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NEWS OF THE LEPIDOPTERISTS' SOCIETY

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Inside:

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Volume 51, Number 4
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Contents

Issue Date: December 5, 2009 ISSN 0091-1348

Front Cover:

Mnasilus allubita, a new species for the USA. See article opposite page. Photo by Martin Reid.

A new grass skipper for Texas and the United States: *Mnasilus allubita* (Hesperiidae: Hesperiinae: Moncini)

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During late October and the first half of November, 2008, a number of butterflies rarely seen in the United States were documented in the Lower Rio Grande Valley (LRGV) of southern Texas (Bordelon 2009). The senior author was fortunate enough to have been in the LRGV at the time, and documented the swallowtail *Mimoides phaon* (Boisduval, 1836) for the first time from Texas and the United States, on October 23rd (Reid 2008). Two weeks later, on November 8th, the senior author arrived at the NABA Butterfly Park, Mission, Hidalgo County, at lunchtime, and worked the various plantings, photographing a few uncommon species including *Marpesia petreus* (Cramer 1776), *Doxocopa pavon theodora* (Lucas, 1857) and *Syntomeida melanthus* (Cramer, 1780). Shortly before 2 p.m., Reid noticed a fairly dull, brown grass skipper he did not recognize, feeding on Crucita (*Chromolaena odorata*), and proceeded to obtain a series of photographs.

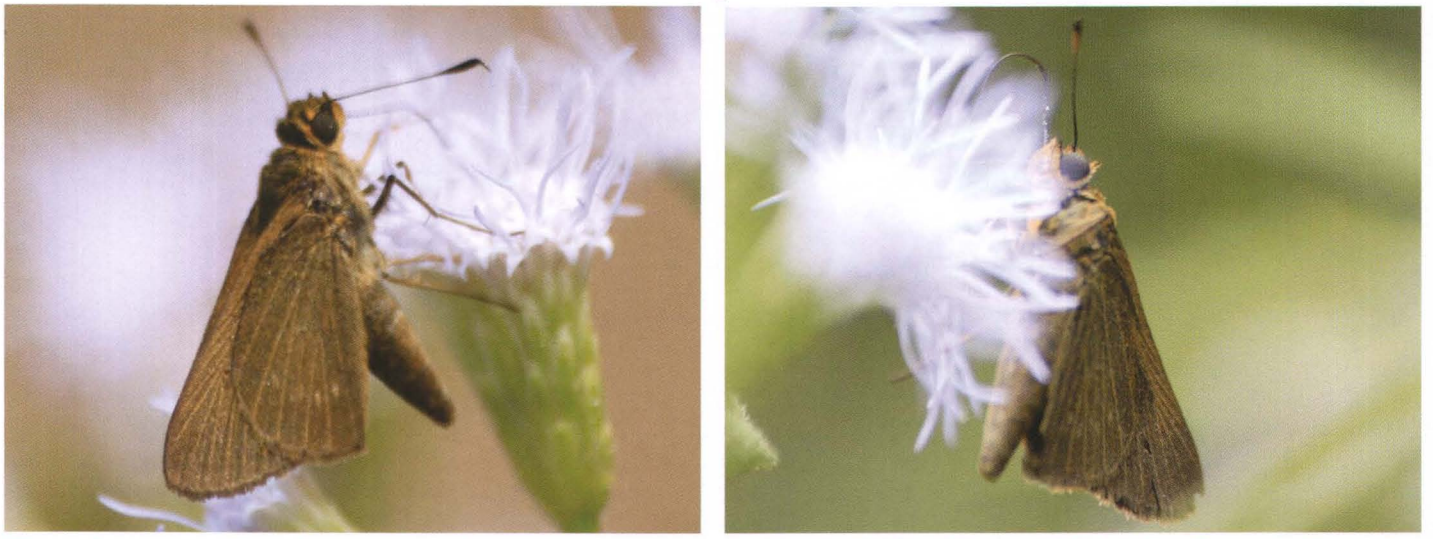
That evening, Reid attended the banquet of the Harlingen Bird Festival in nearby Cameron County, where he showed his photos of the skipper (on his small camera LCD screen) to a number of experienced south Texas-based amateur butterfliers. All, including Reid, were mystified by the skipper, although Reid noted a vague resemblance to *Euphyes vestris metacomet* (T. Harris, 1862), a taxon widespread in the eastern United States but rare in the LRGV. Upon returning home, Reid reviewed the photos on a large screen, whereupon he remained unconvinced by his tentative determination as *E. vestris*, but failed to pursue the issue further at that time. On November 14, 2009, more than a year later and coincidentally on the evening of the 2009 Harlingen Bird Festival banquet, Reid was browsing that particular folder of images and paused to look once again at the photos of this skipper. After reviewing numerous images of all subspecies of *E. vestris*, Reid decided to seek another opinion, and emailed the three best images to the junior author, who replied almost immediately that the skipper was clearly a male *Mnasilus allubita* (Butler, 1870), a taxon previously unrecorded from Texas or the United States (Pelham 2008).

