

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:

Automeris patagoniensis larva (Saturniidae, Hemileucinae), from ova from Jim Mouw, Harshaw Cr., Patagonia Mts, Santa Cruz Co. Arizona. Reared on unidentified ornamental bunch grass (Photo by Michael Collins).

Lepidopterists' Society Executive Council petition to U.S. F&W Service on proposed listing of five species of blues in the Spring Mountains, Nevada

Public Comments Processing
Attn: FWS-R8-ES-2012-0069
Division of Policy and Directives Management
U.S. Fish and Wildlife Service
4401 N. Fairfax Dr.
MS 2042-PDM
Arlington, VA 22203

To Whom It May Concern,

The Executive Council of The Lepidopterists' Society would like to provide comments on the "Proposed Listing of the Mount Charleston Blue Butterfly as Endangered and Proposed Listing of Five Blue Butterflies as Threatened Due to Similarity of Appearance," Docket number FWS-R8-ES-2012-0069. We have concerns about various aspects of the proposed rule, especially the co-listing of additional species due to similarity of appearance (SOA).

The Lepidopterists' Society is an international organization dedicated to promoting the science of Lepidopterology (study of butterflies and moths) and conservation of Lepidoptera through encouraging collaboration between professionals and amateur Lepidopterists, from recreational collectors to watchers and photographers. Some prominent members of The Lepidopterists' Society include Robert Michael Pyle (Author and Founder of The Xerces Society), Paul Ehrlich (preeminent population biologist and conservationist), Daniel Janzen (renowned conservation biologist), Dale Schweitzer and Paul Opler (both of whom coordinate Nature Serve evaluations for North American Lepidoptera).

During the late 1940s, the founders of our Society realized that the world's natural history collections, including collections of butterflies and moths, have largely been assembled by amateurs, and that increased collaboration between amateurs and professionals was needed to foster the further growth of our science. In fact, such collections have served as the baseline for all information on the distribution and abundance of Lepidoptera species, and enable systematic research on these organisms.

In the case of the Spring Mountains of Nevada, the seminal paper providing baseline data for the butterflies of the range, upon which all subsequent studies were derived, is that by Austin & Austin (1981). This paper was the result of several decades of amateur collecting efforts (by A. Austin), complemented by rigorous collecting efforts by G. Austin during the 1970's. The Mt. Charleston Blue was first recognized and described as a result of these same efforts (Austin 1980). Additional decades of collecting and rearing studies on the blue butterflies of the Spring Mountains led to the descriptions of new subspecies of blues in 1998, including *Euphilotes ancilla purpura* (Austin 1998) and *Plebejus icarioides austinorum* (Emmel et al. 1998), as well as the recently described *Euphilotes ancilla cryptica* (Austin et al. 2008). Given the recent descriptions of these taxa, there is undoubtedly much we have yet to learn about the blue butterflies of the Spring Mountains.

With respect to the proposed rule to list one species of blue butterfly as endangered, and five additional species as threatened in the Spring Mountains of Nevada, please consider the following:

Plebejus shasta charlestonensis (Mt. Charleston Blue). Based on details in the proposed rule, and information provided by Boyd (2008, 2012), the greatest threats to this taxon are related to forest management practices; specifically, this blue may be threatened by habitat loss and degradation due to fire suppression and succession, implementation of recreation development projects and fuels reduction projects, and the spread of nonnative plants, in addition to the presence of feral horses in the butterfly habitats. There appears to be no actual evidence that collecting of adult butterflies is a threat to the existence of this butterfly in the Spring Mountains. To prohibit the taking of the candidate species by collectors, without the concomitant designation of critical habitat, and while continuing to allow Forest Service "takes" of the candidate species pursuant to the practices outlined above, is detrimental to both science and the candidate species, and therefore, is arbitrary and capricious under those cases interpreting the Endangered Species Act.

Plebejus lupini texanus. This butterfly (sensu Goodpasture, the taxon's author) is extremely widely distributed, from south-central Alberta, Canada, south to Oaxaca, Mexico, and from Nevada to Oklahoma and Texas. However, it is unclear how many taxa may currently be represented by the name "*texanus*," as patterns of foodplant use over the range of the taxon suggest the possibility of more

than one species involved in the complex. Additional data on this butterfly in the Spring Mountains is badly needed to clarify the taxonomic status of the entity currently recognized as "*texanus*".

Echinargus isola. This blue is extremely widely distributed in western North America, and is known to be an annual immigrant in many northern localities. Further collection records are needed in Nevada, including the Spring Mountains, to determine the distribution of permanent vs. temporary populations.

Plebejus icarioides austinatorum. Being recently described, this butterfly remains poorly represented in museum collections. The relationships between the 25 described subspecies of *Plebejus icarioides* remain virtually unstudied, and additional studies of *P. i. austinatorum* are badly needed to corroborate its taxonomic status and define its overall distribution.

Euphilotes ancilla purpura and *Euphilotes ancilla cryptica*. Members of the genus *Euphilotes* remain very poorly known and the taxonomy of the genus is still being developed and refined. As shown by Austin et al. (2008), relationships between the two subspecies of *E. ancilla* in the Spring Mountains remain somewhat uncertain, and the relationship between these taxa and other subspecies of *Euphilotes ancilla* has never been investigated in detail. Most likely, decades of additional study of *Euphilotes* in the Spring Mountains (and elsewhere) will be needed to develop a firm understanding of the relationships between *Euphilotes* taxa and needs for their conservation. In addition, as shown by Austin et al. (2008), neither *Euphilotes ancilla* subspecies in the Spring Mountains occurs in the habitats where the Mt. Charleston Blue occurs, so the proposed listing of these *Euphilotes* as threatened per the SOA provision is clearly arbitrary.

In summary, we oppose the listing of the five additional taxa under the SOA provision, as we believe additional collecting and rearing studies of these butterflies, by amateurs and professionals alike, are necessary to increase our knowledge about their biology and taxonomic status. This applies to the current proposed rule (FWS-R8-ES-2012-0069), and the unfortunate recent listing of three blue butterflies as threatened in southern Florida per the SOA provision (see FWS-R4-ES-2011-0043). As we noted above regarding the butterflies of the Spring Mountains, and generally applicable across all taxa in every habitat, it is the hard work of amateur and professional collectors that enables us to define and determine what butterflies and other organisms are endangered. This hard work is far from over, especially in western mountain ranges like the Spring Range, and the USFWS should do everything it can to encourage continued responsible collections of our flora and fauna by professionals and amateurs alike, if it is truly interested in increasing our knowledge of the natural world and ways to protect it. The proposed listings of SOA taxa undermine these efforts and are clearly counterproductive. The Endangered Species Act will fail in its objectives if it fails to support the efforts of amateurs and professionals to better understand our natural heritage. That would be a calamity the natural world can ill afford.

Respectfully Submitted,

Executive Council of The Lepidopterists' Society

Signed by EC Members Andrew Warren (Pres.), Curtis Callahan (Vice Pres.), Adam Cotton (Vice Pres.), Daniel Janzen (Vice Pres.), Mike Toliver (Sec.), John Shuey (Immediate Past Pres.), Harry Pavulaan, John Calhoun, Robert Dirig and by additional Lep Soc members Julian Donahue (Asst. Sec. and Asst. Treas.), Charles V. Covell, Jr. (Past Pres.), Jacqueline Y. Miller (Past Pres.), Paul A. Opler (Past Pres.), Todd Stout (Chair, 2014 Meeting Com.), Thomas C. Emmel, Alex Grkovich, James E. Hayden, Akito Y. Kawahara, Deborah Matthews-Lott, Andrei Sourakov, and Jonathan Pelham

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Visual keys to differentiating Spring Mountain Blues (Lycaenidae: Polyommatainae)

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Abstract. – Analysis of wing patterns of the 5 species of blues from the Spring Mountains, Nevada shows that they can be readily told apart both by ventral and dorsal surfaces using many characters. The required fieldmarks are equally clear in live individuals. Here, I present a summary of wing pattern differences that were found most useful in telling the taxa apart with the goal to assist the public in distinguishing these interesting species of diminutive butterflies.

Some may find all species of blues to be confusingly similar. Most North American Blues are diminutive and are typically characterized by dorsal blue color, frequently mixed with brown, especially in females, which could be just brown. Orange spots and bands are present in many species. Ventrally, blues are light-grayish with a plethora of dark spots, streaks and lunules, and usually with orange marginal spotting. One might be bewildered by the taxonomic diversity of western US Blues (Scott 1986, Brock & Kaufman 2003, Pelham 2008, Warren *et al.* 2012) and meet some difficulties with their proper and unambiguous identification. However, on a more careful look, it would be arbitrary and capricious to claim that no simple fieldmarks, apparent to anyone, exist for the 5 species of Spring Mountains Blues discussed below. Definitive fieldmarks have also been reported for Blues from other locations (Calhoun *et al.* 2002, Calhoun 2011). On the basis of extensive specimen holdings in the collections of McGuire Center for Lepidoptera and Biodiversity, Gainesville FL (MGCL), National Museum of Natural History, Smithsonian Institution, Washington DC (USNM) and Texas A & M University, College Station TX (TAMU) and of many photographs of live individuals by a number of wildlife photographers and enthusiasts, I describe and illustrate a number of clear and simple characters that would allow a person without any specialized background to tell these species apart.

The Mt. Charleston Shasta Blue *Icaricia shasta charlestonensis* (Austin, 1980) is a subspecies with a very small distribution range recorded from a handful of high elevation sites in the Spring Mountains, Nevada located approximately 25mi west of Las Vegas in Clark County (Austin 1980, Austin & Austin 1981, Scott 1986). The type locality is Lee Canyon at 8250-8800m elevation. Primary threats to this local butterfly include feral horses (the greatest immediate threat), invasive plants and inadequate land management practices and habitat degradation, for instance poorly planned implementation of the fuel reduction, renovation and expansion of campgrounds, road contaminants and faulty habitat restoration projects (Boyd

2008, 2012). As one of the first steps to better conservation practices, it is essential to properly identify this species when it is encountered. To define characters useful for field identification of the Shasta Blue, it was compared with other blues from the Spring Mountains. Out of close to 20 described taxa of Blues recorded from the Spring Mountains, 4 were selected for more detailed analysis: Reakirt's blue *Echinargus isola* (Reakirt, [1867]), Spring Mountains Icaroides Blue *Icaricia icarioides austinorum* J. Emmel, T. Emmel & Mattoon, 1998, Lupine Blue *Icaricia lupini texanus* (Goodpasture, 1973), and Ancilla Dark Blue *Euphilotes ancilla* (W. Barnes & McDunnough, 1918). The last species is not known to occur near *I. shasta* colonies (Bruce M. Boyd, unpublished) and thus is not likely to be sympatric with it. *Eu. ancilla* is represented by several subspecies in the Spring Mountains, two of which are *Eu. a. cryptica* Austin & Boyd, 2008 and *Eu. a. purpura* Austin, 1998.

Recent phylogenetic study of the *Polyommatus* section of Blues based on 9 gene regions (3 mitochondrial and 6 nuclear) encompassing 6666 nucleotides in total suggests that Shasta Blue should be attributed to the genus *Icaricia* Nabokov, 1944, together with *I. icarioides* and *I. lupini* among others (Talavera *et al.* 2012). The taxonomic treatment of Talavera *et al.* is adopted here. Alternatively, these three species can be included in a wider-defined genus *Plebejus* Kluk, 1780, where they have been historically placed (Pelham 2008). However, in order to avoid a paraphyletic genus, this broad *Plebejus* would subsume most of the genera considered by Talavera *et al.* (2012), including *Polyommatus* Latreille, 1804. *E. isola*, instead of being assigned to a monotypic genus might be treated under *Hemiargus* Hübner, 1818, which would also include *Cyclargus* Nabokov, 1945 (Robbins 2011).

Since Blues typically hold their wings closed exposing ventral side, special attention was paid to the analysis of the venter. The Mt. Charleston Shasta Blue *I. shasta charlestonensis* (Figs. 5, 6) is characterized by brownish rather than black spots, rectangular rather than round or elliptical spots in the postmedian row on both wings; a prominent dark-brown spot near the ventral forewing (vFW) costa in R_2 - R_3 cell; thick marginal spots on vFW with a notable dark area by the apex in R_5 - M_1 cell; typically well-defined and broad areas of white scales between the postmedian and submarginal rows of spots on ventral hindwing (vHW), with submarginal row spots (=brown "caps" of orange borders of marginal metallic spots) being well-developed and almost connected to each other at the

veins, thus forming a scalloped band rather than individual spots; metallic marginal scales on vHW very prominent, arranged as silver-blue shiny circles or ovals around black centers in most cells, and basally capped by very narrow orange. Examination of live individuals of Shasta Blue (Fig. 23) reveals that the characters listed above are clearly visible on perching and feeding butterflies.

Consistently with Boyd & Austin (1999) it is found that the Lupine Blue *I. lupini texanus* (Figs. 7, 8, 24) is most similar to Shasta Blue in that it possesses metallic marginal spots on vHW basally capped with orange spots. However, it can be readily told apart by the following characters: spots black rather than dark-brown; these spots are oval and circular rather than rectangular in the postmedian row; a black spot near costa on vFW in cell R_2 - R_3 is mostly lacking, or tiny, dot-like; marginal vFW spots are thin and area by the apex (R_5 - M_1 cell) is concolorous with the background, rather than being prominently darker; areas between vHW postmedian and submarginal rows of black spots are gray, without expressed white patches; black caps of the orange vHW band narrow, not connected at veins, and the orange spots are very broad, not significantly narrower than wide.

The third congener, the Spring Mountains Icaroides Blue *I. icarioides austinatorum* (Figs. 3, 4) lacks vHW metallic marginal spots and orange caps (Scott 1986, Brock & Kaufman 2003). In addition, postmedian spots are black and oval, triangular or heart-shaped on vFW and are mostly gray and small, circular, and enclosed in wide white circles on vHW; R_2 - R_3 cell spot near costa is lacking or small; marginal vFW spots are mostly obscure and apical vFW area colored as the background; vHW areas between postmedian and submarginal spot rows are gray without white patches, submarginal spots ("caps") are thin and separated from each other. These characters are readily observed in live individuals of Icaroides Blue (Fig. 22).

Reakirt's blue *E. isola* (Figs. 3, 4, 21) is easily told apart by the well-developed back spot near vHW tornus in cell CuA_1 - CuA_2 , frequently with metallic scales; black marginal spots are absent between this spot and the apex, dark caps and orange spots are absent as well. vHW dark spots are

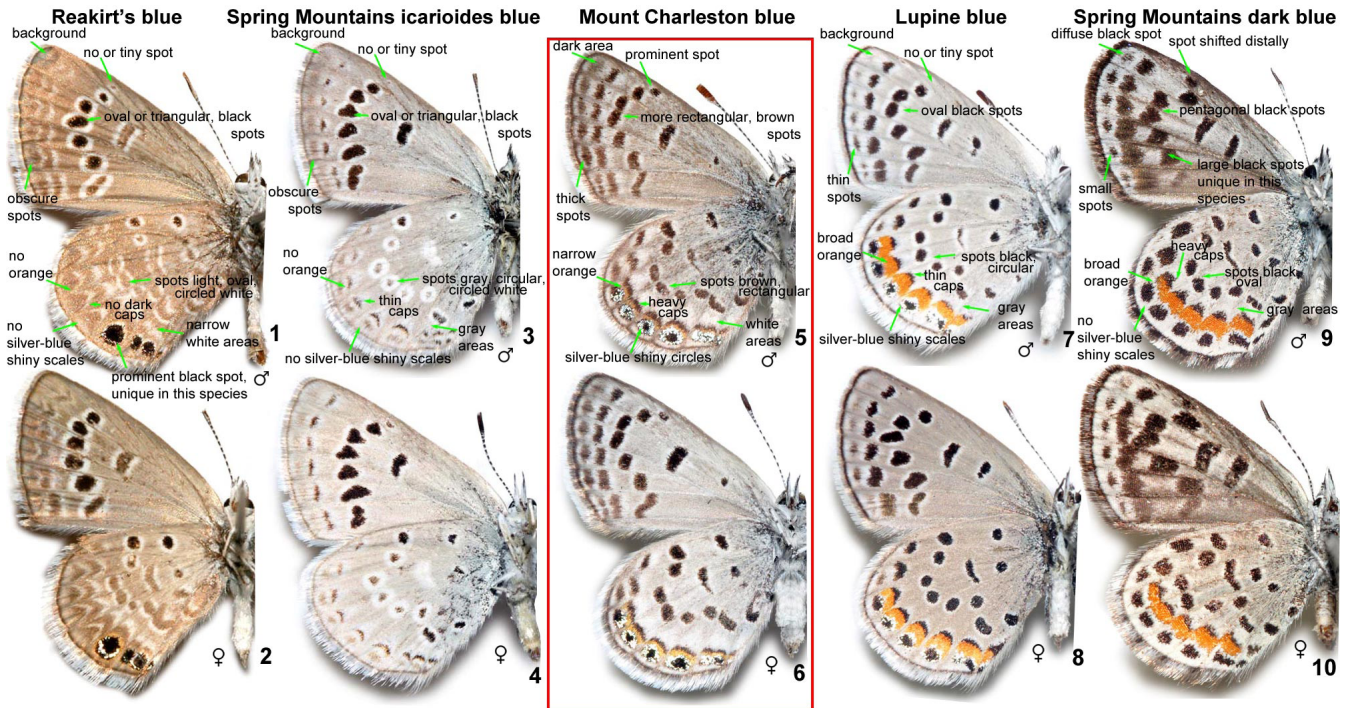
mostly light-brown, except two black spots near costa, tornal spots and sometimes spots at the base. vFW pattern is somewhat similar to *I. icarioides*, but submarginal spots and end-of-cell spot are light brown, not black.

The Ancilla Dark Blue *Eu. ancilla* (Figs. 9, 10) is unique in its darker ventral aspect, particularly on the vFW, with larger spots, except that marginal row of vFW spots are usually smaller than those of *I. shasta*. The apical spot is mostly present as in *I. shasta*. *Eu. ancilla* lacks metallic vHW spots; orange vHW band is well-developed, mostly continuous, only weakly separated into spots, with prominent black caps basally; the vFW spot near costa in cell R_2 - R_3 is prominent, but is shifted distally, not basally as in *I. shasta*. The darker aspect of vFW is equally clear in live individuals (Fig. 25).

