (1980, 1984) and Riodinidae (1980), and representatives of other butterfly families. Although the papers on comparative UV-reflectance brought to the fore other information on mate recognition and communi-

cation, one of their major contributions was butterfly ultrastructure as it relates to sound production in the pupae of the Lycaenidae and Riodinidae. They presented detailed analyses of pupal sound organs of 59 species and one subspecies that had not been previously known to stridulate, in addition to the 15 species previously published in 1973. They illustrated examples of the ultrastructure of stridulatory abdominal surfaces in addition to specialized organs and setae on the integument. This was soon followed by an analysis of sounds actually produced by the pupae (1978). John Downey's immature and adult collections along with his library were donated to the Allyn Museum in 1985 and are now part of the McGuire Center.

Despite his schedule with administrative duties and teaching over the years, John managed to chair graduate committees and mentor both students and amateur lepidopterists. He encouraged and challenged students, amateurs, and professionals to set higher research standards far beyond what they believed was their level of expertise and enabled them to contribute markedly to their particular area of study. Not all of them were devoted to Lepidoptera as the case with John Nelson at Southern Illinois. John Downey was his advisor on his M. S. studies on the biology and distribution of parasites and inquilines in *Polistes*, and was chair of his committee for most of his dissertation on the larval morphology of *Polistes* in the Nearctic Region. Some of Downey's interest in Lepidoptera must have transferred over to John Nelson as he became a member of the Lepidopterists' Society and an excellent lepidopterist. John's graduate students working on Lepidoptera at the Northern Iowa included Michael Christensen (annotated checklist of the butterflies of Iowa) and John T. Sorensen (the integumental morphology of adult *Glaucopsyche*). Another student, Kurt Johnson, completed a M.A. on the butterflies of Nebraska in 1970. At this time, Kurt was undecided about his future goals but eventually went on to complete a Ph. D. at City College of New York and was associated with the American Museum of Natural History until 1998. Although Kurt Johnson was noted for his scientific studies on the taxonomy, evolution, and ecology of the Lycaenidae, it is for his more popular book (1999) co-authored with journalist, Steven Coates, on the scientific career of Russian-American novelist and lepidopterist, Vladimir Nabokov, that has brought him more notoriety. With this interest in Nabokov's evolutionary theories and studies on the origin of Blues in the New World, Kurt Johnson coauthored a paper (2011) on the molecular phylogenetics, biogeography and the evolutionary history of Blues in North and South America, which proved that Nabokov's original hypotheses were correct. John also mentored another of the coauthors on the Nabokov paper, Naomi Pierce. She was interested in myrmecophily and came to visit John at the Allyn Museum to discuss some of his findings concerning lycaenid butterflies and attendant ants, including their behavior and role in warding off predators and potential parasites. She was interested in the oviposition behavior of *Jalmenus evagoras* (Donovan)

among other lycaenids in relation to their selection of host-plant preference and associated ants. Based on his overall view of Lycaenidae, John was able to provide further insight on this species and his observations on other taxa. The above is a brief glimpse of the hundreds of students with whom John Downey interacted and encouraged.

Officers of the Lepidopterists' Society are and were volunteers driven by a passion for the study of Lepidoptera. This was particularly true of John during his tenure as Secretary of the Society. Although the President plays the leadership role, all of the other officers contribute to keeping everything on track throughout the year. Unlike today, when we rely heavily on email and cell phones and

summer in Sarasota. The lunch breaks were brown bag with Steve Steinhauer, Dale and Joanne Jenkins, students from New College, and whoever else was working at the Museum that day. There was a lot of camaraderie with jokes and stories and the usual play on words. When an exceptional or extraordinary word not often used in everyday conversation was used, John would pipe up, "That's a \$.50 word." On clear days, there was a dart board hung on one of the live oaks in the parking lot of the Museum, and we took a little time to practice our acuity. The students took this in stride and were rather surprised at the fact that working with faculty and staff interested in butterflies and moths could really be fun.



Officers at the 21st Lepidopterists' Society Annual Meeting, June 19-21, 1970. From left to right, Stan Nicolay (Treasurer), Lloyd M. Martin (1st Vice-President) J. Bill Tilden (Vice-President) and John Downey (Secretary).