Mnasilus allubita (English names used include Butler's Skipper and Greenish Brown Skipper) is widely distributed from Argentina, Paraguay and southern Brazil (e.g., Hayward 1947b, Evans, 1955), through most of South and Central America, to the northern Mexican states of Nayarit and Tamaulipas (Llorente et al. 2004, Jim Brock pers. comm. 2009). Adults of *M. allubita* are frequently found in disturbed habitats at low elevations (usually below 1000m), including roadsides and weedy areas in orchards, as well as wetland habitats (ADW pers. obs.).

Life history information for *M. allubita* is available from Guyana, Brazil and Costa Rica. The syntype specimen of *Vehilius norma* Dyar, 1917 (a subjective synonym of *M. allubita*; see Mielke 2005) was "bred from larvae on *Paspalum gracile*; a water-grass" by H. W. B. Moore (Dyar 1917). This foodplant record (for *V. norma*) was repeated by Hayward (1947a). Moss (1949) reported *Mnasilus allubita* from Pará, Brazil, where he noted it was "bred from grasses" (this record was repeated by Silva et al. 1968). Recently, several individuals of *M. allubita* have been reared at Area de Conservación Guanacaste in Costa Rica, where they utilized *Leersia hexandra*, *Oryza latifolia*, and an undetermined grass (growing in disturbed areas) as larval foodplants; excellent images of reared adults and last-instar larvae are presented by Janzen & Hallwachs (2009).

While bearing some resemblance to a number of skipper taxa, several features are useful in determining adults of *Mnasilus allubita*; these are best observed on individuals in fresh condition. The ground color below is pale brown, often with a somewhat greenish cast. Hindwing veins, as well as portions of forewing veins not covered by the hindwing when the skipper is at rest, are slightly paler than the ground color, providing a subtle contrast against the slightly darker ground color. The underside of the hindwing possesses a weakly-developed submarginal spot band, usually consisting of five short streaks centered between wing veins from cell CuA1 to cell Rs; in some individuals a few of these streaks are apparent, and rarely,

Mnasilus allubita in Texas: A New Species for the United States



These photos, as well as the one on the front cover, were taken by Martin Reid in Mission, Hidalgo Co., Texas on November 8, 2008. An email consultation a year later with Andrew D. Warren, who immediately gave the identification as a male *Mnasilus allubita*, added a new species to the list of butterflies for the United States.

Phyciodes pallescens in Texas: A New Species for the State

Fig. 1) *Phyciodes pallescens* female, dorsal, Madero, Hidalgo Co., TX, Nov. 3, 2009 leg. J. McDermott. **Fig 2)** Same specimen as figure 1, ventral. **Fig. 3)** *Phyciodes phaon* female, Mission, Hidalgo Co., TX, Nov. 4, 2009 leg. J. McDermott. **Fig. 4)** Same as Figure 3, ventral.