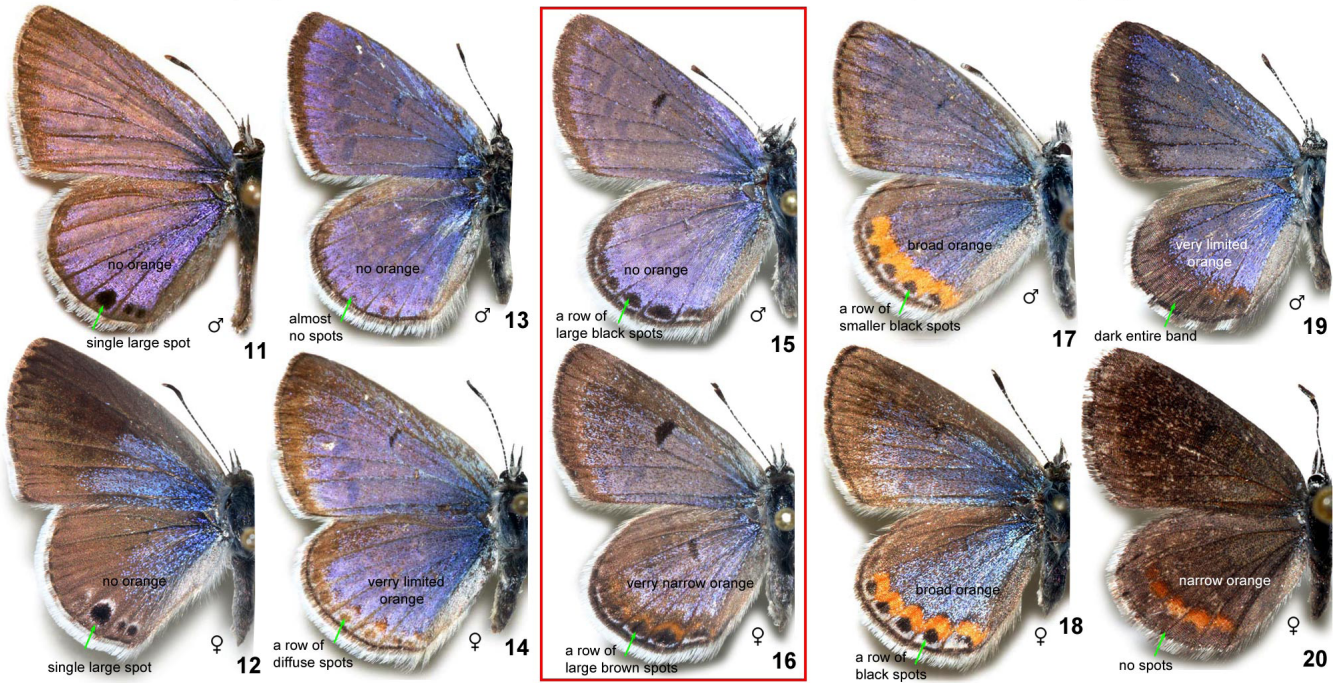
Although the dorsal side is less accessible for observation in the field, basking individuals expose dorsal fieldmarks, which are consistent and offer definitive determination to species level (Figs. 11-20). Black marginal spots and extent of orange submarginal spots and bands on the hindwing are diagnostic. *I. shasta* is characterized by a row of large black spots along the dorsal hindwing (dHW) margin, no orange on dHW in males and narrow orange lunules in females (Figs. 15, 16). *I. lupini texanus* possesses a row of typically smaller black marginal spots on dHW, broadly bordered with a wide orange band (Figs. 17, 18). *I. icarioides austinatorum* males virtually lack the marginal dHW spots and orange (Fig. 13), but females exhibit diffuse and small spots bordered with limited orange (Fig. 14). *E. isola* is identified by a single large marginal dHW black spot near tornus in cell CuA_1 - CuA_2 and a doublet of smaller tornal spots with no orange (Figs. 11, 12). *Eu. ancilla* does not have defined individual marginal dHW spots, but has a dark band instead, sometimes concolorous with the background in brown females, very limited orange in males and mostly a narrow orange band in females (Figs. 19, 20).

It is important to note that due to individual variation each particular character may fail or may not be clearly expressed in all individuals, thus identification should rely on a combination of characters, and each of the characters

Figs. 1-10. Ventral wing surface. Figs. 11-20. Dorsal wing surface. Figs. 21-25. Live individuals. All photos unless otherwise noted are by Kim Davis, Mike Stangeland, and Andrew D. Warren. **1, 11.** *Echinargus isola* ♂ MEXICO: SONORA, Ruta 16, 8.5 miles West of Yecora, 28-IX-1991, photo by Jim P. Brock; **2.** *E. isola* ♀ USA: ARIZONA, Santa Cruz Co., Sycamore Canyon near Ruby, 3-IX-1976, photo by Jim P. Brock; **12.** *E. isola* ♀ USA: TEXAS, Comal Co., New Braunfels, Landa Park ex egg ex ♀ 29-IX-1986, ova on *Amorpha*, reared on *Pisum*, emerged 28-X-1986 [MGCL]; **3, 13.** *Icaricia icarioides austinatorum* HOLOTYPE ♂ USA: NEVADA, Clark Co., Spring Range, Kyle Canyon Ski Area, 27-VI-1984 [MGCL]; **4, 14.** *I. i. austinatorum* ALLOTYPE ♀ USA: NEVADA, Clark Co., Spring Range, Kyle Canyon Ski Run, 5-VII-1977 [MGCL]; **5, 15.** *Icaricia shasta charlestonensis* ♂ USA: NEVADA, Clark Co., Spring Mts., Lee Canyon Ski Area, 08-VII-1987 [MGCL]; **6, 16.** *I. s. charlestonensis* ♀ USA: NEVADA, Clark Co., Spring Mts., Lee Canyon Ski Area, 08-VII-1987 [MGCL]; **7, 17.** *Icaricia lupini texanus* ♂ USA: COLORADO, El Paso Co., 5700', 31-VII-1975 [MGCL]; **8, 18.** *I. l. texanus* ♀ MEXICO: MEXICO, Atizapan, VII-1964 [MGCL]; **9, 19.** *Euphilotes ancilla purpura* Austin, 1998 PARATYPE ♂ USA: NEVADA, Clark Co., Spring Mts., Willow Creek, 28-V-1986 [MGCL]; **10, 20.** *Eu. a. purpura* PARATYPE ♀ USA: NEVADA, Clark Co., Spring Range, Cold Creek, 20-VII-1978 [MGCL]; **21.** *E. isola* ♂ USA: ARIZONA, Cochise Co., Garden Canyon, Huachuaca Mts., 09-IX-2005, mirror image (=left-right inverted); **22.** *I. icarioides fulla* (W. H. Edwards, 1870) USA: NEVADA, White Pine Co., Schell Creek Range, East Creek 5-VII-2011 mirror image (=left-right inverted), photo by Ken Kertell; **23.** *I. shasta pallidissima* Austin, 1998 ♂ USA: NEVADA, White Pine Co., Snake Range, Great Basin National Park, Stella Lake, 3-VIII-2011, photo by Ken Kertell; **24.** *I. lupini texanus* ♀ USA: ARIZONA, Apache Co., US 191, Mile 113, 26-VI-2009, mirror image (=left-right inverted), photo by Ken Kertell; **25.** *Eu. ancilla shieldsi* Austin, 1998 TOPOTYPE ♂ USA: NEVADA, Esmeralda Co., White Mts., Trail Creek Canyon, 28-VI-2005, photo by Bill Bouton.



Echinargus isola Reakirt's blue 1 *I. icarioides austinorum* Spring Mountains icarioides blue 2 *I. shasta charlestonensis* Mount Charleston blue 3 *Icaricia lupini texanus* Lupine blue 4 *Euphilotes ancilla* Spring Mountains dark blue 5



Echinargus isola 11 *I. icarioides austinorum* 12 *I. shasta charlestonensis* 13 *Icaricia lupini texanus* 14 *Euphilotes ancilla* 15



Echinargus isola 21 *Icaricia icarioides* 22 *Icaricia shasta* 23 *Icaricia lupini texanus* 24 *Euphilotes ancilla* 25

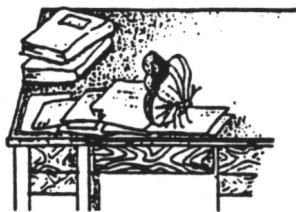
discussed above should be checked. Despite the first impression of the Blues being similar to each other, the combination of all these characters offers a reliable and straightforward way to tell the five species of Spring Mountains Blues apart.

Acknowledgements

I am grateful to Robert K. Robbins, John M. Burns and Brian Harris (National Museum of Natural History, Smithsonian Institution, Washington DC) and Edward G. Riley (Texas A & M University insect collection, College Station TX), for granting access to the collections under their care and stimulating discussions. I am indebted to Kim Davis, Mike Stangeland, Andrew D. Warren, Jim P. Brock, Ken Kertell & Bill Bouton for the photographs of specimens, in particular from the MGCL collection, and live individuals used to illustrate this study. Thanks to John V. Calhoun, John A. Shuey and Stan Gorodenski for helpful comments and suggestions.

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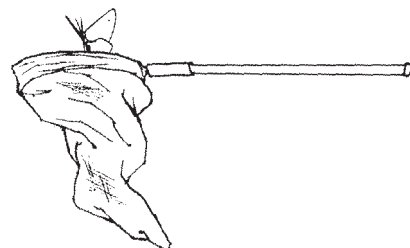
From the Editor's Desk

James K. Adams

This issue of the news emphasizes the contributions of the amateurs (and understand this is intended with no disrespect) to the science of Lepidoptera. The first couple of entries in this issue deal with the possible listing of five species of blues from the Spring Mountains, NV as endangered/threatened by the U.S. Fish and Wildlife Service. Much of the information on which the petition and first article are based come from contributions made by the amateurs and are acknowledged as such.. Other entries in this issue discuss the Lepidoptera fauna of an Iowa fen, rearing notes from southeastern Arizona, rare occurrences of southerly butterflies in Minnesota, and the temporary establishment of a colony of Dainty Sulphurs in Pennsylvania. Indeed, I have noticed and heard through the grapevine that this has been a tremendous year for

movement of butterflies (and potentially moths) northward. Dainty Sulphurs (*Nathalis iole*) and Little Yellows (*Pyrisitia lisa*) were seen in numbers here in Georgia, and recorded into Minnesota (see the article on page 150) and Pennsylvania (see article on page 124). We had a huge flight of Tailed Skippers (*Urbanus proteus*) into north Georgia this fall, and much farther north, apparently. I heard that it was collected in Maine (!) for a state record. Expect to see some very good records of southern strays in this year's Season Summary.

Speaking of the Season Summary, make sure to get your records together quickly and into your Zone Coordinators (see the announcement on page 128). If you are reading this and haven't assembled your records yet, there is not a lot of time to do so as the deadline is January 15th.



The diurnal Lepidopteran assemblage of a small, isolated fen in southeast Iowa

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Despite being hydrologically and geologically different, wetlands are capable of supporting many species of prairie butterfly due to the similarity of their plant communities (Schennum 1990). Fens are a unique type of peat-forming wetland found throughout the glaciated Midwestern United States (Amon et al. 2002; Diggelen et al. 2009). Fens are characterized by an organic soil (peat), a plant community dominated by grasses, sedges, and forbs and a hydrology resulting from groundwater discharge that keeps the soil surface constantly saturated (Thompson et al. 1992; Amon et al. 2002). The particular hydro-geomorphic features required to create a fen also cause them to be naturally isolated ecosystems with unique, diverse plant communities (Amon et al. 2002; Bedford and Godwin 2003) that can persist even when surrounded by disturbed environments (Brinson 1993; Klijn and Witte 1999).

Plant species have been suggested as a practical indicator of insect species richness in Midwestern tallgrass prairie remnants (Panzer and Schwartz 1998) and Lepidopteran species richness in particular is positively correlated with plant species diversity (Steffan-Dewenter and Tschardt 2000; Fleishman et al. 2005; Schooler et al. 2009). When presented with differences in habitat quality it is anticipated that individuals will exercise some level of habitat selection (Wiens 1976). Since some species of butterfly exhibit dispersal traits accustomed to naturally isolated environments (Gilbert and Singer 1975), it is possible that small, isolated diverse stable plant communities, such as fens, may play an important role in Lepidopteran diversity. Based on this assumption the diurnal Lepidopteran assemblage of a small, isolated remnant fen in southeastern Iowa was inventoried.

METHODS

The site for this survey was a small (0.3 hectare), privately owned fen in Muscatine County, Iowa (Fig. 1). Lepidoptera sampling was completed using the checklist survey method as described by Royer et al. (1998); the purpose of which is to record the species present regardless of other parameters and with few procedural constraints in order to efficiently develop a site-specific species list. Procedural constraints that were utilized were similar to those used by Selser and Schramm (1990) and Summerville and Crist (2001). Diurnal surveys were conducted during afternoon hours (approximately 1:00 p.m. to 3:00 p.m. Central Daylight Time) at two-week intervals from the second week of April until the second week of September, 2010. Surveys were

completed on warm days ($26.5^{\circ} \pm 5.2^{\circ} \text{C}$) with little to no cloud cover ($10.6\% \pm 18.3\%$).

Only those species that were observed actively utilizing the habitat (e.g., perching, basking, nectaring, etc.) were counted. Species flying over the fen and those that were only observed on the periphery were not included. Surveys were confined to the fen and consisted of a two-member team methodically searching for both juvenile and adult Lepidoptera for one hour. When possible, specimens were identified in the field, and specimens that could not be immediately identified were photographed in situ using a Canon EOS Rebel T1i 15.1 Megapixel Digital SLR Camera with a Canon EF 100mm f/2.8 USM Macro Lens. Specimens were netted only when necessary to confirm a species identity and then released.

RESULTS

A total of 14 surveys were completed during which 48 species of Lepidoptera were observed (Tab. 1). Of the 48, there were 25 species of butterfly (52.1%) and 23 species of moth (47.9%). The species present were representative of 13 different families, 5 of which (41.7%) were Rhopaloceran (butterfly) and the remaining 7 (58.3%) were Heteroceran (moth). The number observed from each family ranged from 1 to 10 with an average of $3.7 (\pm 2.4 \text{ SD})$ species. Species from Rhopaloceran families were more abundant with a range of 2 to 10 and a mean of $5.0 (\pm 3.2 \text{ SD})$ species per family, while Heteroceran families had between 1 and 5 species with a mean of $2.9 (\pm 1.4 \text{ SD})$.

DISCUSSION

Several species could be accidental visitors whose presence was the result of the proximity of the fen to preferred habitats or host plants. For example, solitary oak leafminers have high densities on the lowest branches of the oak trees (*Quercus* spp.) on which they feed (Brown et al. 1997). Due south of the fen are four large white oaks (*Quercus alba*). These oaks, which lie approximately 5 m from the edge of the fen, could be the reason for this species presence. Other examples would include eastern tiger swallowtail, which is common along forest edges, and silver-spotted skipper, banded hairstreak, red admiral, and question mark which are all considered woodland species in Iowa (Schlicht et al. 2007). Several other species may have been present simply because of their broad habitat tolerance. For example, fiery skipper, summer azure, and eastern tailed-blue have all

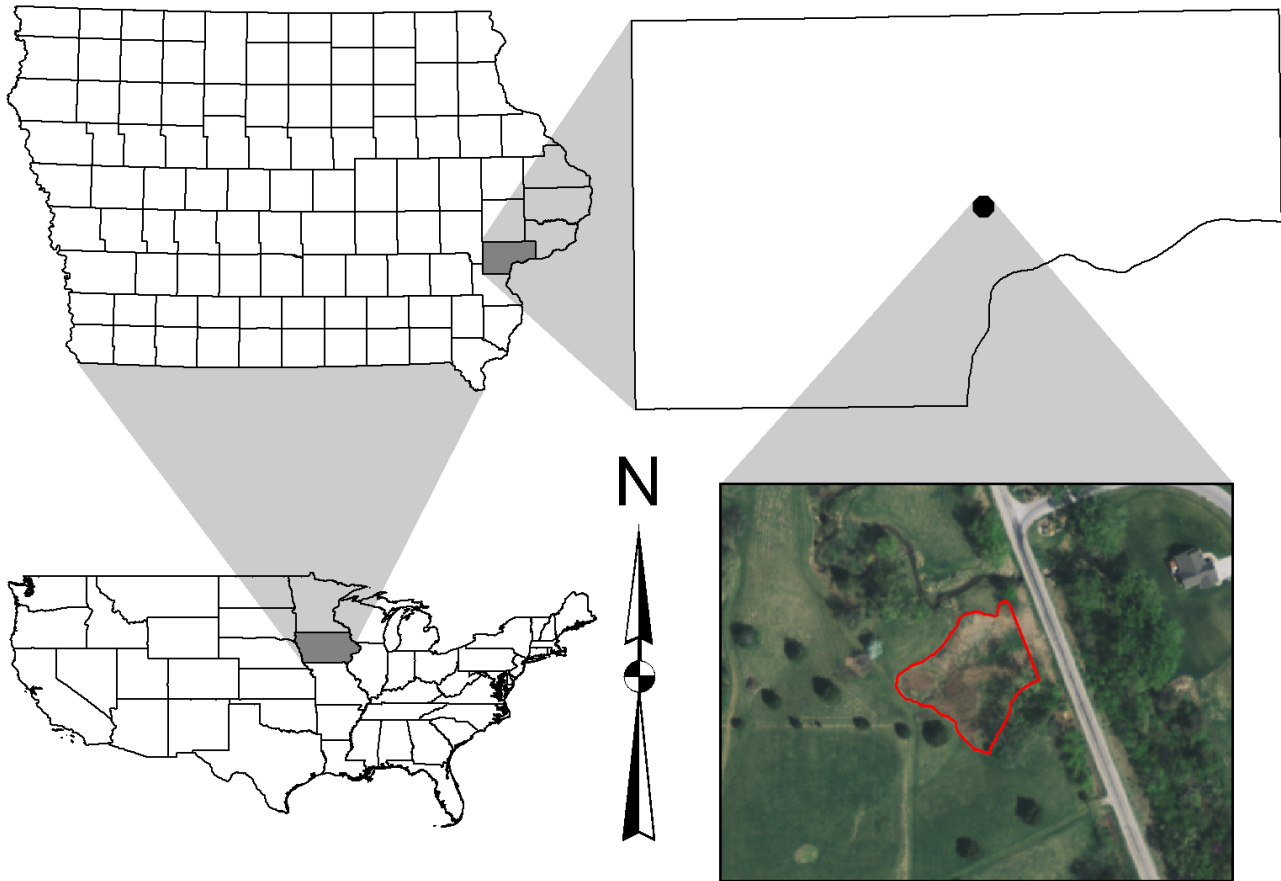


Figure 1. Location (county, state, and national level) and aerial photograph of the fen; the survey was confined to the area outlined in red (fen boundary) on the aerial photograph.

been found in multiple habitats around the state (Schlicht et al. 2007).