John Downey's humor extended into the field. Jerry Powell recalled and shared an incident at the second annual meeting of the Pacific Slope Section meeting at San Diego Natural History Museum in September, 1955. There had been late summer rains in the desert that led to a truly memorable group field trip. During this trip there was discussion which helped to establish the fledgling group and style of our annual meetings. Jerry was an undergraduate student then and a bit naïve. It was the first time that he had been introduced to a cooler full of beer on a field trip (in Fred Thorne's car). The group carpooled out to the desert and met at a place called Box Canyon for lunch. Someone had collected *Pseudocopaodes eunus* (W. H. Edwards), a species rarely seen there. This prompted Bill Tilden to take the sand stage and demonstrate in great detail the

conduct business in a matter of minutes, everything was completed via the typewriter and by phone without any recorded messages. The correspondence between John and Roy Kendall, who then served as Treasurer (1966-1968) was truly remarkable. There was the order of business, usually involving addresses of new and current members, meeting arrangements, slate of officers, etc. However, Roy often included new life history information on species that he and his wife, Connie, had reared or new records from Texas. There was a constant exchange of information, especially concerning the Lycaenidae and their associated life histories including parasites.

John had an exceedingly dry wit and was an excellent punster. During his initial collaborations with Arthur Allyn and following teaching the field entomology course at Northern Iowa, John and his family would spend the

exact netting technique required to collect that particular bug. As Jerry related, "this was complete with Tilden tangential, planning the angle of the sun, etc." At the final thwap, the rapt audience was spell bound and silent for about a second, and John said "personally, I prefer the two-step figure eight." Jerry stated further, "Maybe my young mind was exceptionally open to irreverence then, but everybody simultaneously laughed Bill off the stage."

In his latter years, John had Parkinson's disease, bore his infirmity with dignity and always remained cheerful. In reviewing the Miller files in combination with those of A. C. Allyn and John, I am taken by the comments that are written in letters, not only made on John's wit and sense of humor, but the fact that he will be remembered as role model and a gentleman in every sense of the word. He had the ability to mix socially and professionally with people of

different backgrounds. He was an incurable optimist even under dire circumstances, and this, blended with a kindly sense of humor, gained him new friends at every turn and new members for the Society. He could also be a very direct yet courteous negotiator, which kept him in good stead in carrying out his administrative duties. John Downey's legacy is not only his wonderful family, the scientific and educational papers and books that he published, but the lives of people that he touched during his all too brief life.

I would like to acknowledge and sincerely thank Norine and Patrick Downey for providing additional personal information on John's earlier years. I appreciate the review comments by Drs. Deborah L. Matthews and Andrew D. Warren. I regret the delay in finishing this recognition of John Downey's service and contributions to the Society.

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More Announcements:

Continued from p. 19

Lepidoptera Research Foundation

The Foundation, publishers of the Journal of Research on the Lepidoptera (JRL), just mailed volume 44, its annual hard copy of papers for 2011. During the past year, the editorship of the JRL was assumed by Prof. Konrad Fiedler, Department of Animal Diversity, University of Vienna. He is supported by an editorial board of 16 notable academics. The JRL is available on our website without charge to anyone. If you desire to receive papers as they are published, submit your email address and they will be automatically sent to you. The annual hard copy is sent to subscribers.

For those of you unfamiliar with the JRL, please see the editorials for Vol. 44, which are on line. The JRL is in process of listing by most services and now only await inclusion by ISI Web of Science to be completely notable for academic purposes. The editorials provide information on how we operate. Note we have no page charges and although we operate on our endowment, any support is deeply appreciated. We are all aware that the present world is not financially friendly.

At our last board meeting it was unanimously decided that the Foundation, which is dedicated to support scholastic research and public education, would provide travel grants to support students in attending relevant scientific meetings. We provided research grants in the past, but these yielded mixed results. The idea of providing travel expenses to expand collegial associations and permit lecture or poster presentations by productive individuals seems more fruitful. With the current state of our finances, the Foundation is offering four \$1000 grants for this purpose for the 2012 academic year. Please apply to Rudi Mattoni if you could benefit and further information will be forthcoming. The application is quite simple, we are not bureaucratic.