a sixth streak is present in cell CuA2. The streak situated in cell M2 is slightly offset towards the base of the wing, with respect to the other streaks. The head of *M. allubita* is diagnostic. The third segment of the labial palpus is short and covered in black scales. This coloration contrasts with other segments of the palpus, which are largely golden above with intermixed dark scales, and golden below, intermixed with paler scales (whitish in females) and few dark scales. In lateral view, the eyes of *M. allubita* are outlined mostly with gold in males, and gold and white (below and behind eyes) in females. On both sexes, there is a break in the golden outline above the eyes, replaced by a short band of black scales. This band is also prominent in dorsal view, on live individuals and pinned specimens. Finally, when a dorsal view of a male is possible, the long, slender, black stigma centered below vein 1A + 2A and extending to the inner margin of the wing is diagnostic.

Photographs of the Texas male of *M. allubita* have been posted on the Butterflies of America website (Warren et al. 2009), together with a live female from Chiapas, Mexico, and pinned specimens from Colombia and Mexico: http://butterfliesofamerica.com/mnasilus_allubita.htm.

Acknowledgments:

We are grateful to Jim Brock for last-minute help with literature and sharing information on Mnasilus allubita *in Mexico, and Daniel Janzen and Winnie Hallwachs for sharing ecological information on* M. allubita *from Costa Rica. We also thank Dale Clark for last-minute assistance and for his expert work in preparing this note.*

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Phyciodes pallescens (R. Felder, 1869) in Texas (Nymphalidae: Nymphalinae)

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For only the second time in 51 years, the small inconspicuous species, *Phyciodes pallescens*, made a showing in the Unites States. During the fall of 2009, I journeyed on a collecting trip to the Rio Grande Valley of Texas, accompanied by my father Jim and fellow Lepidopterist Jason Cole.

At the time of our visit, numbers of species were below average, and certain normally common species like *Dryas iulia* or *Danaus eresimus* were very scarce. We planned one week of surveying lepidoptera from Starr County east to Cameron County, involving a dozen different sites. The weather maintained ideal conditions nearly the entire trip, with temperatures around 90 degrees and sunny.

On Tuesday, November 3, I observed an odd *Phyciodes* species as it was feeding on Crucita (*Chromolaena odorata*), south of Mission in Hidalgo County. At first glance, the individual looked like a odd variation of *P. graphica*, but upon further inspection, the white post-median band looked closer to *P. phaon*. However, the broken post-median band, pale ventral hind-wing, and longer wing configuration was unlike any *P. phaon* I had seen previously in Texas. Although quite aware of the Mexican species *P. pallescens*, but unaware of it's status in Mexico, I was somewhat skeptical of a stray to Texas.

After returning to Kaufman with the specimen, I closely examined the individual and consequently sent photos to Andy Warren and Ed Knudson. Both confirmed it as a female

Continued on pp. 125

Reprise: *Gonodonta* (Fruit-Piercing Moths) (Noctuidae, Calpinae) from Texas with Yet Another New USA Record from South Texas

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Introduction

This is a follow-up, of sorts, to Knudson & Koehn 2009, from the summer issue of this publication. We thought this was possibly the last word on this subject, but recent events proved otherwise. Another species, *Gonodonta nitidimacula*; new to the USA, was discovered in late October of 2009, almost jointly by the senior author and by James McDermott, in Mission, and Palmview, Hidalgo Co.,Texas. Ten days previously the authors took a perfect male specimen of *Gonodonta bidens* from a bait trap in Mission, TX; this being the first recorded from Texas since the 1950's.

Illustration of, and comments on these two species follow:

Gonodonta nitidimacula Guenee, 1852.

Two male specimens of this species were collected in late October, 2009. The first was taken from a bait trap by the senior author in Mission, TX., on the morning of 29 Oct. The second specimen was collected at blacklight by J. McDermott, in Palmview, TX, on the evening of 29 Oct.

The senior author made the correct determination, by comparison to multiple specimens from Costa Rica (Janzen & Hallwachs). McDermott made his determination based on specimen photographs by the senior author.