Other woodland and generalist species, such as little wood-satyr (*Megisto cymela*) and red-spotted purple (*Limenitis arthemis*), were observed on multiple occasions on the property and within a few meters of the edge of the fen, yet were never found utilizing the fen itself. Such segregation calls into question whether the previously mentioned species were truly accidental and random or whether the fen was meeting some habitat requirement. Nocturnal insect assemblages differ significantly between upland sites and wetlands sites (Garono and Kooser 2001) and the Lepidoptera have been noted as being especially adequate for use as sensitive indicators of habitat condition (Panzer et al. 1995). Without more detailed data there cannot be any certainty why these species were present in the fen; however it may be presumptive to dismiss their presence as entirely random.

The similar level of species richness for moths and butterflies was most likely a coincidence since the diversity of one group is not an accurate indicator of the diversity of the other (Ricketts et al. 2002). In addition, diurnal sampling has been suggested as a possible bias when studying moths (Tooker et al. 2002) so moths are

probably underrepresented in our data due to the sampling technique utilized (i.e., diurnal surveys).

Three of the butterfly species observed, least skipper, meadow fritillary, and black dash, are known to regularly utilize fens as habitat, while a fourth, the regal fritillary, is repeatedly observed in small numbers on fens in the state (Schlicht et al. 2007); this species is also a Species of Special Concern (Iowa Administrative Code, Chapter 77, Section 77.2(3)) and is rarely found in eastern Iowa (Schlicht et al. 2007). Four additional species of butterfly, Delaware skipper, common wood-nymph, gray copper, and great spangled fritillary (Davis et al. 2007; Vogel et al. 2007) and two species of moth, ironweed root moth and *Phaneta radiatana* (Summerville et al. 2006) are also known to frequent remnant prairies within the state.

Our results are similar to Selser and Schramm (1990), who found 22 species of butterflies in remnant prairie sites ranging in size from 0.3 to 1.2 hectares in west central Illinois. We propose that despite its small size and isolation, this fen provides habitat for individuals from a significant number of species (perhaps even prairie and fen specialists), though not necessarily populations.

Table 1. Checklist of Lepidopteran species observed in a small, isolated fen in Muscatine County, Iowa.

Rhopalocera	Heterocera
Hesperiidae	Crambidae
Delaware skipper (<i>Anatrytone logan</i>)	topiary grass-veneer moth (<i>Chrysoteuchia topiarius</i>)
least skipper (<i>Ancyloxypha numitor</i>)	Lucerne moth (<i>Nomophila nearctica</i>)
silver-spotted skipper (<i>Epargyreus clarus</i>)	ironweed root moth (<i>Polygrammodes flavidalis</i>)
black dash (<i>Euphyes conspicua</i>)	celery leaftier moth (<i>Udea rubigalis</i>)
fiery skipper (<i>Hylephila phyleus</i>)	Erebidae
Peck's skipper (<i>Polites peckius</i>)	yellow-collared scape moth (<i>Cisseps fulvicollis</i>)
Lycaenidae	Virginian tiger moth (<i>Spilosoma virginica</i>)
summer azure (<i>Celastrina neglecta</i>)	green cloverworm moth (<i>Hypena scabra</i>)
eastern tailed-blue (<i>Cupido comyntas</i>)	slant-lined owlet moth (<i>Macrochilo absorptalis</i>)
gray copper (<i>Lycaena dione</i>)	dark-spotted palthis moth (<i>Palthis angulalis</i>)
banded hairstreak (<i>Satyrium calanus</i>)	Gelechiidae
Nymphalidae	shining dichomeris (<i>Dichomeris ochripalpella</i>)
meadow fritillary (<i>Boloria bellona</i>)	spotted dichomeris (<i>Dichomeris punctidiscella</i>)
common wood-nymph (<i>Cercyonis pegala</i>)	Gracillariidae
monarch (<i>Danaus plexippus</i>)	[no common name] (<i>Caloptilia violacella</i>)
common buckeye (<i>Junonia coenia</i>)	solitary oak leafminer (<i>Cameraria hamadryadella</i>)
viceroi (<i>Limenitis archippus</i>)	Noctuidae
pearl crescent (<i>Phyciodes tharos</i>)	eight-spotted forester (<i>Alypia octomaculata</i>)
question mark (<i>Polygonia interrogationis</i>)	celery looper moth (<i>Anagrapha falcifera</i>)
great spangled fritillary (<i>Speyeria cybele</i>)	black-dotted maliattha (<i>Maliattha synochitis</i>)
regal fritillary (<i>Speyeria idalia</i>)	bilobed looper moth (<i>Megalographa biloba</i>)
red admiral (<i>Vanessa atalanta</i>)	Henry's marsh moth (<i>Simyra insularis</i>)
Papilionidae	Sphingidae
eastern tiger swallowtail (<i>Papilio glaucus</i>)	white-lined sphinx (<i>Hyles lineata</i>)
black swallowtail (<i>Papilio polyxenes</i>)	Tortricidae
Pieridae	[no common name] (<i>Phaneta radiatana</i>)
orange sulphur (<i>Colias eurytheme</i>)	[no common name] (<i>Priesterognatha fuligana</i>)
cabbage white (<i>Pieris rapae</i>)	[no common name] (<i>Sparganothis albicaudana</i>)
little yellow (<i>Pyrisitia lisa</i>)	sparganothis fruitworm moth (<i>Sparganothis sulfureana</i>)

ACKNOWLEDGEMENTS

We thank Mr. and Mrs. Kautz for granting us permission to conduct this inventory on their property.

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Tiny tachinid flies (Diptera) parasitize heliodinid caterpillars (Heliodinidae)

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Lepidopterists who rear moth caterpillars collected in the field, especially large species, are familiar with tachinid flies. Their dreaded dark brown, oval puparia suddenly appear in the rearing container, sometimes numerous, even 30 or more from a single saturniid cocoon (e.g. Powell 1958). Tachinidae are common destroyers of all kinds of caterpillars, down to the size of tortricid moths, but typically such smaller moths host only one or two of the fly grubs. Many of our brethren may be surprised, however, to learn that even tiny microlepidoptera may number tachinids among their problems.

Larvae of Heliodinidae typically are host-specific and feed primarily on plants of the order Caryophyllales (Aizoaceae, Chenopodiaceae, Portulacaceae, Phytolaccaceae, or Nyctaginaceae, especially the last) (Hsu & Powell 2005, Powell 1991). Thirty of 33 species for which host plants are recorded depend upon these families. The caterpillars are concealed feeders; different species are leaf- or bud-miners, stem-borers, or construct external webs as shelters in late instars. Primarily through field efforts by YFH, we reared 17 species of heliodinids from the southwestern states, Florida, Texas, and Baja California. As might be expected, varying proportions of field-collected larvae were parasitized by several genera of braconids and a variety of chalcidoid wasps (Hsu & Powell 2005). To our surprise, however, one collection produced tachinid flies, so tiny they were at first not recognized as tachinids.

Methods. --- We searched a wide array of Caryophyllales, especially Nyctaginaceae, including herbarium specimens, for larval mines and other evidence of caterpillar feeding, leading to the discovery in the field of previously unknown species and new host plant records. Foliage with leaf mines or larval nests was held in paper towel-lined polyethylene bags in a camp ice box during transit and in an unheated mobile trailer lab at Berkeley, California. Most of our collections were made during spring months, but some bi- or multivoltine species were active later, especially following summer rains in Arizona and elsewhere. Most of the heliodinids we reared developed without diapause. Those that entered diapause over summer and/or winter did so as pupae. Subsets of larvae were taken from larger collections and preserved by immersion in just boiled water then transferred to 95% EtOH.

In 1994, we submitted the reared tachinids to Dr. Paul Arnaud at the California Academy of Sciences, San Francisco, for possible identification.

Results. --- We processed about 80 larval collections from which adult heliodinids were successfully reared, represented by 17 species in five genera. Hymenopterous parasitoids were reared from 20+ collections of nine species of heliodinids. One collection produced four tiny tachinid flies (Fig. 1), along with six moths (Fig. 2), which ultimately represented the type collection of *Neoheliodines vernius*



Figure 1. Adult tachinid flies, *Phytomytera* sp. near *amplicornis* reared from larvae of *Neoheliodines vernius* Hsu (Heliodinidae). Scale bar below in mm.



Figure 2. Adult *Neoheliodines vernius* Hsu (Heliodinidae). Scale bar in mm.

Hsu: California, San Diego Co., 2 miles northeast of Lakeside, larvae collected as flower bud-borers March 24, 1993, on *Mirabilis californica*. The moths emerged April 18 to May 4, and the flies eclosed April 17 to 23, 1993. *N. vernius* is widespread in southern California, in coastal scrub and desert habitats, north to the Owens Valley, and south to central Baja California and Cedros Island, based on numerous collections of adults associated with the larval hosts, several species of *Mirabilis* (Nyctaginaceae). We

reared specimens of *N. vernius* at four localities, but obtained the tachinids just once.

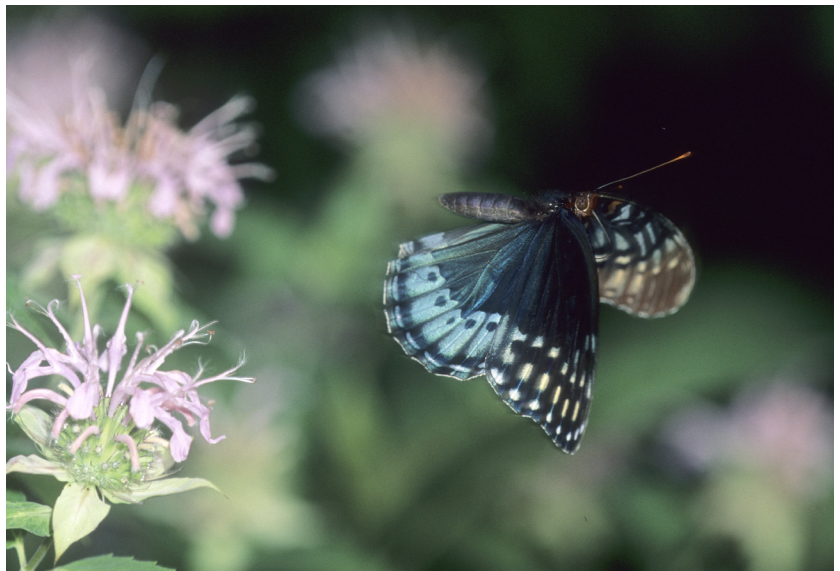
Ultimately, the tachinid specimens were referred to D. M. Wood, Biosystematics Research Centre, Agriculture Canada. Dr. Wood identified them in 2004 as "*Phytomyptera* sp. ?*angulicornis* or near it" [possibly a *lapsus* for *Phytomyptera amplicornis* James ? --- according to the Biosystematic Database of World Diptera (Evenhuis et al. 2000), there are two African tachinids, *Linnaemya angulicornis* (Speiser) and *Carcelia angulicornis* Villeneuve, but no Western Hemisphere tachinid named *angulicornis*].

Discussion. --- Arnaud's tachinid host catalog (1978) did not include Helioidinidae as a host. *Phytomyptera* was placed in Goniinae: Siphonini (=Actiini) in the Stone et al. Catalog (1965) and in Poole's checklist (1996). Members of this tribe are small and parasitize larvae of various microlepidoptera and pyraloids, including borers (e.g., Tortricidae, *Cydia*, *Rhyacionia*) as well as foliage and inflorescence feeders, leaf rollers etc. (e.g., Depressariidae, *Psilocorsis*; Gelechiidae, *Coleotechnites*; Copromorphidae, *Lotisma*; Tortricidae, *Epinotia*, *Argyrotaenia*), all of which are larger moths than *Neoheliodines*. *Phytomyptera amplicornis* was described from Washington State, infesting larvae of *Lotisma trigonana* (Walsingham) (James 1955), a copromorphid which feeds in inflorescences and fruit of Ericaceae. It seems unlikely that our southern California tachinid is the same species as *P. amplicornis* because James cites the latter as 4 mm in length, whereas our *Phytomyptera* range 2.35-2.90 mm, antennal apex to tip of abdomen. Moreover, no helioidinid is known to range north to Washington (Powell 1991, Hsu & Powell 2005).

We urge lepidopterists who are rearing micro moths to closely observe any tiny flies that emerge rather than ignoring them because they superficially resemble detritus feeders such as acalyptrate Cyclorrhapha.

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Left: Jagged Ambush Bug, *Phymata* sp., with Snowberry Clearwing, *Hemaris diffinis*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 4 September 2009. Looks like enough for several meals!! Right: In flight female Diana Fritillary, *Speyeria diana*, Ouachita National Forest, Beech Creek, Le Flore County, Oklahoma, 28 June 2010. (Photos by Bryan Reynolds; check out the Butterflies of the World Foundation website [www.botwf.org])

A temporary colony of Dainty Sulphur (*Nathalis iole*) in Pennsylvania with confirmation of Green Carpetweed (*Mollugo verticillata*) as larval host

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The summer of 2012 brought several migrant species to southwestern Pennsylvania. Some of these migrants are infrequently recorded in the state. On August 12, 2012 near Taylorstown, Washington County, PA, three separate migrant species were photo-documented: Dainty Sulphur (*Nathalis iole*), Ocola Skipper (*Panoquina ocola*), and Cloudless Sulphur (*Phoebis sennae*). The first two represent new records for Washington County, while the Cloudless Sulphur record is the third for the county (two earlier reports were received the prior week) (Wright, 2012).

Rearing Dainty Sulphurs on Green Carpetweed

The Washington County site (Fig. 1) was re-visited on August 25th when five additional Dainty Sulphur adults were found, including a female ovipositing on Green Carpetweed (*Mollugo verticillata* L.) (Molluginaceae). This mat-forming plant is a common weed of waste ground, roadsides, and pavement cracks (Rhoads & Block, 2000). It is a native of tropical America and is found locally throughout the state of Pennsylvania. Scott (1986) thought oviposition upon *Mollugo verticillata* to be a probable error. A decade ago, Parshall & Watt (2002) observed Dainty



Figure 1. Habitat at the temporary Washington County site.

Sulphurs ovipositing upon carpetweed at a study site in Ohio and wrote, "*Mollugo verticillata* should be regarded as an oviposition host and probable larval host in Ohio and perhaps in other states at the northern limits of the Dainty Sulphur." In 2012, an additional colony in Ohio using carpetweed as oviposition host was observed at Killdeer Plains, Wyandot County, by Harner (2012). A return visit to the Taylorstown site in Pennsylvania on August 26th discovered twelve adults, four of which were ovipositing females using the same host. We collected seventeen eggs along with an abundance of the host plant.

The immatures proved to be easy to rear (Fig. 2). The only difficulty was seeing first instars given their diminutive size (2mm). The vigorous larvae ate the carpetweed with gusto, preferring flowers, buds, and the outsides of the seed pods. They also readily ate leaves, if the former were not available. The mature larvae were dimorphic in body color. Of seventeen larvae, all were solid green except three which were green with reddish-purple stripes. We did not record whether the striped larvae primarily consumed carpetweed's dark red seeds, but this would be an interesting experiment for future study. The Dainty Sulphur immatures completed their life cycle and produced healthy adult butterflies within 20-24 days (including some dark form f. *viridis*.) The durations of individual stages were as follows: egg (3 days), larva (10-13 days), and chrysalis (7-8 days). The rate of development from egg to adult is rapid, but compares favorably with published results for this species (19-24 days, Bruce, 1896.) This span of immature stages is also comparable to other southern migratory pierids sighted in Washington County in this and previous seasons, namely the Sleepy Orange (*Abaeis nicippe*) (20-22 days, Edwards, 1881) and the Little Yellow (*Pyrisitia lisa*) (24-25 days, Saunders, 1920).