Communication:

General: www.lepidopteraresearchfoundation.org/

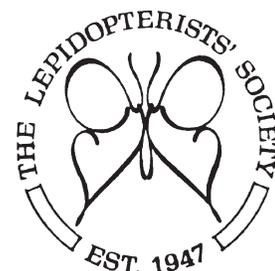
Editor: konrad.fiedler@univie.ac.at

Request emailing JRL: Nancy Raquel Vannucci

jrl_lepidoptera@yahoo.com

Grants: rudi.mattoni@gmail.com

www.lepsoc.org



Membership Update...

Julian Donahue

INCLUDES ALL CHANGES RECEIVED by 29 Feb. 2012

New and Reinstated Members: members who have joined/renewed/been found/or rescinded their request to be omitted since publication of the 2010 Membership Directory (not included in the 2008 Membership Directory; all in U.S.A. unless noted otherwise):

Alberico L., Francisco: Zaragoza no. 69-7, Cuajimalpa, Mexico City, Mexico, 05500, Mexico.

Bequette, Caroline: 633 Hidden Acres Drive, Madison, TN 37115-5626.

Carey, Finnegan: 256 NE Solida Drive, Port Saint Lucie, FL 34983-8440.

Dennehy, Paul: 13 Kaseville Road, Danville, PA 17821-9143.

Escoffier, Jim: 1615 Saturn Street, Merritt Island, FL 32954-3156.

Guhl, Alfred H.: 1712 East Blacklidge Drive, Tucson, AZ 85719-2770.

Holmes, Dennis: 4365 Glen Vista Court, Redding, CA 96002-3777.

Hutchings, Roger W.: Caixa Postal 2345, Agencia Andre Araujo, Manaus, Amazonas 69061-970, Brazil.

Jones, Tony G. (Mr.): 817 Fox Hunter Drive, Farmington, UT 84025-2618.

Krassur, Elliot Scoville (Ph.D.): 206 Hidden Valley Circle, Shepherdstown, WV 25443-3510.

Lynch, J. Merrill (Mr.): P.O. Box 58, Trade, TN 37691-0058.

Macaulay, Douglas: 141 Athabasca Drive, Devon, Alberta T9G 1N5, Canada.

McEwen, William J.: 424 Wall Street, P.O. Box 1804, Eagle, CO 81631-1804.

Mendenhall, John: 2118 East 33rd Street, Apt. 3, Minneapolis, MN 55407-2479.

Ormes, Margaret: Biology Department (NatureServe), University of Massachusetts/Boston, 100 Morrissey Blvd., Boston, MA 02125-3300.

Pan, Aaron D. (Ph.D.): Don Harrington Discovery Center, 1200 Streit Drive, Amarillo, TX 79106-1759.

Perez, Leonel: 10664 Poplar Street, Loma Linda, CA 92354-2333.

Primmer, Ernest C. (DDS): 4225 Glass Road, Cedar Rapids, IA 52402-2547.

Robles, Montana: 1726 Calle Cerro, Santa Barbara, CA 93101-4909.

Saito, Motoki (Mr.): #102, 5-17-18, Hon-cho, Koganei, Tokyo 184-0004, Japan.

Seymoure, Brett: 414 East Taylor Street, Tempe, AZ 85281-1137.

Silver, Nancy: P.O. Box 1209, Helena, MT 59624-1209.

Sisson, Melissa S. (Ms.): 1900 Avenue I, Suite 300, Huntsville, TX 77340.

Smytheman, Peter: 3045 1 Canyon Road, Wenatchee, WA 98801-2426.

Snopek-Barta, Allison: 10936 East Oak Point Road NW, Cass Lake, MN 56633-2046.

Watkins, Reed A.: 11510 Rokeby Avenue, Kensington, MD 20895-1049.

Zittrauer, Timothy: 400 Jefferson Avenue, Oldsmar, FL 34677-3643.

Address Changes (all U.S.A. unless noted otherwise):

Bryson, Charles T.: 100 Pear Lane, Starkville, MS 39759-4368.

Daniels, Emily Vanessa: 2921 Verano Place, Irvine, CA 92617-3133.