G. nitidimacula is somewhat similar to the previously illustrated *G. fulvangula* (Knudson & Koehn 2009). It differs conspicuously in the variegated pattern of the median area of the forewing, with dark streaks between the veins basal to the postmedial band, and in the light yellow-gray band distal to the postmedial band. As in *G. fulvangula*, it shares the compact quadrangular yellow-orange patch on the otherwise black hindwing. Both specimens are of the light form of *G. nitidimacula*; the dark form lacking the broad yellowish coloration of the subcostal area of the forewing.

There are two other species that occur in Mexico that are somewhat similar. *G. incurva* (Sepp, 1832-40), does not have a light form, but does have the dark-reddish streaks in the region basal to the postmedial band. It also has a smaller, sometimes obsolete yellow-orange patch on the hindwing, which does not reach the costal margin. *G. latimacula* Guenee, 1852 has clear-yellowish patch covering most of the median area of the forewing, extending to the base of the wing, and lacks the dark stripe basal to the postmedial band.

Gonodonta nitidimacula occurs from northeastern Mexico to Venezuela, and is also widespread in the Antilles. The larval hosts are in the Piperaceae, which does not include any native species from Texas. There are no reports of damage to citrus. (Todd, 1959).

Gonodonta bidens (Geyer, 1832)

The specimen illustrated in the previous article was a female from Ecuador. It proves to key to ssp. *tenebrosa* Todd, 1959, not *meridionalis* Todd, 1959, as previously indicated by Knudson & Koehn, 2009. Todd's subspecies will probably fall to synonyms in the revised North American checklist. The illustrated male specimen was collected by both authors in a bait trap in Mission, Texas on 19 Oct., 2009.

This is the first known record from Texas since the mid-1950's. As mentioned in the previous article, the adults can become a citrus pest at times.

Comments

During the October-mid November period in the Mission area of south Texas, no other *Gonodonta* species have been reported except for one example of *G. sinaldus* from 10 Nov., in Mission. The authors noted a moderate sized citrus orchard located about ½ mile from the Mission locality, which was in full fruit, with many oranges on the ground. We theorize that this could have attracted these moths, at least to pause for a few days on the way to wherever they were headed.

As mentioned in the previous article, there are still at least two or three more species known from Mexico that have the potential to stray into south Texas. These latest finds bring the number of species recently reported from south Texas to a total of six.

Acknowlegements

The authors thank James McDermott, for permission to publish his record of Gonodonta nitidimacula.

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1 2 3

Reprise: *Gonodonta* in Texas

1) *Gonodonta nitidimacula*, dorsal, leg. C. Bordelon, taken at bait trap on the morning of 29 October, 2009 in Mission, Hidalgo Co., TX, new to the USA. **2)** Same specimen as fig. 1, ventral. **3)** *G. bidens* taken by C. Bordelon and E. Knudson at bait trap on 19 October, 2009 at Mission, Hidalgo Co., TX. This is the first known record for Texas since the mid-1950s.

In the Interest of Stability: What is *Hesperia origenes* F. (Hesperiidae)?

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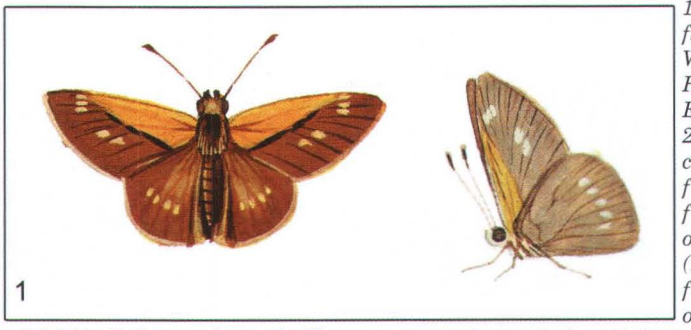
In the third volume of his Catalogue of the American Hesperiidae in the British Museum (Natural History), Evans (1955) replaced the long-standing names of three North American skippers with obscure senior subjective synonyms that were virtually unknown in the literature since they were proposed during the eighteenth century. Most lepidopterists embraced the names that Evans resurrected, but Miller & Brown (1981) believed that the older names could not be assigned with certainty because their original descriptions were too vague. Pelham (2008) asserted that at least one of these names, *Hesperia origenes* F., qualified as a *nomen oblitum* under the edition of the International Code of Zoological Nomenclature in force in 1955.