Monitoring the Dainty Sulphur "Colony"

Between August 25th and October 25th the location was surveyed for Dainty Sulphur adults on roughly a weekly basis. The adults generally remained in the vicinity of the carpetweed, which true to its name carpeted an area roughly measuring 90 x 3 m. Males and females remained near the plants, flying approximately 6-12 inches above the ground. If one strayed beyond the area, it quickly returned to resume patrolling or egg-laying. Field monitoring generally occurred between 10AM and 2PM. The area was walked multiple times and the highest count was taken. The adult

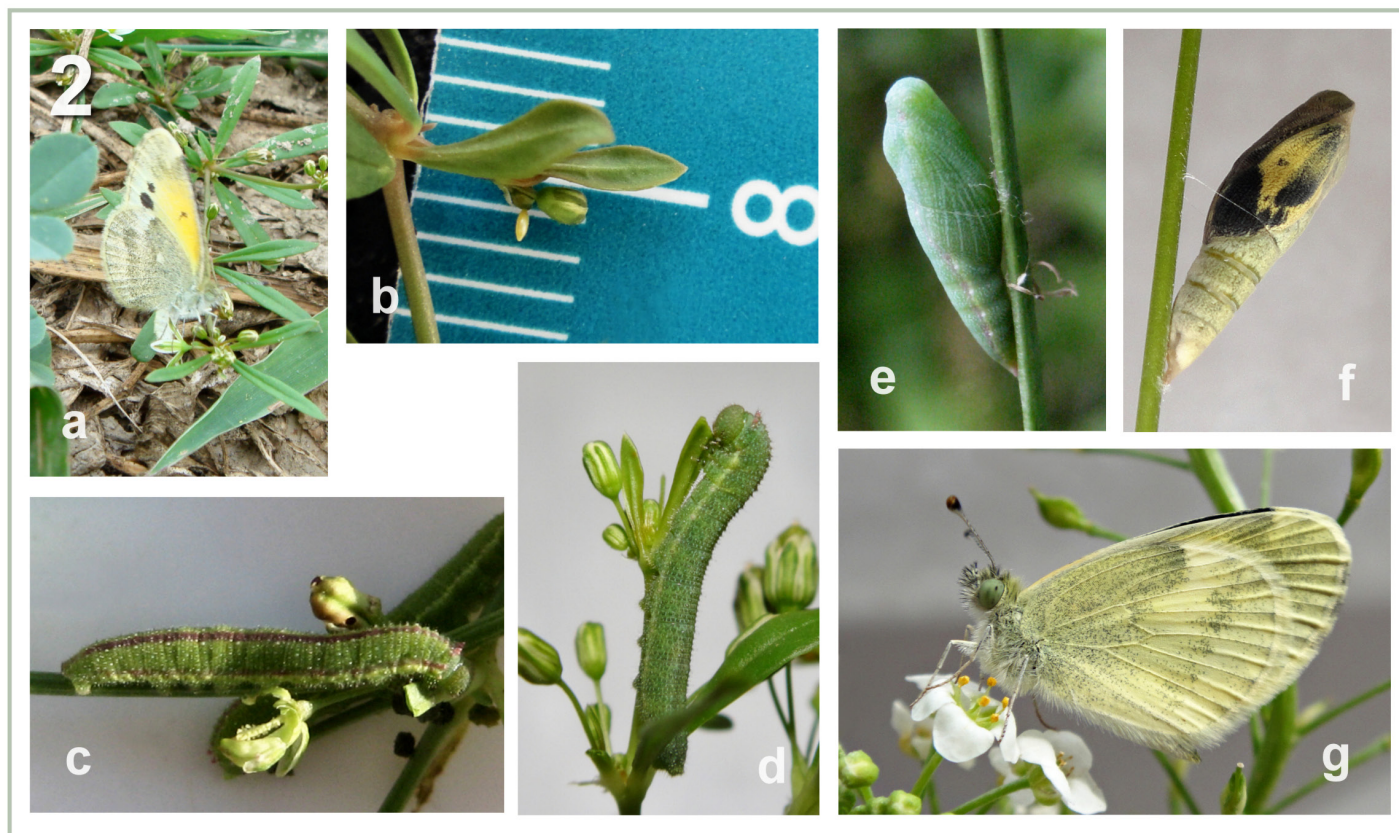


Figure 2. Life cycle of reared subjects. **a)** Female ovipositing on *Mollugo verticillata* flower. **b)** *Nathalis iole* wild collected egg (1mm). **c)** Fifth (final) instar larva, purple striped form. **d)** Fifth instar larva, green form. **e)** Chrysalis of purple striped form. **f)** Chrysalis, eclosion imminent. **g)** Successfully reared adult.

numbers continued to increase during the period, peaking on September 2nd with an estimated count of 30-40 individuals. The butterflies were so active on this date that a truly accurate count was not possible. However, by September 16th the count was down to four. Only one or two were observed on September 21st and 29th. None were seen on October 9th and 14th; the temperatures during the previous week of October 7th hit a low of 30° F for four days, with frost killing tender southern annuals such as carpetweed and mile-a-minute. Surprisingly, however, two *iole* adults were again observed on each of October 17th, 22nd and 25th. Considering the numbers of individuals observed during the survey period, it appeared that after eclosion adult butterflies did not remain in the area to initiate another brood.

Acknowledgement

The authors thank David Wright for his assistance in providing historical references, his manuscript review, and, as always, his kind encouragement and insights. Additionally, we would like to thank the following butterfly enthusiasts for their survey help in counting the Dainty Sulphurs at the temporary colony site: Mike & Evelyn Fowles, Bob & Dianne Machesney, Walt & Dana Shaffer, and Billy & Aimee Weber.

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Announcements:

Call for Season Summary Records

It is once again the time of year to start preparing your submissions for the annual Season Summary report. The annual report is sent as a hardcopy to members each year, and each year's data are also incorporated into the on-line database. Take the time to access the Season Summary database through The Lepidopterists' Society home page (<http://alpha.furman.edu/~snyder/snyder/lep/>) and do a few searches. The value of the on-line database increases as your data gets added each year. Please take the time to consider your field season and report range extensions, seasonal flight shifts, and life history observations to the appropriate Zone Coordinator. Zone Coordinators, their contact information, and the scope of their zone appears on the inside back cover of every issue of the "News".

There are a number of factors that make it necessary for the Zone Coordinators to meet a reporting deadline each year. As a result, you should have your data to the Zone Coordinator(s) no later than January 15, 2013. In most of our Nearctic zones, you have long since put away your cameras, nets, bait traps, and/or lighting equipment by that time anyway.

All records are important. Reporting the same species from the same location provides a history for future researchers to use. Report migratory species, especially the direction of flight and an estimated number of individuals. Again, all of these records may be used in the future.

Important reminder to contributors using MAC computers to submit Season Summary records

PC operating systems save dates based upon a 1900 format, whereas MAC operating systems save dates based upon a 1904 *default* format. The Lepidopterists' Society master database is maintained in PC format. As a result, if you submit your season summary records on an Excel spreadsheet generated on a MAC to a Zone Coordinator who operates a PC system, without first disabling the default date setting, the dates will be off by 4 years and 1 day. If you submit your season summary records on an EXCEL spreadsheet generated on a MAC to a Zone Coordinator who operates a MAC system, without first disabling the default date setting, the dates will appear proper to the Zone Coordinator but the dates will be off by 4 years and 1 day when they are incorporated into the master data base. In some cases, MAC system dates sent to a Zone Coordinator operating a MAC system are off 8 years and 2 days (we haven't figured that one out). The following are instructions so that this problem will never rear its ugly head again.

Instructions: When a MAC user sits down to enter the very first record of the season, he/she must create a new Excel file. **Before typing in any data**, go to "Tools", then

"Options" or "Preferences" depending upon your version of Excel, "Calculations", and ***uncheck*** the 1904 box. Once the data is entered, save this file, and close. If supplemental data is entered directly into this file by keypunching it in, there will not be any problems. However, do NOT paste in MAC data from another file into your file without first ensuring that the 1904 box was *unchecked* in their file PRIOR to entering any of data. Unfortunately, once data has been entered in a file, it does NOT do any good to retroactively *uncheck* the date box!!!

By following these few steps, it is a simple matter to accommodate MAC records. However, you, as the original contributor, must ensure that those steps are taken. Improperly dated records will be rejected and your important records will not get into the database. Leroy C. Koehn, Season Summary Editor, 3000 Fairway Court, Georgetown, KY 40324-9454, **Lepttraps@aol.com**.

Nominations for Karl Jordan Medal 2013

The Karl Jordan Medal is an award in recognition of published original research on the Lepidoptera that may be given biennially by the Lepidopterists' Society at the Annual Meeting. Nominations of publications must be of exceptional quality and focus on the morphology, taxonomy, systematics, biogeography and natural history of Lepidoptera. The criteria (*J. Lep. Soc.*, 26: 207-209) emphasize that the work may be based on a single piece of research or on a series of interrelated works and must be at least three but not more than 25 years old. The latter is to assure that the awarded work(s) have been used by lepidopterological community and stood the test of time. The Jordan Medal is not intended to be a career award for service rendered to the study of Lepidoptera inasmuch as the Society already has such an award, Honorary Life Member. In addition, the nominee does not have to be a member of the Society. A complete list of lepidopterists who have received the Karl Jordan Medal over the years is available on the Lepidopterists' Society website http://www.lepsoc.org/society_news.php.

Formal nominations for the Karl Jordan Medal will be accepted from any member of the Lepidopterists' Society and should be sent to Dr. Jacqueline Y. Miller, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, P.O. Box 112710, Gainesville, FL 32611-2710 or via email (jmiller@flmnh.ufl.edu). Please include a list of the specific publications for which the candidate is nominated, a support letter outlining the significance of the work(s), and if possible, a copy of the nominee's curriculum vitae, no later than 15 February 2013.

www.lepsoc.org

*More Announcements:***New address for back issue sales and lost issue claims**

Julian P. Donahue was appointed by the Executive Council in October as an Assistant Treasurer, and has assumed all responsibility for replacing missing issues of publications and for the sale of back issues. He is taking over from Ron Leuschner, who has faithfully and meticulously performed these and many other volunteer Society duties for many years. Our thanks to Ron for his devoted service.

The entire inventory of back issues has been inventoried. Single issues of the *Journal* are \$4 each, single issues of the *News* are \$3 each, plus shipping, while supplies last. Before ordering, inquire about availability and obtain a shipping estimate. Some single copies of the **Season Summary** published in 2000, 2002, and 2004-2012 are available for \$10 plus shipping (note that each Season Summary is for the calendar year prior to the year of publication). A few copies of the biennial **Membership Directory** are available for the years 2000, 2004, 2008, 2010, and 2012; price is also \$10 per copy plus shipping. Julian P. Donahue, Assistant Treasurer, 735 Rome Drive, Los Angeles, CA 90065-4040, USA; e-mail: julian@donahue.net; Phone: (323) 227-1285; FAX: (323) 227-0595

Is your e-mail address missing from the 2012 Membership Directory?

As part of the process of data verification and “cleaning up” the membership database prior to publishing the new Membership Directory, which is being mailed with this issue of the *News*, in October, 2012, I sent test e-mails to all addresses we have on file. All addresses that failed were permanently deleted from our records.

In addition to e-mails being rejected because of a closed account, mail may have failed to reach valid addresses because the mailbox was full, or the message was refused if it was incorrectly considered to be “spam” (the messages were sent in bulk).

Communicating by e-mail is fast and efficient. To make sure that you receive e-mail messages in the future be sure to add “The Lepidopterists' Society” <julian@donahue.net> to your address book or approved sender list. (We never rent, loan, sell, or share your e-mail address with anyone but Society officers for Society business, although addresses published in the Membership Directory are available to other members and library patrons.)

To add or update your e-mail address in the Society records, please send an e-mail, from the account you want us to use, to me at: julian@donahue.net

Book Review

BIOLOGÍA Y ECOLOGÍA DE LOS LICÉNIDOS ESPAÑOLES, text and photos by Miguel Ginés Muñoz Sariot, text in Spanish, hardbound, 8.5 × 12 inches, self-published in Granada by the author, ISBN 978-84-615-4713-5; date of publication December 2011; available by mailorder from Goecke & Evers in Germany and Pemberley Books in England. Price about US\$105.

This book treats all of the Lycaenidae of Spain, and it is one of the nicest butterfly books I have ever seen. It is virtually perfect in every aspect. The quality of the paper, hard cover, and photographs is excellent. The binding is sewn. The text is detailed and well-organized.

Anyone with a serious interest in the ecology or taxonomy of Holarctic Lycaenidae would find this book to be a valuable resource. Others who enjoy close-up photographs of living butterflies that are in perfect focus would also appreciate this book. For every species covered, the photos include images of eggs, larvae, pupae in three angles (dorsal, lateral, ventral), and adults. Many more images depict associated ants, parasitoids, larval hostplants, nectar sources, and nice scenes of habitats. The latter remind me of the beautiful and diverse countryside of Spain that I have seen through the windows of trains. All of the butterflies are shown alive in the field; there are no photos of pinned specimens. Subspecies are rarely mentioned and are not formally listed nor treated.

The organization is as follows (Table of Contents here translated): Introduction, Coevolution of Lycaenidae with Ants—Key to their Biological Diversity? (subheadings are mechanisms of interactions, chemical cues, acoustic cues), Life Cycle (egg, larva, prepupa, pupa, imago), Foods of Larvae, Foods of Imagos, Parasitoids, Biogeography, Taxonomic Considerations (which contains 3-10 pages *for each species*, arranged under Theclinae, Lycaeninae, Polyommatainae, and Riodinidae), Acknowledgments, Selected Bibliography (which is fairly comprehensive), Index to Species.

I claim no expertise on butterflies, but I know an important and beautiful contribution when I see one! I am afraid that this will be a rare book on this side of the Atlantic, but I plan to donate my copy soon to Texas A&M University, so that at least one copy will be catalogued and eventually available in the USA via interlibrary loan to those who could make good use of it in their research. I urge readers to request their institutional libraries obtain a copy of this excellent book. It is not just another book on European butterflies, and it is well worth the price.

Richard S. Peigler, Department of Biology, University of the Incarnate Word, San Antonio, Texas 78209-6397; peigler@uiwtx.edu



62nd Annual Meeting of the Lepidopterists' Society

Co-hosted with the Association for Tropical Lepidoptera
the Southern Lepidopterists' Society and,
McGuire Center for Lepidoptera & Biodiversity,
Florida Museum of Natural History, University of Florida, Gainesville, Florida
June 27-30, 2013

The McGuire Center, Florida Museum of Natural History and the University of Florida invite you to attend the 62nd Annual Meeting of the Lepidopterists' Society. Please put these important dates on your 2013 calendar for these meetings, which will be held at the Hilton University of Florida Conference Center in Gainesville, Florida, a city noted for its green canopy of magnolias, oaks, and pines. The City of Gainesville received its Butterfly City Certification, the first being awarded in the nation, for its Butterfly Rainforest at the Florida Museum of Natural History.

The tentative schedule will include separate field trips for photographers/watchers and collectors during the day on June 27th and a moth field trip that evening. Please note that the number of participants associated with each field trip will be limited. There will be an evening reception at the McGuire Center. The formal presentations and poster sessions are scheduled for June 28-30 with the business meeting ending at noon. Other special evening events will include the traditional barbecue (June 28), and banquet (June 29). For every registrant, there will be a free admission to the Butterfly Rainforest at the McGuire Center.

Registration information, forms (see pages 132-134) and further updates are available on the Lepidopterists' Society (www.lepsoc.org) as well as at separate meeting (<http://www.lepsoc2013>) websites. Meeting information is obviously being published in this issue of the *News of the Lepidopterists' Society*, and forthcoming issues of the *Southern Lepidopterists' News*, *ATL Notes* (Association for Tropical Lepidoptera), and various list serves. Reduced rates will be available on a block of rooms set aside in the Hilton Hotel in addition to four other nearby hotels with a shuttle and/or bus service available.

For questions regarding local arrangements, please contact Drs. Thomas C. Emmel (tcommel@flmnh.ufl.edu) or Jacqueline Y. Miller (jmiller@flmnh.ufl.edu).

Gainesville is nestled in north Florida off of I-75 just about equidistant from Jacksonville, Orlando, and Tampa. So there are numerous opportunities for a family vacation associated with the meetings. In addition to the Florida Museum of Natural History with the Butterfly Rainforest and the Samuel P. Harn Museum of Art on the University campus, there are a number of historical sites in the Gainesville area and natural attractions such as Devil's Millhopper Geological State Park and Paynes Prairie Preserve State Park.

We look forward to seeing you in Gainesville in June 2013!

Registrants are invited to visit the Rainforest exhibit, attend the evening reception on June 27th and work in the collections at the McGuire Center for Lepidoptera and Biodiversity across 34th street.

Awards and Banquet Door Prizes

The banquet is one of the highlights of the Annual Meeting. The society has a number of special awards which will be given that evening. In addition, there will be special door prizes following the evening presentation. Donors, who would like to provide door prizes, are encouraged to contact Dr. Charles Covell directly (ccovell@flmnh.ufl.edu).

Local Arrangements

Travel. Gainesville has a full service airport with connecting flights from Miami (American Airlines), Atlanta, and Charlotte, with shuttle service to the Hilton. When you make your room reservation at the Hilton, also request shuttle service from the airport. Other major airports in the area include Jacksonville (82 mi.), Orlando (110 mi.), and Tampa (120 miles), especially for international flights. Red Coach Bus Service runs from Miami to Gainesville and drops off in the Cultural Plaza near the McGuire Center (www.redcoachusa.com/ways-to-purchase). Airport shuttle service is available from Orlando and Tampa via Florida Shuttle Price \$60. Make reservations online at Transportation (floridashuttletransportation.com/gainesville-shuttle.html). Also check car rental costs for comparative prices.

Directions to the Hilton University of Florida Conference Center. Take Exit 384 (Archer Road) off I-75 and go east to 34th street. Turn left off Archer. Go north and turn left at the third stoplight. The Hilton Hotel and Conference Center Complex is on your left. For those coming from the south, take Exit 382 (Williston Road) to the stoplight, turn left to the next stoplight (34th St.). Turn left and go north until 34th crosses Archer Road and follow directions listed above. The Hilton University of Florida Hotel and Conference Center is located at 1714 SW 34th Street. The McGuire Center for Lepidoptera and Biodiversity is located to the east (right) off Hull Road in the Cultural Plaza. There is ample free parking at the Conference Center. All formal sessions will take place at the Hilton Hotel Conference Center.

During the conference, arrangements have been made for shuttle transport to the Conference Center for the selected off-site hotels. Vans will run approximately 90 minutes prior to the start of the formal sessions in the morning, and then again approximately 90 minutes following the meetings in the evening. The shuttle will also be available for transport to the evening barbecue and banquet.

Housing. There are 100 rooms blocked at the Hilton with 60 rooms booked at four other hotels/motels which are located conveniently on SW 40th Boulevard, north of Archer Road. The Super 8 and Red Roof Inn have both been recently renovated. Since all events will be held at the Hilton Conference Center, we recommend that registrants stay there. Please note the cut-off dates for each. Registrants should make all reservations directly with the selected hotels. Since there is another large convention in Gainesville that weekend, PLEASE MAKE YOUR RESERVATIONS EARLY. All these hotels have Wi-Fi.

Hotel	Phone (352)	Type	Rate	Shuttle	Breakfast	Cutoff date
Hilton Conference Center	371 3600	Dble	\$129/night	x		5/27/2013
Residence Inn	264 0000	king/sofa	\$102/night		compl.	6/13/2013
Spring Hills Suites	376 8873	Dble	\$79/night		compl.	6/13/2013
Super 8	378 3888	Dble	\$56/night		compl.	6/13/2013
Red Roof	336 3311	Dble	\$62/night			6/13/2013

Please fill in the space on the registration form where you plan to stay during the meetings. Since registrants will be staying in several hotels, motels, and campgrounds, it will be easier to locate you to provide shuttle service, in case of an emergency or if another registrant wants to contact you.

Campgrounds. There are several campgrounds in the area, but none directly in Gainesville. Traveler's Camp Ground in Alachua (north about 13 mi.) has easy access off I-75 with all levels of camping (386 462 2505) (<http://travelerscampground.com>). Paynes Prairie Preserve State Park has fewer amenities but the overnight rate is \$19 (352 466 3397) (100 Savannah Blvd., Micanopy, FL 32667). Take state route 441 south out of Gainesville, past Lake Wauberg (approximately 9 miles). Entrance will be on the left.