De Swarte, David H.: 102 East Broadway Street, Mount Carroll, IL 61053-1351.

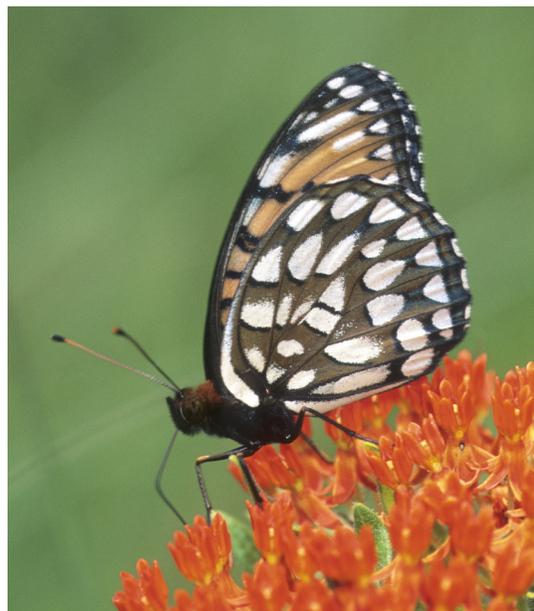
Dombroskie, Jason J. (Ph.D.): Department of Entomology, Comstock Hall, Cornell University, Ithaca, NY 14853-2601.

Forbes, Gregory S. (Ph.D.): 1009 Luna Street, Las Cruces, NM 88001-4106.

Grinter, Chris: 6364 Old Oak Road, Libertyville, IL 60048-9446.

Kemner, John: 7316A Colina Vista Loop, Austin, TX 78750-8533.

Proshek, Benjamin: 200 Grand Avenue, Apt. 225, Des Moines, IA 50409-1753.



Regal Fritillary, *Speyeria idalia*, on *Asclepias tuberosa*, near Welda Preserve, Anderson County, Kansas, 15 June 2009; photo by Bryan Reynolds, Butterflies of the World Foundation website,

www.botwf.org

The Marketplace

IMPORTANT NOTICE TO ADVERTISERS: If the number following your advertisement is "533" then you must renew your advertisement before the next issue! Remember that all revisions are required in writing.

Books/Electronic Images

All of the colored plates for Seitz Macrolepidoptera of the World: Volumes 1 through 16 plus the four supplements, *Biologia Centrali-Americana: Lepidoptera* Godman & Salvin and *The Butterflies of the West Coast* (Wright). All of the plates contain the name of each species illustrated. Each plate is a JPEG Bitmap Image (JPG) file. The Nomenclature is outdated by 80+ years. However, the plates can still be used to identify specimens and the name can be located by various search engines on the internet. I also have all 350 Plates of the Coleoptera.

- All Seitz on a 20 GB Memory Stick\$125.00
- All *Biologia Centrali-Americana Lepidoptera* on a 2 GB Memory Stick.....\$55.00
- All *Biologia Centrali-Americana Coleoptera* on a 4 GB Memory Stick.....\$105.00
- All of the above on a 20GB Memory Stick.....\$275.00
- Wrights Butterflies of the West Coast on a 4 GB Memory Stick.....\$55.00

PayPal, Checks, International Money Orders and Master Card and Visa accepted. Contact: Leroy C. Koehn, Leptraps, Email: Leptraps@aol.com, Tel: 502-541-7091 534

For Sale: High quality critically acclaimed book, *The Butterflies of Venezuela, Part 2* (Part 1 also in stock). 1451 photographic figures (84 colour plates) display all 196 species (355 subspecies) of Venezuelan Acraeinae,

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. 531, 532) 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.** Some leeway may be allowed at the editor's discretion. 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.