Food. Lunches and two evening meals are not included in the registration fee. Albert's Restaurant is available in the Hilton Hotel, and special arrangements have been made for a buffet luncheon during the meetings (Soup & Salad, \$10.95; full buffet at \$14.95). Tickets can be purchased at the registration table. There is the Camellia Café available for lunch on the lower level of the Harn Museum in the Cultural Plaza near the McGuire Center. There are a number of small restaurants within walking distance and off of Archer Road. A list of local restaurants will also be provided.

Parking at the Convention Center will be free. However, parking on the UF campus is a challenge. If you do plan to visit the Museum prior to or following the meetings, please let us know in advance so that we can make arrangements. Depending on various events at the Cultural Plaza, parking should not be a problem on the weekend.

Field Trips:

Daytime Field Trips (June 27th). There will be trips for observing and photographing butterflies in the Natural Area Teaching Laboratory (NATL) between the Phillips Center and the Department of Entomology & Nematology. In addition, we have made arrangements for a possible visit to the Morningside Nature Center for observations as well. For those interested in collecting, we will evaluate several sites in the general area just before the meeting to maximize field time. There are a wide variety of habitats including flatwood, maritime hammocks, swamps, and salt marshes.

Night Collecting. There will be a moth collecting trip on Thursday evening (June 27th) to Paynes Prairie Preserve State Park. Please check the Lepidopterists' Society website for additional information. Registration for the trips is listed on

a separate form and includes a liability release that must be submitted no later than May 27th.

These trips will be on a first-come basis, and depending on attendance, we cannot guarantee that there will sufficient space for everyone. Box lunches will be available for the day trips at the cost of \$6. Following the reception, we suggest that the night collecting participants stop and pick up something (such as Subway, Five Guys Burgers, SW 35 Blvd. off Archer Road or Williston Plaza off 34th St (Publix, First Wok, Little Caesars). You will turning right on to 34th St. and then turn left at the stoplight to go to Route 441 and go south to Paynes Prairie. Participants are responsible for their own sunscreen, flashlights, insect repellent rain gear, and water. Florida is noted for high humidity and warm temperatures. We suggest that attendees plan accordingly. Maps, directions and updated information will be provided on the website

A post-meeting trip is planned to Peru (see announcement below) at this point and if there is sufficient interest, another location is under consideration. Please contact Expedition Travel, Inc. (ExpeditionTravel@gmail.com) directly for further information.

Local Attractions. There are many local attractions on campus. The Florida Museum of Natural History at Powell Hall, the McGuire Center for Lepidoptera and Biodiversity, Harn Museum of Art, and the Phillips Center for the Performing Arts are located in the UF Cultural Plaza. In addition, there are many natural sites including the Devil's Millhopper, Payne's Prairie, and San Felasco Hammock nearby as well as many historical sites in Gainesville proper. Additional information is available on the Gainesville Visitors Bureau website (www.visitgainesville.net) and will be available in the registration packet. If you have any questions about local attractions and events, you can call the Visitors' Bureau directly at 1 (866) 778 5002.

McGuire Collection Resources. The curatorial and support staff have made impressive strides to incorporate new material into the McGuire Collections for students, amateurs, and professional lepidopterists to consult during the meetings. We invite you to visit the collections during your stay in Gainesville, but please make an appointment by 10 June with our collections managers, Drs. Andrei Sourakov (asourakov@fmnh.ufl.edu) and Andrew Warren (andy@butterfliesofamerica.com), so that we can best serve you. Please indicate which groups you would like to examine so that we can organize specimens and optimize your time in the McGuire Collections.

**After the 2013 LepSoc meetings in Gainesville, join us for a
Lepidopterists' Expedition to ...**

PERU
and Manu National Park

July 1 to 13, 2013

A treasure chest for Lepidoptera diversity, Peru is one of the most exciting places for any naturalist to visit, especially a Lepidopterist. Email ExpeditionTravel@gmail.com today to get advanced information for this and other post-meeting expeditions that are led by curators and professors from the McGuire Center for Lepidoptera and Biodiversity.

Registration for 62nd Annual Meetings of the Lepidopterists' Society

McGuire Center for Lepidoptera & Biodiversity,
Florida Museum of Natural History, University of Florida, Gainesville, Florida
Co-hosted with the Association for Tropical Lepidoptera
and the Southern Lepidopterists' Society and
Hilton University of Florida Conference Center and
27-30 June 2013

Last name _____ First name and initial _____

Other registered family/group members _____

Street address or P. O. Box _____

City _____ State/province and postal code _____

Country _____ e-mail _____ Phone _____

Institution or affiliation for name tag: _____

List housing selection _____ Will require shuttle to meeting events _____

Special dietary requirements _____

What is your t-shirt size? ___ Small ___ Medium ___ Large ___ XL ___

Registration fee includes breaks, program, t-shirt, and other registration materials.

- 1) Number of persons x \$115 (before May 27th) ; x \$140 (after May 27th)\$ _____
- 2) Number of students x \$85 (before May 27th); x \$110 (after May 27th,)\$ _____
- 3) Southern Barbecue Friday evening includes dinner (vegetarian options): \$20 per person.....\$ _____
- 4) Annual banquet buffet with vegetarian options: \$33 per person\$ _____

Reservations for banquet and barbecue due no later than June 15th

Field trips, box lunch (\$6).....\$ _____

Total enclosed.....\$ _____

Attending reception at McGuire Center on Thursday, June 27th ? _____ Yes _____ No

US checks are preferred and should be made payable to: LepSoc2013 and mailed to Dr. Jacqueline Miller, LepSoc2013, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, P. O. Box 112710, Gainesville, FL 32611-2710. Registration may be paid via PayPal on (<http://www.lepsoc2013>). Cancellations after 1 June will be subject to a \$25 cancellation fee. NOTE: At the time of the conference, registration capacity may be limited to the formal sessions only. Event tickets, if any, may be limited.

This form is available online at www.lepsoc.org and <http://www.lepsoc2013>; you can xerox this form, fill it in and send it in should you so desire.

Field Trip Registration

Last name: _____ First name and initial _____

Street address or P. O. Box: _____

City: _____ State/province and postal code: _____

Country: _____ e-mail _____ Phone _____

Note: A signed liability release form is required for all field trip participants (see below)

I (we) plan to attend a day field trip on June 27th (box lunch \$6/person)\$ _____

I (we) plan to attend a moth collecting trip on June 27th (box lunch \$6/person)\$ _____

I am interested in a trip where collecting is a major activity _____

I am interesting in a trip where photography/observation is the main activity _____

I will require a ride _____

There is no charge for the field trips. A box or bag lunch and beverage will be available for \$6. Mail completed form and check to LepSoc2013, Dr. Jacqueline Miller, McGuire Center for Lepidoptera and Biodiversity, University of Florida, P. O. Box 112710, Gainesville, FL 32611-2710. Participants will be asked to car-pool in their own vehicles.

Current plans for local collection thus far may include the Ordway Research Station northeast of the University, and Gulf Hammock and Cedar Key, west of Gainesville. Moth collecting trip will be to Paynes Prairie State Preserve. Other areas are being investigated.

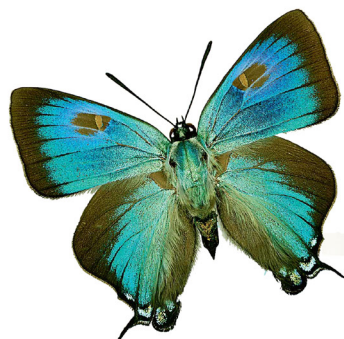
Release from liability

I release the Lepidopterists' Society, the Southern Lepidopterists' Society, and the Association for Tropical Lepidoptera, their officers, and the field trip leaders from any liability that may result from my participation in field trips connected with the 2013 combined meetings of the above societies at the University of Florida, Gainesville, Florida. I understand that I may be driven in a private vehicle and that there are potential hazards on any field trip. I assume all responsibility, personal and financial, for any accidents or other personal injury or loss on any field trip in which I participate.

Name (printed) _____ Signature _____

Date _____

This form is available online at www.lepsoc.org and <http://www.lepsoc2013>; you can xerox this form, fill it in and send it in should you so desire.



**62nd Annual Meeting
of the Lepidopterists' Society**
June 27-30, 2013

McGuire Center for Lepidoptera
where science takes flight
and Biodiversity

Call for Contributed Papers
62nd Annual Meetings of the Lepidopterists' Society
27-30 June 2013
Co-hosted with The Association for Tropical Lepidoptera,
The Southern Lepidopterists' Society,
Hilton University of Florida Conference Center and
The McGuire Center for Lepidoptera and Biodiversity, Gainesville, Florida

Name: _____

Address or P. O. Box: _____

Phone: _____ Fax: _____ email: _____

Please check: Poster Student Paper Other

Please type both title and abstract, and limit the abstract to 125 words or less

Title:

Abstract:

Due to the anticipated heavy attendance at these meetings, only one Contributed Paper may be submitted per person as first author. Each Contributed Paper is limited to a total of 15 minutes (12 minutes for the formal presentation and three minutes for questions). Information concerning the above, including the title and abstract, must be received by 27 May 2013 for inclusion in the printed program. To expedite this process, please submit abstracts online (www.lepsoc2013) or send an email attachment in Word or Plain Text of your title/abstract to lepsoc2013@gmail.com and/or send this completed form to Dr. Jacqueline Miller, LepSoc2013, McGuire Center for Lepidoptera & Biodiversity, University of Florida, P. O. Box 112710, Gainesville, FL 32611-2710. A preliminary schedule of presentations and events will be available online by 15 June at www.lepsoc2013.com.

Oral presentations will be given in PowerPoint. To avoid potential software compatibility issues, presentations may also be uploaded in pdf format provided these have been generated at suitable resolutions. Arrangements for other special equipment should be made well in advance of the meetings in order to keep equipment costs to a minimum. All formal presentation sessions will be held at the Hilton University of Florida Conference Center.

This form is available online at www.lepsoc.org and <http://www.lepsoc2013>; you can xerox this form, fill it in and send it in should you so desire.

Recent rearing and field biology notes from Southeastern Arizona

Brian P. Banker

8302 Cravell Avenue, Pico Rivera, CA 90660 mormonmetalmark@yahoo.com

I: New Hostplant Record for *Polygonia satyrus* W. H. Edwards (Nymphalinae; Nymphalidae) in Southeastern Arizona

In the late morning of Tuesday, 24 April, 2012, a brief perusal of the Net-Leaf Hackberry (*Celtis reticulata*) bushes/trees in and around the Florida Canyon (4400'; Santa Rita Mtns., Coronado National Forest, Pima County, Arizona) parking lot whose primary goal was the collection of Tawny Emperor (*Asterocampa clyton subpallida* Barnes & McDunnough) larvae revealed an unexpected guest. While the desired emperor larvae were present, a unique black-and cream spiny nymphalid larva, in the fourth instar, was also spotted under a hackberry leaf and immediately taken. An adult Question Mark (*Polygonia interrogationis* Fabricius) was spotted by myself slightly upstream from the parking lot, along the main trail, in this canyon exactly three weeks prior, and at least one *interrogationis* larva had been taken in Florida in the past on this same host, a well-known food source for the species (Jim P. Brock; 28 August 1999 [http://butterfliesofamerica.com/imagehtmls/Nymphalidae/Polygonia_interrogationis_larva_Pima_Co_AZ_USA_28-VIII-99_JPB_i.htm]). As such, I assumed that my caterpillar was the same, despite the somewhat non-standard coloration (*interrogationis* larvae nearly always show red pigmentation). The caterpillar was quickly taken home, and fed on cuttings of the famous "Golf Links" row of city-planted *reticulata* trees near the Davis-Monthan Air Force Base in Tucson (which tend to hold up better in the lab than other *reticulata* cuttings for unknown reasons), where it grew and developed quickly and uneventfully, with pupation occurring in circa one week.

Emergence took place in roughly another week (early May 2012). The adult *Polygonia* specimen, while perfectly formed, was rather atypical for *interrogationis*. It was rather on the small side, was unusually "ragged" looking, and was not particularly caudally pronounced. As the wings were opened in the spreading process, it became immediately clear that I in fact was in the possession of a male Satyr Comma (*Polygonia satyrus satyrus* W.H. Edwards). The adult was of full, normal size for a male *satyrus* and possessed wholly standard scaling and pigmentation, strongly implying that *C. reticulata* is a completely nutritionally suitable host for the taxon.

The standard host for Satyr Comma throughout its range is widely assumed to be stinging nettle in its various species (*Urtica*, Urticaceae), upon which the larvae can oftentimes be found in great numbers in high-altitude southeastern

Arizona in such localities as Hospital Flat, Graham Mtns., Graham County and Comfort Spring, Huachuca Mtns., Cochise Co. Still, adults of this insect are fairly commonly found a considerable distance from known patches of *Urtica*. It has been reported that certain colonies of *satyrus* in Arizona are associated with *Salix* (willows; Salicaceae, Scott 1986; K. Roever, personal correspondence), but this author lacks first-hand experience with these. Regular usage of *Celtis* by *satyrus* would be unsurprising and would explain much of its distribution in Sonoran Desert regions. The botanical families Ulmaceae (to which hackberry belongs), Urticaceae (the nettle family), and Moraceae are widely assumed to be closely allied (i.e. Scott, 1986), and therefore a switch to *Celtis* by an erstwhile *Urtica* feeder would not be a particularly great leap. (Indeed, the Satyr's sibling *interrogationis* uses both *Celtis* and *Urtica*.) Utilization of *C. reticulata* on a regular basis by *P. satyrus* would explain many records of this butterfly in low- to mid-elevation xeric Sonoran/Chihuahuan desert washes and canyons that are too hot and arid to sustain any populations of stinging nettles.

II. Tough Luck with *Chioides albofasciatus* Hewitson (Eudamiinae; Hesperidae)

For a number of years, this author has been personally captivated with the White-Striped Longtail (*Chioides albofasciatus* Hewitson) on account of its striking beauty and relative rarity within the range confines of Bailowitz and Brock (1991) and has endeavored on numerous occasions to obtain a reared representation. Such labors have proven to be nearly entirely fruitless. In the span of well over a dozen dedicated and exhaustive searches for the insect's ova, larvae, pupae, or gravid females between early June of 2010 and September of 2012, this author has produced a grand total of two larvae and subsequent reared adults—hardly a productive use of time and energy.

The insect's primary host in southeastern Arizona, Wright's Milkpea (*Galactia wrightii*; Jim P. Brock, personal correspondence) abounds in a number of canyons, road-slopes, and vistas in the region, oftentimes in eye-popping densities. This small trifoliate leguminous vine possesses dull gray-green leaves and singular pinkish flowers, and ranges throughout a vast swathe of the Sonoran and Chihuahuan Deserts, being found from the Phoenix, Arizona vicinity (<http://www.home.earthlink.net/~christrask/Galactia%20wrightii%2001.pdf>) to at least as far east as the Deming, New Mexico area (<http://swbiodiversity.org/seinet/taxa/index.php?taxon=1442>)

and well south into Mexico. The plant is hardy, dense, and abundant; surely *C. albofasciatus* is not scarce for a lack of host. (Bailowitz and Brock, 1991, postulate several other possible hosts for *albofasciatus* in SE AZ, but this author has not located or looked on any of them.)

While not extremely scarce, *C. albofasciatus* is greatly uncommon and never reliably found on any given trip. It appears to be the most common in the months of April-May and again in October in southeastern Arizona. Although no one particular trip offers a particularly good chance of spotting this prize, it is encountered by at least a couple of observers in a few Sonoran Desert canyons of low to medium elevation virtually every year, such as Box and Florida Canyons in the Santa Rita Mtns. and Sycamore Canyon and California Gulch in the Pajarito Mtns. *Galactia* abounds in or near all four of these. Occasional lucky entomologists might even happen upon multiple specimens in a single day (i.e. W. Miller, April 2010). The standard explanation given for this butterfly's lack of abundance in Arizona (i.e. Jim Brock, personal correspondence) is its inability to handle chills; it cannot tolerate any kind of cold (Howe 1975; N. Grishin, personal correspondence), and southeastern Arizona represents the northernmost periphery of its range, subject to freezes nearly every winter. Dr. Nick Grishin even goes so far as to suggest that *albofasciatus* is a regular stray to the region and not a true resident, which would explain the scarcity. However, spring records of this insect are had nearly every year and are often of very fresh adults; regular spring records and pristine condition (the tailed-skippers are among the most fragile of butterflies) tend to argue against influx. Fresh adults were even observed by this author in the spring of 2011 (Florida Canyon, Santa Rita Mtns., Pima Co., AZ) scarcely two or three months subsequent to a series of vicious, killing freezes that southeastern Arizona had not seen the likes of for many decades (temperatures reached 12 degrees Fahrenheit in Tucson, and were likely ten or more degrees below that in Florida Cyn.) It would thus appear that although many larvae are killed off each winter, at least a few in these locations manage to get through at all times.

I found and reared out two larvae of this taxon in nearly three years of exhaustive searches: 9 June 2010, Box Canyon, 4100', road slope approximately 1 mile east of large concrete bridge, Coronado National Forest, Santa Rita Mtns., Pima County, Arizona, first instar (eclosed a male, July 2010), and 1 May 2012, same data, fourth instar (eclosed female, June 2012). Curiously, the latter larva stayed green throughout its final instar and never changed coloration to tan as is standard for the species; adult phenotype was standard. Care of the larvae is easy and uneventful. Early-instar larvae make a simple, standard "slit and fold" hesperiid nest, whereas later ones bind the three leaflets together into a loose cone. The ubiquitous and greatly more abundant Funereal Duskywing (*Erynnis funeralis* Scudder & Burgess) also utilizes *Galactia* and builds the exact same kind of nest, greatly outnumbering the desired longtail. *Funeralis* larvae are immediately

distinguished from those of *albofasciatus* by their shield-shaped head capsule (typical of all *Erynnis*), a feature noticeable even in the first instar. For a picture of the numbers of *funeralis* the would-be rearer of *albofasciatus* must wade through, consider the following findings:

9 June 2010, Box Canyon: Three hesperiid nests found; two *funeralis*, one *albofasciatus*.

1 May 2012, Box Canyon: Nine nests found; eight *funeralis*, one *albofasciatus*.

12 September 2012, Box Canyon (final attempt): ~12 nests found, all *funeralis*.

Clearly *albofasciatus* is a rare butterfly in Arizona due to its barely being able to handle the local winters, and looking for it exclusively is not generally a wise way to spend a day. It is unlikely that any lepidopterist will ever secure more than a couple of specimens or photographs of this species here. The skipper is far more common in the Lower Rio Grande Valley of south Texas and Sonora, Mexico, both of which have far fewer and milder freezes.

III. Challenges to the early stages of *Asterocampa clyton subpallida* Barnes & McDunnough (Apaturinae; Nymphalidae) in the Santa Rita Mountains, Arizona

The Arizona subspecies of the Tawny Emperor, *Asterocampa clyton subpallida* Barnes & McDunnough, is a delightful insect. As its trinomial designation implies, it is among the palest of *clyton* subspecies. In powerful contrast to the frequently quite melanic eastern U.S. nominotypical Tawny Emperor, its sandy to caramel-colored dorsal surface and vague, nearly unmarked gray-tan ventral side may be adaptations to lessen heat retention or for greater crypsis in desert environments. It is generally considered to be the most special and desirable of the three resident *Asterocampa* in southeastern Arizona, being more limited in habitat and occupied area than *celtis* and *leilia* (both of which are generally present everywhere their respective *Celtis* hosts are found, even in the middle of urbanization in Tucson). As males are wary and powerful fliers, and females are deft maneuverers that quickly disappear into thickets of growth at the slightest threat, the collection and photography of this insect can be quite difficult, even with bait. Rearing the larvae is the best way to procure any representation, especially if adults in good condition are desired.

It is fairly easy to locate early-instar larvae or egg masses in the late fall in Florida Canyon, Santa Rita Mtns., Pima County, AZ (the best locality for this taxon), but most of these will enter or already be in diapause and preserving them viably during the winter is a challenge; an outdoor sleeve is probably the best way. Larger larvae can also be obtained in the months of April and again in September, and will go straight-through; however, they are quite susceptible to the effects of illness and stress. On many occasions, field-

collected fourth/fifth-instar *subpallida* larvae will react negatively to laboratory confinement, wandering around aimlessly about their container and failing to feed at all, or will develop an odd disease in which despite lengthy and continuous feeding, they will fail to grow and pupate, eventually shriveling down to nothing and dying. This may be an infection with a granulosis virus (S. McElFresh, personal correspondence); the author has observed this in numerous Rhopalocera taxa and families, albeit never as much as with *A. clyton*. A final note to keep in mind in the laboratory keeping of *clyton* is that the pupae must be kept dry at all times. Even a little dampness can produce a strange condition in which the pupae do not develop symmetrically; again, this is a condition I have observed across nearly all families of Rhopalocera, but to which the Tawny appears especially vulnerable.

While effective collection and rearing of Lepidoptera juveniles always requires diligence and trial/error no matter what, we must always keep in mind that new challenges can always arise. Indeed, a recent development in the Santa Rita Mountains, Pima County, Arizona poses yet another hurdle to the procurement of *clyton* in the field and may cause significant wild mortality as well. In September of 2011, this author first noticed an invasion of strange yellow, white, and black hairy Heterocera larvae feeding on the leaves of *Celtis reticulata* around the Florida Canyon parking lot. These larvae, which cause a highly unpleasant urticating skin reaction upon contact with their scoli (which are obscured by their longer guard-hairs), were identified as *Norape ovina* Sepp, Megalopygidae by Dr. Bruce Walsh of the University of Arizona, who noted that normally they are rare here (<http://pets.groups.yahoo.com/group/DesertLeps/message/9526>). They nearly defoliated some trees and at times forced the *clyton* caterpillars to huddle together on lone, isolated leaves. The following summer (22 July 2012), this author and several other members of a SEABA (South-East Arizona Butterfly Association) sightseeing group observed many adults of this moth at the same locality, many of them *en copulo*. It was not very surprising, then, to find even more of these noxious (to me) larvae this following autumn (12 September 2012). It was impossible to search over the branches of hackberry for emperor larvae without getting repeatedly stung by *Norape*. To make matters worse, a second megalopygid larva (an "asp" or "puss" caterpillar, *Megalopyge* sp.) was also prevalent now on the *C. reticulata* leaves. From my readings, the sting of *Megalopyge* larvae is even worse than that of *Norape*; fortunately, I did not make contact with them. This is not the end of it, however. Albeit present in far smaller numbers, a third species of likely urticating moth caterpillar has also been found on the Florida Canyon hackberry trees in these past two falls; an unidentified green limacodid larva, greatly resembling a vastly compressed *A. clyton* caterpillar and topping out at about 17mm, also feeds on the leaves of *C. reticulata*.

I have no idea what the long-term impact of the three stinging moth larvae will be on *Asterocampa clyton* (and

celtis), but surely it cannot be beneficial. In addition to removing large amounts of available food, shelter and pupating strata (the prepupal larvae of *Asterocampa* silk themselves to the flat surface of a fresh, succulent leaf, as opposed to hanging down from a stem or twig like virtually all other nymphalids) for the butterfly larvae, it is quite plausible that any meaningful contact with the scoli of the moth larvae will puncture the integument of the *Asterocampa*, envenomating and killing or at least greatly wounding them. It is not surprising to me that in September 2012, I found about exactly half the *clyton* larvae I did compared to the year before. Considering that I put about the same amount of effort into my searches in both years, it is difficult to see this as purely coincidental. Whether or not this trend will continue and worsen remains to be seen and is certainly a worthy monitoring project for consumptive and nonconsumptive lepidopterists alike in the Santa Rita Mountains. One reason to retain hope is that these moths do not appear to have hit all areas of *Asterocampa* habitat in the lower Santa Ritas with equal ferocity; in October 2012, SEABA leader Fred Heath reported that the *C. reticulata* trees at Proctor (lower Madera Canyon, Pima County, AZ) appeared to be untouched by ravenous megalopygid larvae (<http://pets.groups.yahoo.com/group/DesertLeps/message/11979>).

Naturally, all Lepidoptera face a formidable array of natural threats and foes; as we all know, as a general rule only two immatures produced by any female reach adulthood. As years go by, specific predators, parasites, competitors, and forces of nature can either intensify, wane, or remain constant. All successful Lepidoptera populations, *Asterocampa clyton subpallida* included, have managed to adapt to all hurdles that the wild can throw at them and "keep on ticking" so to speak. It will be most fascinating to see what *clyton*'s short- and long-term responses to this megalopygid invasion in its greatest stronghold will be. Will we permanently see a smaller population of *clyton*? Will it adapt completely in a few years and be unfazed? Will the moth populations be cut down to size by their own predators and parasites as inevitably happens whenever there is a bounty? Only time will tell.

Literature Cited

- Bailowitz, Richard A. and Brock, James P. *Butterflies of South eastern Arizona*. Sonoran Arthropod Studies Inc. Press, 1991.
- Heath, Frederick. DesertLeps Yahoo listserv posting. <http://pets.groups.yahoo.com/group/DesertLeps/message/11979>. Accessed November 3, 2012.
- Howe, William H. *The Butterflies of North America*. Doubleday Press, 1975.
- Scott, James A. *The Butterflies of North America: A Natural History and Field Guide*. Stanford University Press, 1986.
- Southwestern Environmental Information Network (Southwest Biodiversity Consortium) online herbarium. *Galactia wrightii* species page. <http://swbiodiversity.org/seinet/taxa/index.php?taxon=1442>. Accessed November 2, 2012.

Continued on p. 139

Membership Updates...

Julian Donahue

NOTE: The new Membership Directory was shipped with this Newsletter and contains almost all of the indicated changes. If you did not get a Membership Directory with this Newsletter, then please contact Julian Donahue (see Assistant Secretary, second to last page of News).

Includes ALL CHANGES received by 12 November 2012

"Lost" Members (publications returned: "temporarily away," "moved," "left no address," or "addressee unknown"):

Pautsch, Richard (Boulder, Colorado)

New and Reinstated Members since the 2012 Membership Directory went to press:

Hitchcox, Mark: 9239 North Saint Johns Avenue, Portland, OR 97203-1566.

Simonsen, Thomas J. (Ph.D.): Department of Entomology, The Natural History Museum, Cromwell Road, London SW7 5BD, **England**.

New Members who are included in the 2012 Membership Directory; listed here by name only:

Alstadt, Daphne
Espeland, Marianne
Foreman, Mark
Gernaat, Hajo B.P.E. (Ph.D.)
Jansenson, Lucas
Koptur, Suzanne
Lacey, George
Newcomer, David
Warren, Sally J.
Wick, Ashley Anne (Ms.)
Ylla i Ullastre, Josep (Ph.D.)

Address Changes for members who moved after the 2012 Membership Directory went to press (they are listed in the 2012 Membership Directory with their former address; all U.S.A. unless noted otherwise):

Martineau, Jason: 1665 Edwards Drive, Sheridan, WY 82801-6043.

Mustelin, Tomas M. (M.D., Ph.D.): 11904 Tallwood Court, Potomac, MD 20854-2169.

Rosenbaum, Eric R.: 260 River Ridge Point, Little Rock, AR 72227-1527.

The following members have recently moved; their new addresses are included in the 2012 Membership Directory, and are they listed here by name only.

Barksdale, Charles M. (Ph.D., FRES)

Callaghan, Curtis J.

Coyle, Raymond

Daniels, Emily Vanessa

Grinter, Chris

Kohler, Steve

Lee, Sangmi

Lehnert, Matthew S. (Ph.D.)

Mattoni, Rudi (Ph.D.)

McGuinness, Hugh (Ph.D.)

Miller, James S. (Ph.D.)

Monroe, James L. (Ph.D.)

Oliver, Jeff

Patel, Sanjay

Prudic, Katy

Rota, Jadranka (Ph.D.)

Smith, Charles R. (Ph.D.)

Recent rearing notes from Southeastern Arizona

Continued from p. 138

Trask, Chris. *Galactia wrightii*: Wright's Milkpea species page. <http://www.home.earthlink.net/~christrask/Galactia%20wrightii%2001.pdf>. Accessed November 2, 2012.

Walsh, Dr. Bruce. DesertLeps Yahoo listserve posting. <http://pets.groups.yahoo.com/group/DesertLeps/message/9526>. Accessed November 3, 2012.

Warren, Dr. Andrew. Butterflies of America foundation website http://butterfliesofamerica.com/imagehtmls/Nymphalidae/Polygonia_interrogationis_larva_Pima_Co_AZ_USA_28-VIII-99_JPB_i.htm. Accessed November 2, 2012.



www.lepsoc.org

The Marketplace

IMPORTANT NOTICE TO ADVERTISERS: If the number following your advertisement is "543" then you must renew your ad 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

544

BOOKS WANTED : I am wishing to purchase the following books in the editions specified : Butterflies by E.B Ford, 1945 (Macmillan) ; Moths by E.B Ford, 1951 (Macmillan) ; Insect Natural History by A.D Imms, 1951 (Blakiston) ; Life in Lakes and Rivers by T.T Macan and E.B Worthington, 1951 (Praeger) ; World of the Honeybee by C.G Butler (Macmillan, 1954 edition or Taplinger, 1974 edition) ; Herring Gull's World by N.Tinbergen, 1953 (Praeger) ; Lake District by W.H Pearsall and W.Pennington, 1974 (Taplinger) ; Mumps Measles and Mosaics by K.M Smith and R.Markham, 1954 (Praeger). I require clean bright copies in nice dust-jacket, not ex-library copies. If you have any of these, or any 'New Naturalist' series ephemera (flyers, brochures etc) or signed copies which you would be interested in selling, then please contact Jeremy Steeden at jsteeden369@btinternet.com 543

Only SEVEN Commemorative Volumes Left!

The Lepidopterists' Society has only seven copies of the Commemorative Volume (of the Memoir Series) left. If anyone still wants one, you will need to place your order very soon or they will be gone forever. To place your order, you need to contact our publications manager Kenneth R. Bliss at krbliss@gmail.com or (732)968-1079.

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. 541, 542) 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.

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

For sale: Newly published is Mike Fisher's part 7.5 of his Butterflies of Colorado series, 41 species treated, 270 color images, 192 pages, perfect-bound. *Anthocharis julia prestonorum* described is newly described. \$51.50 (limited quantities). Part 7.4. Lycaenidae and Riodinidae is also available. 381 images, 205 pages (\$65). Parts 1-3 are out-of-print. Also available: Butterflies of North America. 3. Butterflies of Kern and Tulare Counties, California by Ken Davenport (\$18.00) and 6. Butterflies of Oregon, 2 maps, images on cover by Andrew D. Warren (\$43.00).

Publications may be ordered from BioQuip (www.BioQuip.com) or from Gillette Publications, Department of Bioagricultural Sciences, Colorado State University, Ft. Collins, CO 80523-1177. If you order from the latter add \$5 handling charge for single book purchases. 544

Catocala of the World by Ishizuka, 2011. 108 p., 47 color plates with photos of all 226 species of world underwing moths. In Japanese, with scientific names, localities, and hostplants in Latin/English. Hardcover, \$179.95. Also Hardwick, 1996, **A Monograph to the Heliothentinae: hardcover** \$69.95, softcover \$49.95. Moths of North America, **MONA Check List**, and **Hawk Moths of North America** always in stock. Add 8.75% sales tax in California. Free U.S. shipping if prepaid with check, PayPal, MasterCard or Visa. Visit our Abebooks online storefront at ERSBooks.com. Entomological Reprint Specialists (Julian Donahue), 735 Rome Dr., Los Angeles, CA 90065-4040; bugbooks@aol.com 543

Equipment

Innovative light trap, the Worldwide Butterflies Moonlander, designed for remote areas, folds totally flat, very lightweight and compact. Hang or stand. Comes with unique Goodden GemLight which runs all night on just 4 AA rechargeable batteries. Photo cell puts light on and off automatically. Light and batteries fit the palm of your hand and weigh only a few oz. Ideal for air travel. You can post the light and trap in a small package economically to another country to have samples caught and sent to you. See full details on www.wwb.co.uk (Robert Goodden) 542

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 544

Light Traps: 12VDC 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 544

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 544

Research Requests

I am interested in evaluating the roles of various natural enemies in the decline of silkmoths in the Northeast. Towards this end it would be helpful to study cocoons that bear evidence of parasitism by flies or wasps or predation by birds or mammals. I would appreciate receiving cocoons of either promethea or cecropia that display incidences of attack by natural enemies. I also would appreciate hearing personal accounts or receiving images of parasitism or predation on either of these two silkmoths. If you are able to assist in anyway, or have an interest in the results of my studies, please contact me at Ben Olsen, Department of Ecology & Evolutionary Biology, University of Connecticut, Storrs, CT 06269, benjamin.a.olsen24@gmail.com 544

WANTED: Observations, photos, specimens needed of the spotted tussock moth, *Lophocampa maculata*, from all areas of North America. I am trying to define the present range of this species in the far north of Canada and the desert southwest in particular. I especially need data from Pacific coastal populations: San Francisco, CA to Southern Oregon and Vancouver, BC to Juneau, AK and the Southeast: GA to PA. Contact Ken Strothkamp, Lewis & Clark College, (kgs@lclark.edu) for more information. 544

WANTED: I am making a video of *Hyles lineata*. Although I cannot afford a high speed video camera, I would like to include some footage of my favorite moth hovering. If you would be willing to share a few seconds of a white lined sphinx moth hovering, I would very much appreciate it! Thanks! Richard Grossman, richard@population-matters.org 544

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Butterfly sampling along the Yellow Brick Road: An adventure to LepSoc 2012

Mark Walker

5062 Nighthawk Way, Oceanside, CA 92056 Mark.Walker@ga.com

Each year the urge to sample species diversity in new and potentially unexplored areas compels the avocational field Lepidopterist to make plans for adventure. With gas prices escalating and precious little time left after fulfilling work and family responsibilities, the opportunities to spend extended time in the field are increasingly rare. The avocational Lepidopterist must therefore pick and choose carefully, juggling cost and time constraints with the uncertainty of weather and estimated flight times of target species. If the Lepidopterist can swing one or two week-long trips in a year, they are doing well.

Fortunately, each year also welcomes a new venue and location for the annual meeting of the Lepidopterists' Society. Yes, it is true that attendance at the week-long meeting requires the same logistical challenges and scheduling nightmares as the planning of collecting adventures, but with the LepSoc meeting you can actually "dispatch three specimens in a single jar". First, you can come together in fellowship with others who share your passion. This cannot be understated, as the pool of characters, imagination, and experience in all things relating to Lepidoptera encountered at an annual meeting of the LepSoc is second to none (the Friday BBQ is my personal favorite). Anyone who attends the annual meeting is sure to forge many new and lasting friendships; all while solidifying past relationships and cementing fond memories. Second, the attendee can listen to and share in the latest discoveries and results from research. The presented talks and papers are both intellectually stimulating and entertaining, and often result in salivation for next year's (or the next's) big adventures. The third (and best!) benefit provided to attendees of the annual meeting of the Lepidopterists' Society is the opportunities that it provides for escaping into new habitats and regional wilderness areas. Historically, the timing and location of the annual meeting is chosen specifically for this purpose. Or at least I'm content to believe so.

For me, the anticipation of attending the annual meeting of the Lepidopterists' Society provides an even greater incentive: an excuse to plan a butterfly roadtrip that fulfills dreams, passions, a need for escape, a propensity for nature, a pioneering spirit, and the desire to cross off more bugs from the butterfly bucket list. The year 2012 was no exception. In this case, as the meeting was scheduled for Denver, Colorado in mid-summer - and I am a resident of San Diego, California - I was enticed by the prospects of a many night summertime road trip along the byways connecting four of the southwestern United States. The thought of experiencing the wilderness - and especially the Lepidopteran fauna - within many counties and National

Forests of Arizona, New Mexico, and Colorado was more than sufficient for getting the juices flowing.

Not really wanting to go alone, I recruited (by strong arm) three of my four children to accompany me (Gabrielle, 21; Weiss, 8; and Savannah, 5). My lovely wife (and assistant!) could only be convinced to join us much later - and only by convenience of direct air travel to Denver. Oh well. Lord knows she's put in the miles. I guess she's spent her last "15 minutes" sitting in a parked car, waiting for me to "be back in a sec" because I'm off "briefly looking over that small hill...". Or was it into that small ravine? Anyway, I was content to enjoy the adventure with my children - anticipating their eager interest in both my hobby and great wisdom - or at least the opportunity to interact with nature. Sadly, both of my two longtime, faithful canine butterfly companions are now deceased. RIP Soki and Toby.