Ithomiinae, Libytheinae, Morphinae, and Nymphalinae. 8 new species, 91 new subspecies, 4 neotypes, 10 lectotypes. Laminated hardback, 22 x 30 cm. 272 text pages, 26 detailed genitalic figures, 2 tables, 4 maps. Price GBP £110 (+ p&p). Details, reviews, sample plates: www.thebutterfliesofvenezuela.com Please contact the author/publisher, Andrew Neild: 8 Old Park Ridings, London N21 2EU, United Kingdom; tel: +44 (0)20 8882 8324; email: andrew.neild@blueyonder.co.uk 541

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. For more information visit www.leptraps.com, or contact Leroy C. Koehn, Leptraps LLC, 3000 Fairway Court, Georgetown, KY 40324-9454: Tel: 502-542-7091 534

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. 250 & 500 Watt self ballast mercury vapor with mogul base mounts. Light weight and ideal for trips out of the country. For more information, visit www.leptraps.com, or contact Leroy C. Koehn, Leptraps LLC, 3000 Fairway Court, Georgetown, KY 40324-9454: Tel: 502-542-7091 534

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.

The Marketplace

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 warp or crack. Bait container is held in place by a retainer. For more information, visit www.leptraps.com, or contact Leroy C. Koehn, Leptraps LLC, 3000 Fairway Court, Georgetown, KY 40324-9454; Tel: 502-542-7091 534

Livestock

For Sale: Captive bred Philippine butterfly pupae, year round. Contact Imogene Rillo, P. O. Box 2226, Manila, 1099 PHILIPPINES, email: clasinse@gmail.com 541

Metamorphosis...

Julian Donahue

Two Charter Members

Two of the Society's 220 Charter Members recently passed away. On 16 August 2010 **David Bauer** of South Lake Tahoe, California slipped away at the age of 88. In 2009, David was awarded the John Adams Comstock Award by

the Pacific Slope section of the Society for his numerous and varied contributions to western lepidopterology. David published several taxonomic papers describing several subspecies, species, and even one genus (*Poladryas*). He was a recognized authority on Melitaeini, and as such was asked to author the sections on checker-spots for both William



Howe's *Butterflies of North America* and Ehrlich and Ehrlich's *How to Know the Butterflies*. Over the course of his life, David assembled an important collection of more than 40,000 butterflies and moths. While most were from the vicinity of his self-constructed home in South Lake Tahoe, his holdings included butterflies from around the world that David had collected as an invited motivational speaker on what it meant to be a Seventh-day Adventist. His collection was purchased by and transferred to the McGuire Center in 2008.

Butterfly Photography Tour

Butterfly Photography Tour to Eastern Tibet: This exciting new tour led by Andrew Neild & Vadim Tshikolovets is tailored exclusively for butterfly photographers and watchers. Departs May 20th 2012, return 9th June. Nearly full! For details please visit: <http://www.thebutterfliesofvenezuela.com/butterflytours.html> 533

Specimens

Needed: Any A1 papered butterflies and moths, worldwide species, large and small, to help rebuild my collection that suffered a loss awhile back. Common and rare are all welcome. Any donations will be noted and very much appreciated. Mail to: Fred Bower, 288 Willow Street, Apt. 53, Lockport, New York 14094. 534

Ed Voss passed away peacefully at home on 13 February, 2012, a few days before his 83rd birthday. Ed suffered a

hemorrhagic stroke in December, and declined thereafter. Ed remained active up until his final days, writing, identifying, and curating plants in the University of Michigan herbarium. He was a botanist by training -- arguably the most influential and prolific of his generation in the Midwest. His three-volume opus on the Michigan flora has long stood as the gold standard for floras of the



Great Lakes Region and will remain an authoritative treatment of the region's plant taxonomy, ecology, biogeography, and many matters of conservation. Just days before his passing, Ed was able to see publication of his new condensation and update of the Michigan Flora (<http://www.press.umich.edu/titleDetailDesc.do?id=345399>) (co-authored with Anton A. Renicek). Like his friend and fellow botanist Herb Wagner, Ed had a life-long love of butterflies. Ed's particular passion was for the butterfly fauna of northern Michigan, and especially it's skippers.

Biographical sketches for David Bauer and Ed Voss recently appeared in the News last year (Volume 53, Number 1) in an article commemorating the Society's last eight surviving Charter Members (contributed by Dave Wagner).

Rudolf Lampe of Nuernberg, Germany, in mid-June 2011. Mr. Lampe, whose interest was primarily in the Saturniidae, had been a member of the Society since 1984.

A Pitcher for a *Pieris*

Arthur M. Shapiro

Center for Population Biology, UC Davis, Davis, CA 95616 amshapiro@ucdavis.edu

A poster on the UC Davis campus:

BUTTERFLY-BEER CONTEST TIME!

For the 40th straight year, Professor Arthur M. Shapiro of the Department of Evolution & Ecology, U.C. Davis, is looking for the first Cabbage White Butterfly (*Pieris rapae*) of the year.

The person who gets the first Cabbage White of 2011 wins a pitcher of beer (your brand) or the equivalent in cash if a minor or non-drinker. The rules:

1. The butterfly must be an adult captured outdoors in Sacramento, Yolo or Solano County on or after January 1, 2011.
2. It must be turned in ALIVE to the receptionist in the Dept. of Evolution & Ecology, 2320 Storer Hall, UCD during business hours (8-5 M-F). The receptionist will certify that it is alive and notify Professor Shapiro, who will confirm the identification.
3. It must be accompanied by a PRECISE LOCALITY and TIME OF COLLECTION (e.g., vacant lot, corner of Beeshfong and Utrecht Streets, Vacaville, CA, 7:44 AM, Jan. 2, 2011) and the collector's name and contact information (preferably e-mail; telephone OK—be sure to include area code).
4. Only the species *Pieris rapae* is acceptable. Check online photographs to familiarize yourself with the bug. A good picture of the late-winter form is at (http://www.wildutah.us/b_pieris_rapae_41006_12.jpg).
5. Prof. Shapiro is the sole and final authority in determining the winner.

WHY DO I DO THIS? I am doing long-term studies of butterfly life cycles and climate. Such studies are especially important to help us understand biological responses to climate change. The Cabbage White is now emerging a week or so earlier on average than it did 30 years ago here. I am in the field over 200 days a year, but by enlisting the public I have that much more confidence that I am tracking the actual seasonality of this common "bug." Thanks for your interest!

A propos Astrid Caldas' piece on Leps and climate change (NEWS, Fall 2011): Apart from our long-term monitoring project (<http://butterfly.ucdavis.edu>), I have promoted a novel form of "citizen science" in support of butterfly phenology for nearly 40 years. *Pieris rapae* is perhaps the most ubiquitous butterfly in lowland California. It was one of the species selected for monitoring in the abortive IBP Phenology Program back in the 1960s because of its wide distribution and abundance. In the Sacramento Valley its flight season averages a bit more than 44 weeks/year,

and occasionally the autumn brood slops over into early January before the actual new year brood begins; we can recognize that when it happens. I decided back in the early 70s to offer a prize -- a pitcher of beer -- for the first *P. rapae* of the calendar year collected wild in Yolo, Solano or Sacramento County, California. The beer is an incentive to get people out looking; if I were to lose often I would know I was doing a lousy job of monitoring. (Of course I know where nearly all the warmest microclimates are, so I have an advantage -- but I do sometimes lose.) I send out a press release via the UC Davis News Service and other channels, put up posters on campus and send them out via various listserves. I had to modify the rules to specify that the beast be collected *outdoors* after three cases in which the winner emerged in a kitchen, having presumably come in as a full-grown larva on a cruciferous vegetable and managed to pupate inconspicuously somewhere. (The contest was kept open, and those dates were not considered the first-flight date for statistical analysis vis-a-vis climate. One of the indoor ones was collected by a woman in her 90s in midtown Sacramento!) Most years the contest is covered by regional print and broadcast media. I've been beaten twice in the outdoors and "tied" once (the other bug was collected 20 minutes later than mine, and I unilaterally declared it a tie!). The other winners were my own graduate students-- Adam Porter and Sherri Graves, and so was the tie, Rich VanBuskirk. We do get submissions from the general public, but none has ever won. Fortunately, they keep trying! We occasionally get an earlier sight record, but because there are several species of white butterflies in this region, both pierines and white female *Colias*, these aren't counted. Typically I treat my entire lab to beer at a local pub when the contest ends, no matter who wins.