So the four of us embarked on our grand adventure - choosing old Route 66 as our starting point. The highways and the coyotes were calling, so the family van (if I ruin this car by chasing off-road butterflies, it will be my sixth in a row - and likely the last thing I ever do) was packed with tent, stove, sleeping bags, and entomological paraphernalia. Everything necessary for over three weeks on the road - though the middle week would be spent in luxury at the Red Lion Central Hotel in Denver. My planned path would alter a bit as the weather and Gazetteers would guide, but the overall objective remained to visit places previously unvisited and experience habitats that presented sufficient likelihood for unexpected surprises. Oh - and to arrive in time for the scheduled July 23th collecting trip to Berthoud Pass with Steve Spomer.

The final resulting trajectory across the U.S. map is shown in Figure 1 (from Google Maps), and included a few minor, but purposeful detours. Anecdotal essays made along the way are re-produced for your (hopefully) reading pleasure.

Day 1: Taking It Easy in Radiator Springs 7/19/12

I decided to depart Oceanside at 3:00 a.m. along with my three youngest children. Our choice of old Route 66 was based largely on weather - and the hopes of swinging our nets by noon somewhere in Coconino County, Arizona. We broke Needles, CA at daybreak, with the sun peaking over the eastern horizon and illuminating the great blue sky. Unfortunately, we left the great blue sky at the Arizona border. Monsoons to the south had obliterated the atmosphere with dark grey clouds - quickly turning butterfly dreams into soggy ones.

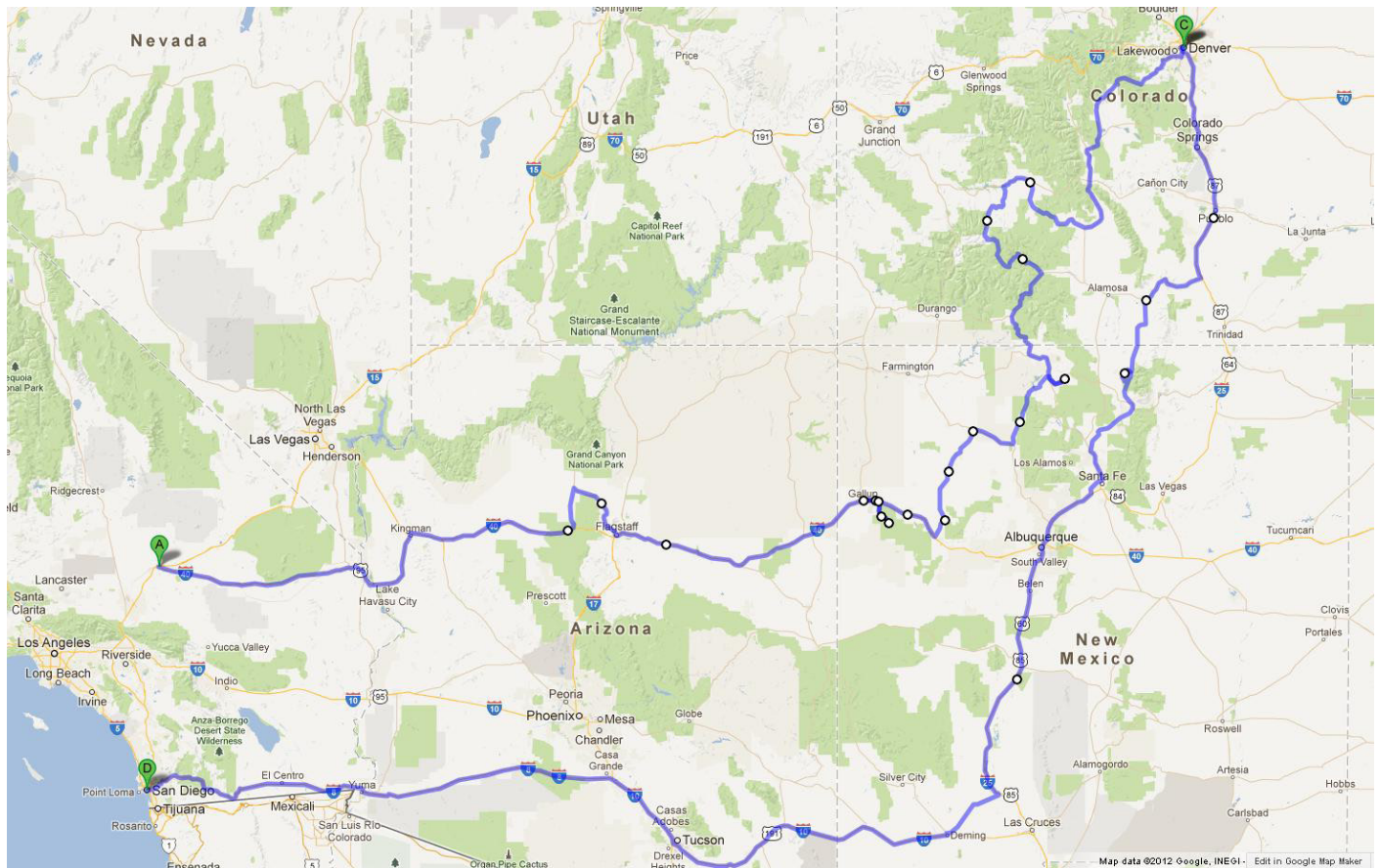


Figure 1. The Yellow Brick Road to and From Denver (in blue)

So our drive into Coconino County (right on schedule!) was not quite what I had hoped, but instead of worrying or whining, I decided to relax and instead directed my attention to making the trip as enjoyable as possible for my three children - who were, for some reason, not appearing as distressed over the weather or the consequence of not chasing butterflies. I had been working long hours away from home the previous week in New Jersey, and desperately needed to spend some quality time with my children. A reprieve from butterfly collecting could not be all that horrible - even though these days it seems to be the rule rather than the exception.

As we approached Williams, AZ, I explained to my children that we were driving on the very Interstate that bypassed all the wonderful little towns that dotted old Route 66 - just like Radiator Springs in Disney's animated feature "Cars" - and immediately their interests peaked.

"Hey Dad - I recognize those mountains from the movie", my son Weiss remarked. He was right! The animators had clearly been here. "Yes, so you'd better be on the lookout for that Tow Mater" I replied.

Suddenly I realized that we were going to be driving just an hour from the Grand Canyon, and with perpetual cloud and rain cover, there was absolutely no reason whatsoever that I shouldn't entertain the thought of introducing the

World Wonder to my adorable children. I veered off the Interstate heading north, excited about how excited my children were going to be when they approached the South Rim for the very first time.

Just before reaching the park entrance, my eyes took notice of some odd colored patches of terrain. Sunlight! A small break in the cloud cover allowed the sun to peak its way through - all the way to the ground (imagine!). I wondered if perhaps there wasn't enough heat radiation to prompt something to fly - and so I found a National Forest road that provided decent access.

"Dad! What are we doing?!" The reaction was immediate.

"I know", I beamed, "Isn't it great? There's some sunshine!"

What I got was groans. Oh well, I knew in my heart that as soon as we started vouchering butterflies - my little troopers were going to be just as excited as I was at the prospects of butterfly study.

We walked among the pine and juniper for about an hour and managed to kick up exactly five butterflies. Two were *Colias eurytheme*, one was a distinctive Melissa Blue, another is a large unidentified pale *Phyciodes*, and the fifth (which my son Weiss personally discovered) was the smallest Reakirt's Blue I've ever seen. The sun popped

out a few times and before long, we were all sweating profusely. "OK," I quirked, "It's time to go".

No complaints - who would've thought?

As we walked up to the edge of the South Rim, my children were predictably astonished. "It's Radiator Springs," they chimed. Well, yeah - I guess it is. We enjoyed the walk and



Experiencing the South Rim – 7/19/12

view for well over an hour and then combed the parking lot for any new license plates ("There's Connecticut!" Weiss shouted). Finally contented, but not really wanting to leave the fantastic view, we reluctantly made our way back to the car and on towards Flagstaff.

The clouds recovered and were once again producing precipitation. However, as the road towards Flagstaff climbed a bit higher (~8000 feet), I thought I saw a white butterfly dodging the raindrops and taking nectar at some yellow composites along the roadside. I abruptly pulled over at another National Forest Road to take a closer look.

"Ahh, Dad!" they all moaned.

You get the picture. "I'm just going to check things out a bit – give me a second". I was a broken record. This time they only glared. "Uh, I thought I saw a butterfly", I explained. If my family had a nickel for every time they heard me say that.

But I did see a white butterfly - in fact, there were dozens of them flopping high among the pine trees. I finally chased one down, but had already figured out that these were *Neophasia menapia* - Pine Whites – which were apparently having a good flight and not at all discouraged by the unfavorable weather. I checked some of the rain puddles and saw large numbers of dead *Neophasia* - apparently lured to their death by the collected moisture - sent perhaps by some unseen Sirens of the Pines. At one point, an immaculate female with darkly suffused ventral veins and bright reddish-pink borders landed some 12 feet up in one

of the pine trees. I admired it quietly and without reaction, but before I knew it - my 8 year old son had snapped together five sections of net pole. "Here you go, Dad."

I was amazed. I lifted the extended pole and in five seconds with little effort had swept the gorgeous girl *menapia* into my net bag. "Well done, Son". I was quite proud.

It was approaching dark when we pulled into the cheap motel in Winslow, Arizona. So much for setting up a tent. I explained to my oldest daughter that this was the town she may have heard about from the Classic Rock station. After we parked, I glanced around for any signs of the girl in the flatbed Ford, but she must have moved on to greener pastures. Oh well, it was nice to Take it Easy for a change. We'll see what the morrow brings.

Day 2: The Long Drive

I aroused the troops early again the next morning since we were going to lose an hour at the New Mexico border. Time was a concern because we faced a long drive – further exacerbated by the fact that I had chosen a mostly unpaved route that would take us northeast from Interstate 40 through a big swath of the mighty Navajo Nation.



Navajo Nation – 7/20/12

Interestingly, our route would actually retrace the first portion of the sorrowful Long Walk of the Navajo (1864), when the mighty nation was first and forcibly pushed from Arizona into New Mexico.

Our early start was also required if we had any intentions of butterflying within the nearby National Forest areas that are linked together by the Continental Divide. I was counting on getting into such areas while the weather was favorable, since they might provide us with some interesting opportunities for Lepidopteran encounters. Racing the weather always creates some anxiety, but I was pleased to find the sun shining brightly as we detoured south into the Cibola National Forest just east of Gallup, N.M. I picked a route that led us first through historic Ft. Wingate, which among other things was one of the places used to intern the Navajo refugees during their fateful walk.

From Ft. Wingate, the forest roads slowly climb uphill. At these lower elevations, the Cibola NF consists mostly of mixed deciduous trees, but as the elevation increases (to above 9000 ft.), the deciduous trees are quickly replaced by conifers. The slopes are gradual, characterized by patchy meadows and dry open forest, making the whole area look a lot like the land of Ben, Hoss, and Little Joe Cartwright.

Though the weather continued to please, I was surprised and a little disappointed at the paucity of butterflies. There were occasional *Colias eurytheme*, some *Polygonia*, and a few *Vanessa*, but no sign of *Speyeria*, and very little else to prompt any abrupt changes in velocity. But a good Lepidopterist never accepts an in-vehicle assessment of Lepidopteran diversity, and so at the first sign of habitat diversity, I convinced the troops to hop out for a closer look. As usual, patient and persistent bushwhacking through brush and bramble led to some interesting discoveries. Perhaps the most significant for us was a decent population of what was a stunning phenotype of *Plebejus icarioides* - appearing in only one location where there was an abundance of foodplant. This is probably the same as subspecies *bucholzi* known from northern Arizona, but finding it was nevertheless satisfying. Other butterflies from these higher elevations included some fresh *Callophrys siva* and *Plebejus lupini*. Otherwise, and despite the favorable weather, there was very little on the wing.

Not wanting to give up our quest entirely, we decided to drive a bit lower in elevation. This proved to be a fruitful choice, as the butterflies at mid-elevation in McKinley County were in fact abundant. Here the butterflies reminded me very much of the butterflies of southern Arizona, with a good list of familiar species including *Papilio bairdii*, *Papilio multicaudata*, *Papilio philenor*, *Zerene cesonia*, *Danaus gilippus*, *Poanes taxiles*, *Heliopetes ericetorum*, *Phyciodes pratensis*, *P. mylitta*, *Limenitis weidemeyerii*, and *Adelpha eulalia*.

By 1 p.m. we left McKinley County and headed north past I-40 into Indian Country. Suffice it to say that, while the scenery is spectacular, it probably isn't the smartest thing to do to assume you can just navigate your way through the maze of unnamed and unpaved roads that meander through this part of the Navajo Nation. If not for a compass and some dumb luck, I might still be wandering about the arid landscape of Sandoval County, N.M. Through much of the afternoon we were completely alone, clueless as to which way to turn at each consecutive sign-less junction. Fortunately, there were some amazing things to see along the way, so I passed the whole thing off to my children as if it were completely intentional. Based on the pitch of raised eyebrow, I could tell that the occasional passing Navajo was not so easily fooled. Oh well - all we passed were friendly, even if completely perplexed.

As it turns out, the Navajo were hardly the first Native Americans to occupy this land. Ancestors of today's Pueblo Indians occupied much of the area dating all the way back



Lost in Sandoval County, N.M. - 7/20/12

to 1000 A.D., with some of the ancient communities quite vast and densely populated. In fact our meandering route took us within just a few miles of the amazing Chaco Canyon (though most normal people access it from the OTHER side), one of the most extensive of the ancient sites. Chaco is full of ruins, rock art, and other historic sites, and well worth the visit - as long as you don't try to do it blindfolded.

It was early evening when we finally emerged from Navajo land, mostly unscathed, and this time we chose a paved road heading northeast into Jicarilla Apache lands. We were hoping to camp within a small patch of Sante Fe National Forest just south of Vado Lake. We scouted out a reasonably flat and open area, and the troops assisted me in cooking supper and setting up camp. I was excited to find that, as moved about camp, we continued to kick up butterflies - including *Colias eurytheme* and *Euptoieta claudia* - which were starting to settle down in the low grasses. It had been a long day and a long drive, but we were now over half way - and sitting on the doorstep of Colorado.

Day 3: Chama and the Champion Chasers - 07/21/12

Like their mother, my children are not naturally early risers, but with a little persuasion, we were able to break camp early. By 9:00 a.m. we were already driving around Lake Vato, under gloriously blue skies, listening and singing along with a charming Oldies radio station disc jockey out of Chama, N.M. Though my children were good and ready to get to Colorado, I wasn't quite finished with New Mexico. So I decided to veer east of Tierra Amarilla on highway 64, heading into Kit Carson National Forest on the road that goes to Taos. This road ascends rather quickly, reaching elevations above 9000 feet and surrounded by towering peaks at above 11,000 ft. As we drove higher, the blue sky predictably became obscured by clouds, and I could tell that our butterfly opportunities were quickly going to be severely limited. As soon as I began seeing *Speyeria* and *Cercyonis* flopping across the highway, I made a quick decision to stop and smell the roses.

"It's butterfly time!", I exclaimed, although I think the children were dozing – in spite of the Big Bopper's amorous blurting about Chantilly Lace, along with my accompaniment, and the friendly rants of my now familiar Chama D.J. The enthusiasm was mixed, as I guess my children were somewhat reluctant to pile out of the van on the busy mountain highway all while facing the ongoing threat of lightening and torrential downpour. Within a few minutes, however, the juices got to flowing – and before I knew it, all three of my children were happily taking turns swinging nets at the plentiful butterflies and moths.

In fact, they were so content that Dad had trouble getting his own turn – making it quite difficult to ensure that all sighted species were properly vouchered. Nevertheless, the random and reactive stop proved to be quite prolific, producing at least three species of *Speyeria* (including *cybele*, *atlantis*, and *mormonia*), along with good numbers of other species including fresh *Polygonia gracilis*, *Cercyonis oetus*, and *Colias eurytheme*. The Frits were sailing by at a considerable rate, making it easy for the kids to practice the art of butterfly ninja, but alas the weather didn't hold and soon the rains came tumbling down. This sent the young Lepidopterists scurrying back to the van, but rather than calling it a day, I chose to press on eastward a little farther, driving still higher in hopes of promising habitats and breaks in the weather.

Heading east, highway 64 continues rising, revealing large meadows with lush vegetation. With intermittent sun and rain, I convinced Weiss to join me once again with his butterfly net (the girls would have no part of it). Here the butterflies were once again prevalent, with good numbers of *Colias alexandra*, *Plebejus glandon*, and *Speyeria mormonia*. Weiss surprised me yet again, holding up his net:

"This is different – what is this?", he asked.

It was *Euphydryas* – I'm guessing *anicia*, as it looks to me to be a cross between ssp. *capella* and ssp. *magdalena*. Awesome. I had walked the meadow with eagle eyes for almost an hour, back and forth, but it took an 8 year old boy with an awkward swing to come up with something special.

We ate lunch under a lean-to, hiding from the steady rain, and though I resisted, the children finally talked me into turning the van around and heading towards Colorado. We ate ice cream in Chama, briefly admiring the frenetic swap meet we heard about all morning on our Oldies station, but soon found ourselves back on the highway and crossing into Colorado. The children were elated. "At last", they sighed.

Unfortunately, the weather also followed us into Colorado, making it difficult to find a suitable camp site – or do any more butterflying. We pressed on, under foreboding skies, soon arriving at Wolf Creek Pass just in time for a short break in the weather. Accommodated by brief stints of sunshine, I pulled into the vista parking area, waking up the now sleeping children.



At Last! Weiss entering Colorado for the First Time – 7/21/12

"Who's ready for a short walk?", I asked, but was only able to talk my two youngest children into obliging me out into the inclement weather. We headed on foot southeast uphill through a vast sloping meadow, still wet from the rain, and soon noticed the many perching *Parnassius smintheus*, holding motionless on the various meadow plants. This was encouraging, and so the short walk once again turned into a longer one. We soon found other species, including *Pieris napi* (surprisingly fresh), *Plebejus glandon*, *Colias scudderi*, and *Colias meadii*. We might have kept climbing even higher, had not the weather turned bad again, only this time it appeared as a ferocious hailstorm that sent us running for our lives back to the car.

The hail was strong and quickly turned the road as white as snow. This made the downhill ride down Wolf Creek Pass even more treacherous. The van slid noticeably during each hairpin turn, and so I kept the velocity down to about 10 mph., wondering if there was any chance in finding a campsite before dark. We finally arrived in South Fork, a sizeable town, but with no prospects at all for the night.

My son was the first to suggest it: "We're going to stay in a motel, right?" he stated matter-of-factly. "You can't expect us to camp in this weather..."

The wisdom of children. I knew that Weiss had already spotted the motel – with swimming pool – on our way into town, but clever of him to make it an issue of parenting.