Predicting the first flight date is extremely tricky. Around here *P. rapae* normally overwinters as a pupa, but it may be in diapause *or not*. Diapause (developmental arrest) is under hormonal control and is irreversibly determined during larval development by an interaction of photoperiod (they monitor night length, not daylength) and temperature. If nights are warm, it takes a longer night to induce diapause than if they're chilly. Some years we find larvae still feeding into January. These, oddly, usually give non-diapausing pupae. Diapausing pupae normally require a certain sum of accumulated chilling degree-days before resuming development, but if they don't get it they eventually resume development anyway. (They apparently have some kind of innate clock mechanism that enables them to do this. If they didn't, they might remain in diapause until they burned up all their food reserves, and die. This is what happens to diapausing *Papilio zelicaon* pupae if they are not refrigerated.) Post-

diapause and non-diapause development are temperature-dependent. We can often predict the first possible date for adult emergence based on climatological records, but that estimate is nearly always too early. It may be much too early if the late winter is cloudy and cold.

Over the years the contest has generated some funny moments. On one occasion in January I had just returned from Buenos Aires and immediately came down with chickenpox (which I had never had as a kid). To avoid infecting anyone else, I only came in to the lab at night. The word was out that I was ill. But *rapae* weather came along and, being careful to avoid contact with anyone, I went out, caught one, came home and put it in the refrigerator. Later in the day an Entomology grad student showed up at my door grinning and holding one up. Through the closed door, I asked him when he caught it. Then I went and got mine, which had the time written on the envelope, and held it up. (I'd beaten him by a couple of hours.)

Another time I came in on New Year's Day and found about 20 *rapae* in miscellaneous jars piled in the hall outside my lab door, each bearing the name of one of my colleagues and claiming the prize. (At the time there was a research colony of *rapae* in the Department. All the specimens were full summer phenotypes, reared on long days and at warm temperatures. Phenotype is also under photoperiod/T control.)



From the Editor's Desk

James K. Adams

As I complete my third issue as editor, I am intrigued by the fact that, as I have learned to handle the InDesign software, the process of assembling the newsletter has become somewhat obsessive. I find myself thinking "I can make this article 'fit' better if I move a table or chop it into two parts, if I resize this picture a bit and move it to a particular position," and so on. Indeed, I had this newsletter largely assembled almost a month ahead of the deadline because it is, well, kinda' fun. I realize that what I'm saying is old news to anyone who has ever assembled a newsletter for any length of time, but I'm still a bit surprised, especially after the turmoil of my first issue.

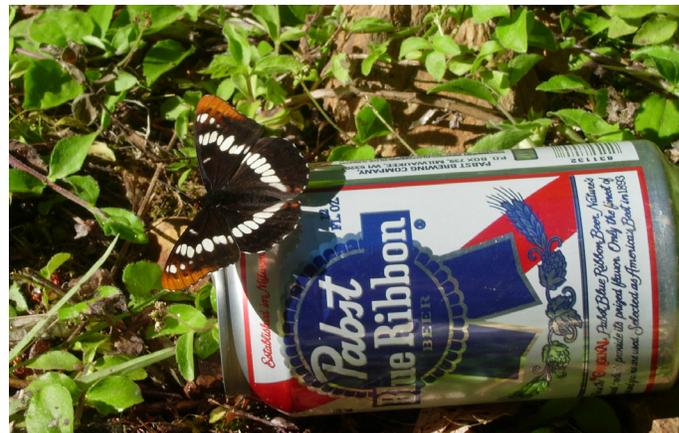
With the quick turnaround time with this issue, I am now essentially caught up time-wise, and we can return to a regular submission schedule for the remaining issues for this year (see page 30). I have always been aware that the society's membership has a diverse array of knowledge and experiences, but the articles that I have received have impressed me with the breadth and depth of knowledge. I've

And almost every year someone brings one in in April, May, or even June--two or three generations later--and asks "Did I win?"

P. rapae is now emerging -- on average -- more than a week earlier here than it did in the 1970s.

PS. I won again this year -- January 8, one of the earliest dates ever.

Just for fun, here's an UNPOSED picture (taken by Ellie Billings of Nature in the City, San Francisco) that proves the natural affinity of butterflies and beer.



also been impressed with the drive and desire of the membership to get stuff in print. Keep it coming. I know that the field season is soon to be here, but don't get lost in your specimens and/or pictures to the point where you forget about contributions to the News.

Here in north Georgia, the weather has been very warm this winter. Indeed, compared to last winter with one of the longest continuous cold spells that I can remember since moving to Georgia over two decades ago, this winter has been largely, well, without winter. We've had a lot of upper 50's and 60's for the highs, and it has been very wet. We've seen very early emergences of several species of moths: the beautiful green *Feralia major* on Dec. 30 (second earliest ever), *Psaphida grandis* on Jan. 30 (second Jan. record) and the unusual geometrid *Ceratomyx satanaria* on Feb. 3, a full month ahead of the normal emergence time. Spring Azures emerged the second full week of Feb., a Zebra Swallowtail on Feb. 20, and a Falcate Orange Tip by Feb. 23. I'm very eager to get going on this field season myself. I just hope there is no late season cold snap!



Ceratomyx satanaria
(Geometridae) (© James Adams)

Membership

The Lepidopterists' Society is open to membership from anyone interested in any aspect of lepidopterology. The only criterion for membership is that you appreciate butterflies or moths! To become a member, please send full dues for the current year, together with your current mailing address and a note about your particular areas of interest in Lepidoptera, to:

Kelly Richers
Assistant Treasurer,
The Lepidopterists' Society
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Dues Rate

Active (regular)	\$ 45.00
Affiliate (same address)	10.00
Student	20.00
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Institutional Subscription	60.00
Air Mail Postage, News	15.00

Students must send proof of enrollment. Please add \$ 5.00 to your Student or Active dues if you live outside of the U.S. to cover additional mailing costs. Remittances must be in U.S. dollars, payable to "The Lepidopterists' Society". All members receive the **Journal** and the **News** (each published quarterly). Supplements included in the News are the Membership Directory, published in even-numbered years, and the Season Summary, published annually. Additional information on membership and other aspects of the Society can be obtained from the Secretary (see address inside back cover).

Change of Address?

Please send permanent changes of address, telephone numbers, areas of interest, or e-mail addresses to:

Julian P. Donahue, Assistant Secretary, The Lepidopterists' Society, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA 90007-4057.
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Our Mailing List?

Contact Julian Donahue for information on mailing list rental.

Missed or Defective Issue?

Requests for missed or defective issues should be directed to: Ron Leuschner (1900 John Street, Manhattan Beach, CA 90266-2608, (310) 545-9415, *ron_leusch@aol.com*). Please be certain that you've really missed an issue by waiting for a subsequent issue to arrive.

Memoirs

Requests for Memoirs of the Society should be sent to Publications Manager, Ken Bliss (address opposite).

Submissions of potential new Memoirs should be sent to:

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Journal of the Lepidopterists' Society

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Book Reviews

Send book reviews or new book releases for the **Journal** to:

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Submission Guidelines for the News

Submissions are always welcome! Preference is given to articles written for a non-technical but knowledgeable audience, illustrated and succinct (under 1,000 words, but will take larger). 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 thumb drive 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. The new InDesign software can handle most common wordprocessing software and numerous photo/graphics software. Media will be returned on request.
3. Color and B+W graphics should be good quality photos 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.
4. Typed copy, double-spaced suitable for scanning and 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 54 must reach the Editor by the following dates:

	Issue	Date Due
54	2 Summer	May 20, 2012
	3 Fall	Aug. 15, 2012
	4 Winter	Nov. 15, 2012

Reports for Supplement S1, the Season Summary, must reach the respective Zone Coordinator (see most recent Season Summary for your Zone) by Dec. 31. See inside back cover (facing page) for Zone Coordinator information.

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The 2011 Lep Course at the Southwestern Research Station near Portal, Arizona

(photos by Hugh McGuinness unless otherwise indicated; see p. 19 for more info on the 2012 course)



The participants (photo © Jocelyn Gill)



The Southwestern Research Station. (photo © B. Zacharczenko)



Lab work. (photo © B. Zacharczenko)



Paramiana perissa (Noctuidae)



Psectrotarsia suavis (Noctuidae)



Xylophanes falco (Sphingidae)



Larva of *Sphingicampa hubbardi* (Saturniidae)