"Perhaps, but it's going to cost you", I responded.

"What?", they asked.

"Tomorrow", I told them, "we're all going to perform in the Butterfly Olympics."

Day 4: Peak Bagging in Fremont's Colorado – 07/22/12

On Sunday, July 22, just one day before we were to report to Denver for the start of the Annual Meeting of the

Lepidopterists' Society, and one day after being chased off Wolf Creek Pass by hail, we crawled out of our comfortable motel beds and threw open the curtains. Blue sky! With favorable weather, I decided we'd make our way up into the highest reaches of this part of Colorado – the same part of Colorado where all the famous mountain men first made their mark. People like Old Bill Williams, Kit Carson, Jim Bridger, John Fremont, Thomas Fitzpatrick, and Doc Newell. Besides fur trapping, carousing, and Indian fighting, these men strove to open new roads between the old frontier and the new. Often stubborn in their attempts, folks like Fremont insisted there was a way even when there was no way. In one instance, he forced some otherwise wise men of the mountains to find a way through in the dead of winter – during one of the worst snow storms in recorded history. Several died - and some who survived have long been accused of resorting to cannibalism. Anyway, I found it interesting as I made my breakfast on Saturday that the spot that finally defeated them was just a stone's throw from where we were in South Fork.

So I decided to take the children up to Clear Creek Pass, on the border of Hinsdale and Mineral Counties, from where we could try our luck at some serious butterfly trekking. The steep hike to Snow Mesa from Clear Creek Pass provided us with some spectacular vistas of the Continental Divide in every direction. To reach Snow Mesa, we would have to continue up this steep grade for over 3 miles – reaching an elevation of 12,500 ft. This choice was purposeful, though, as the trail provided access to multiple habitats – including alpine meadows and talus fields. It was time to get serious, demonstrating some real mountain man courage, and seeing if we couldn't successfully chase a few arctic and alpine butterflies without resorting to cannibalism.

Our hike up to Snow Mesa was long and arduous, but all three children accomplished the feat with great courage, positive attitude, and very little complaining. True, I bribed them a bit with treats I had packed ahead of time, but I have plenty of examples to share where this technique



We made It! Snow Mesa at 12,500 ft. – 7/22/12

was less than successful. We spent some considerable amount of time on top, as well as along the gullies below the biggest talus fields, looking for some special butterflies. The weather ended up holding out until after we started our descent, providing some refreshing rain as we finally scrambled to the car. We had seen and chased a great many butterflies, including *Boloria chariclea*, *Plebejus glandon*, *Speyeria mormonia*, *Parnassius smintheus*, and *Erebia callias*, but my son Weiss once again delivered the killer:

“What’s this?”, he asked after running along the base of the talus, holding the folded net up to my squinting eyes.

This time he had vouchered an immaculate female *Chlosyne damoetas* – the only one I would see all week in Colorado.

“Weiss – you are the man!”, I proudly announced.



Does it get any better than this?

Our 7 mile hike to Snow Mesa and back was truly one of our more memorable experiences of our adventure to and from LepSoc 2012. The children all enjoyed swinging the net, and were noticeably impressed by the spectacular views, majestic peaks, and variety of both habitats and butterfly species. I felt that our day in Mineral County was a wonderful prelude to our upcoming butterfly week in Colorado, providing a mere glimpse of what was yet to come. From Clear Creek Pass, we pretty much drove straight through to Denver, stopping only briefly for gas and bathroom. When we arrived at the Red Lion Inn in Denver, we were ready to stop – seeking the other nomads arriving from all corners of the earth to join in fellowship and comparing of notes. I can hardly wait for next year.

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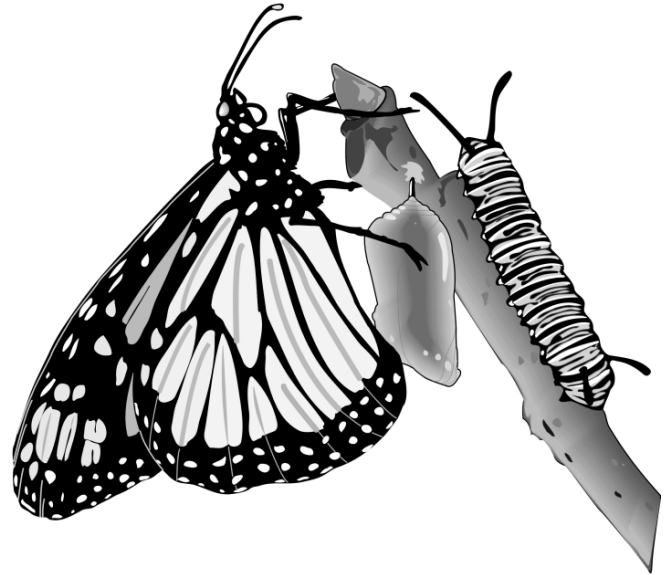
Metamorphosis

Julian Donahue

Bowe, John J., M.D. (18 Nov. 1922 – 23 March 2012), in Ridgewood, New Jersey. After receiving his M.D. degree from Cornell University Medical College in 1946, Dr. Bowe specialized in plastic and reconstructive surgery. He had a lifelong fascination with natural history, and began collecting butterflies at the age of 14, and continued to collect wherever his travels took him. He was an active member of The Lepidopterists' Society for 61 years, from 1952 until his death, and was also a member of the Newark Entomological Society. He was a research associate of the Florida State Collection of Arthropods, to which his collection of 10,000 specimens was donated. Dr. Bowe was predeceased by his wife, Ruth Hennessey Bowe, M.D., in 1998, and is survived by five children and 11 grandchildren. [information from his son, Donald J. Bowe, and the 27 March 2012 obituary published in The Record/Herald News (Woodland Park, New Jersey)]

Smith, Neal G., Ph.D. (1937-2012), emeritus staff scientist at the Smithsonian Tropical Research Institute in Panama, of a progressive neurodegenerative disease and *Pseudomonas* lung infection. Neal first arrived at STRI in 1963, after earning his Ph.D. in ornithology at Cornell University. An advocate for keen natural history observation, he was a first-class naturalist with an encyclopedic knowledge of tropical organisms from insects to *Peripatus* to birds, as well as the early history of scientific life on Barro Colorado Island. Dr. Smith had been a member of the Society from 1980 through 1990. [based on information submitted by Dr. Annette Aiello]

Wilkinson, Ronald Sterne, Ph.D. (16 Feb. 1934 – 22 Feb. 2009). A native of Chicago, Illinois, Ron earned his B.A. (English, 1960) and Ph.D. (American intellectual history, 1969) at Michigan State University, where he was also a rare book librarian at the university library. While at Michigan State Ron spent many nights blacklighting and sugaring with fellow lepidopterists Mogens C. "Mo" Nielsen, John H. Newman, and Julian P. Donahue. Wilkinson and Donahue also shared an interest in publishing: as a graduate student Donahue was the founding editor of *The Michigan Entomologist* (now *The Great Lakes Entomologist*) in 1966, but Wilkinson assumed editorship of that journal with the third number, and continued as editor from 1966 through Vol. 3, No. 3 in 1970. In 1968 the two of them formed a publishing partnership, Entomological Reprint Specialists, but in 1970 Ron assumed a position as science historian at the Library of Congress while Donahue moved to Los Angeles to become a museum curator, having bought out Ron's interest in the company. At the Library of Congress Ron was a senior science specialist in the Manuscript and Science Divisions; among his numerous accomplishments, he helped the Library acquire the papers of Sigmund



Freud and Alexander Graham Bell. Ron was a prolific writer in the field of the history of science and the history of lepidopterology. An avid anglophile and bibliophile, he had close relationships with British booksellers like E.W. Classey, and amassed an impressive library of antiquarian natural history books that was bequeathed to the American Museum of Natural History. Ron suffered from Parkinson's Disease, and died of natural causes at the age of 75 in his home just a few months after retiring from 38 years of service at the Library of Congress. Dr. Wilkinson had been a member of the Society from 1965 through 1990. [Julian P. Donahue and The Washington Post, 23 Feb. 2010]



A charaxine nymphalid feeding at bait at the Westminster Butterfly Pavillion in Westminster, Colorado. (Photo by Charlie Covell during the 2012 Lep Soc meetings in Denver, CO)

Lepidoptera of a fen in southeast Iowa

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Left: Soapberry Hairstreak, *Phaeostrymon alcestis*, Lake R. C. Longmire, Garvin County, Oklahoma, 17 May 2007. Right: Western Pine Elf, *Callophrys eryphon*, Picnic Springs Campground, North Cave Hills, Custer National Forest, Harding County, South Dakota, 28 May 2004. (Photos by Bryan Reynolds; check out the Butterflies of the World Foundation website [www.botwf.org])

Rarely seen Butterflies visit the Northwoods

Allison Snopek Barta

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March of 2012 will go down in the history books as the warmest March ever here in Minnesota. Temperatures soared above 80 degrees F for five consecutive days, breaking records set in 1910. With those temperatures, my "On the Hunt for Northwoods Butterflies" research project in Cass County resumed unexpectedly early, with the sighting of the Compton Tortoiseshell (*Nymphalis vau-album jalbum*) on March 17th. Discovering this broke the earliest recorded date of April 10 noted by Larry Weber (2006), I soon realized that the 2012 Lepidoptera season could prove to be an exciting and important summer of observations. Shortly after sighting the Compton Tortoiseshell, other species appeared, also breaking long-standing records. These included the Spring Azure (*Celastrina lucia*) on April 2, 20 days earlier than the record. The Eastern Pine Elfin (*Callophrys niphon*) was found on April 24th and the Hoary Elfin (*Callophrys polios*) on April 29th (average date of both May 7th). The Western Tailed-Blue (*Cupido amyntula*) emerged on May 3 (average date – May 15th) and the Harvester (*Feniseca tarquinus*) on May 7th (average date May 15th).

Along with the local species appearing early, much to my surprise I began to see southern migrant species arriving early and in unprecedented numbers. In a lifetime of butterfly observations, it has always been a treat for me to come upon the Common Buckeye (*Junonia coenia*). Until this past summer I have only seen a half-dozen of them, three of which I saw and photographed in the summer of 2011. This year my first sighting of this beautiful butterfly was on May 18, nectaring on lilac, six weeks before its average date (John Weber 2005) in years that it occurs at all. With that excitement, I continued to search, record, and photograph 28 sightings of it, ending with a September 3rd observation. I had the opportunity to capture numerous beautiful photos.

I discovered another infrequent visitor, the Variegated Fritillary (*Euptoieta claudia*), on May 14th while photographing Hoary Elfin in a blueberry patch. At first, I could not recognize the butterfly because it was worn out, frail, and barely flying. Checking John Weber's records (2007), I found that this sighting was four weeks early! I thought by chance this butterfly had lived through our warm winter, surely it could not be arriving here from the south this early. In the next few days, much to my surprise, I began to see large numbers of Variegated Fritillaries everywhere in my observation sites. It even was in my yard, and chose my perennial and vegetable garden as a location to produce a second brood. By luck, on June 7th, I observed and photographed one laying eggs, and then found a chrysalis (see photo) while weeding the garden on July 10th. By good

fortune, I saw the second brood emerge from the garden on July 19th.

With these unusual sightings, I decided to email Les Ferge, Season Summary Zone Coordinator for the Midwest. He was not surprised to learn about my observations because he was also seeing a number of unusual migrant species including the Common Buckeye and Variegated Fritillary in Keweenaw County, Upper Michigan.

I was also fortunate to come upon a Little Yellow (*Pyrisitia lisa*) nectaring along the roadside right here on Oak Point Rd. on June 9. It too is a rarely seen species that migrates from the south. Usually if you are lucky to find one it would be around July 1st, making this sighting three weeks early. I did see one again on July 1st. Because of their small size, light yellow color, and frequent flight, they are extremely difficult to photograph.

Finally, my prize of the summer was a Dainty Sulphur (*Nathalis iole*) on July 15th. This is the smallest of the Sulphur butterflies, being only $\frac{3}{4}$ - $1\frac{1}{4}$ inches. No wonder my camera had a difficult time getting a few shots before it disappeared in the grasses of that windy day. The Dainty Sulphur hasn't been reported in northern Minnesota for eleven years, last seen by local Lepidopterist John Weber.

The 2012 Lepidoptera season proved to be an exciting time. With climate changes, including extremely warm temperatures, many species arrived early to the "On the Hunt" research project study sites in Cass County, Minnesota. Rarely occurring species such as the Common Buckeye and Variegated Fritillary were unusually bountiful in the Northwoods. What will 2013 bring?

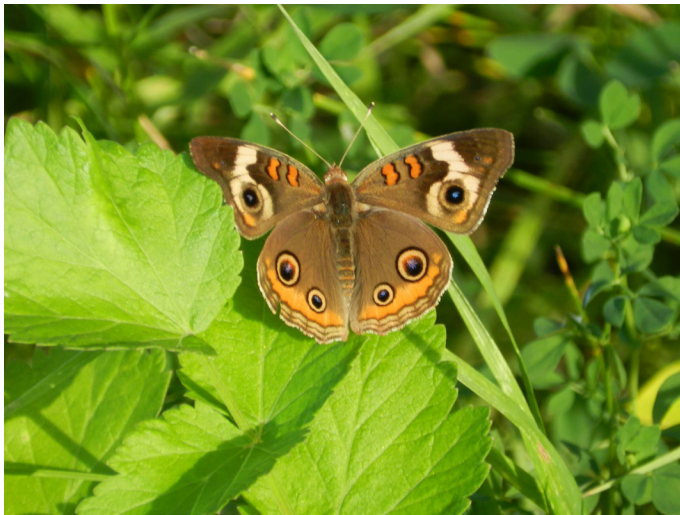
Acknowledgements

The author thanks John Weber for encouragement and sharing his scientific knowledge, and data. Her son, Kevin Barta for assisting with camera skills, & Les Ferge for reviewing this article.

Literature Cited

Weber, Larry. 2006. Butterflies of the North Woods (Second Edition). Kollath + Stensaas Publishing (Duluth, Minnesota) 280 pages.

All photos on the next page are by Alison Barta, and taken in Cass County, Minnesota.



Buckeye (*Junonia coenia*)



Buckeye (*Junonia coenia*)



Little Yellow (*Pyrisitia lisa*)



Variegated Fritillary (*Euptoieta claudia*)



Variegated Fritillary (*Euptoieta claudia*), ovipositing



Variegated Fritillary (*Euptoieta claudia*), pupa



Dainty Sulphur (*Nathalis iole*)

Photos from the 2012 joint meeting of the Lepidopterists' Society and the Societas Europaea Lepidopterologica (SEL), Denver

This page, Ranger Steve Mueller; page 153, Charlie Covell; unless otherwise specified



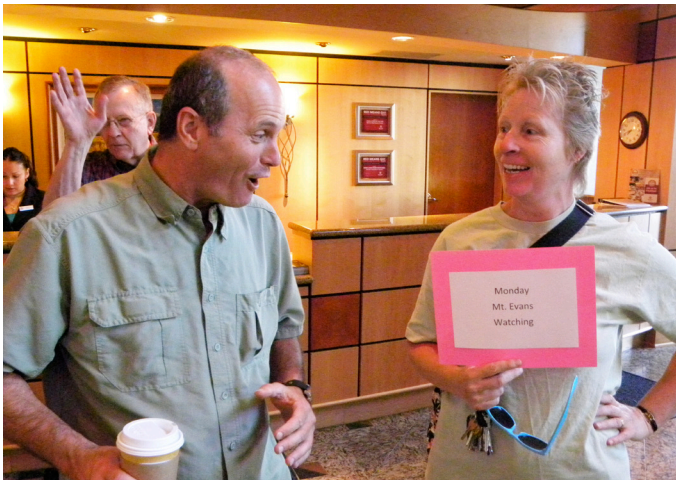
Kevin Tuck and Robert Hoare



Todd Stout and Steve Spomer



Jo and David Nunnallee



Steve Armstead and Josie Quick, excited about butterfly watching on Mount Evans. Don Wright in the background.



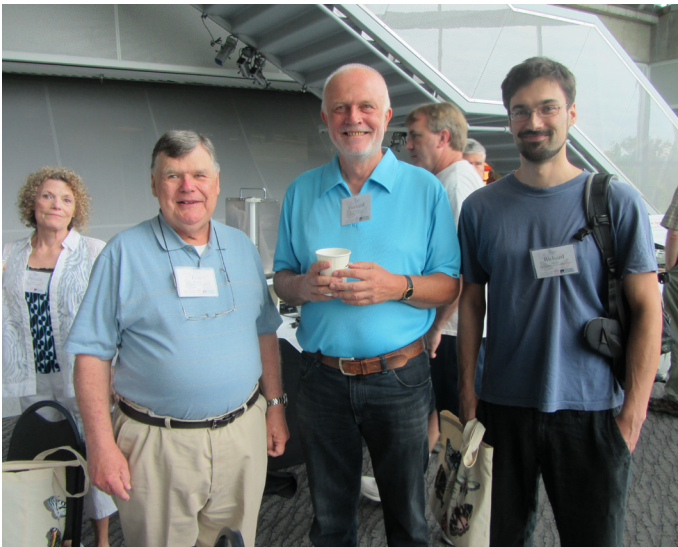
Daniel Rubinoff and Sally and Dave Warren (photo by Andrew Warren)



Kim Garwood and Steve Daniel



Francesca Ponce, Cassandra Romero, and Ga-Eun Lee (photo by Andrew Warren)



Pat and Eric Metzler, Gerhard Tarmann, and Richard Mally. James Adams in background.



Fred Stehr, with net in hand



Ken Bliss, Suzette Slocomb and Charlie Covell



Leroy Koehn talking traps to Fred Stehr.



Christi Jaeger and John Brown



David Bettman and Kevin Tuck

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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 and/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:

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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
55 1 Spring	Feb. 15, 2013
2 Summer	May 20, 2013
3 Fall	Aug. 15, 2013
4 Winter	Nov. 15, 2013

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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Saturnia mendocino, California: Nevada Co., Nevada City, 2500 ft., reared on *Arctostaphylos viscida*, eclosed April 6, 2011. (Photo by Michael Collins)



A



B



C



D

Yucca Giant-Skippers, *Megathymus yuccae*, Chickasaw National Recreation Area, Murray County, Oklahoma, 31 March 2012. A: Courting, B: Mating, C: Ovipositing, D: Egg. (Photos by Bryan Reynolds; check out the Butterflies of the World Foundation website [www.botwf.org])