Few lepidopterists have examined the evidence that convinced Evans to resurrect the obscure older names. With this in mind, I offer details regarding the nominal species *Hesperia origenes* F., which is currently recognized as *Polites*

Continued on pp. 120



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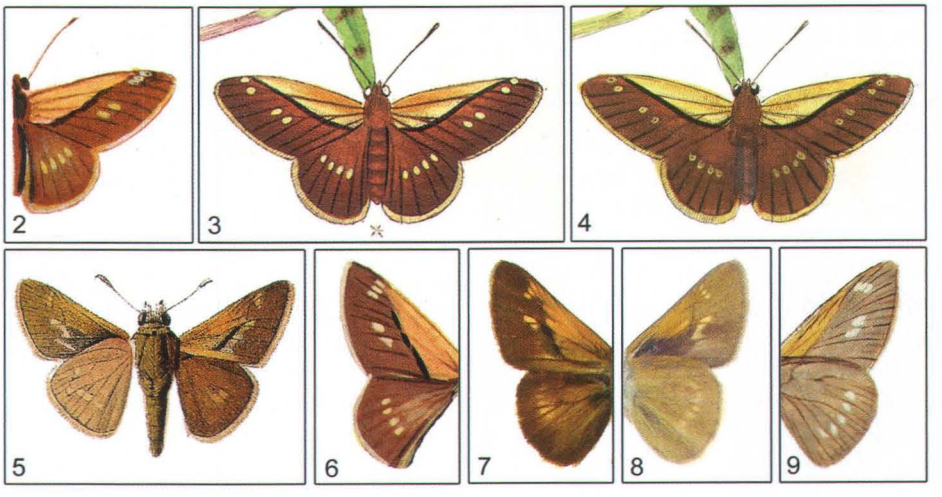
1) dorsal and ventral figures of "Origines" by William Jones (courtesy Hope Library of Entomology, OUMNH). 2) Edward Donovan's copy of Jones' dorsal figure. 3) published figure of "Papilio origines" from Donovan (1800-1804). 4) published figure of "Hesperia origines" from Westwood (1842b). 5) figure of a male H. manataaqua (ventral, dorsal) from Scudder (1888-1889). 6) rotated ("mounted") view of Jones' dorsal figure. 7) dorsal male Polites origenes, Centre Co., PA (MGCL). 8) ventral male, same data as Fig. 7. 9) rotated ("mounted") view of Jones' ventral figure.* (*courtesy Hope Library of Entomology, OUMNH).*



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origenes. Evans resurrected *H. origenes* to replace *Hesperia manataaqua* Scudder, most recently known as *Polites manataaqua*.

Description of *Hesperia origenes*

The Danish naturalist Johann C. Fabricius (1745-1808) described *Hesperia origenes* in 1793 in the third volume of his monograph, *Entomologia Systematica* (Fabricius 1793). His Latin description of this species was brief: "alis divaricatis concoloribus fuscis: stringa punctorum alborum, anticis basi testacies" [veined wings of the same brown color: with a series of white spots, forewing brownish-yellow at the base], to which he added, "Statura omnino praecedentium. Alae omnes fuscae stringa punctorum alborum. Anticae basi oblique testaceae" [Appearance generally like the preceding species (*Hesperia saturnis* F. = *Saturnus saturnus*). All wings brown with a series of white spots. The base of the forewings is obliquely brownish-yellow]. The type locality was purportedly "in Indiis," which is an indefinable location that was frequently cited by Fabricius and his teacher, Carl Linnaeus. Although "Indiis" has been interpreted to mean "India" (Turton 1802, Lamas 1979), both Fabricius and Linnaeus made discrete references to "India." Rather, "Indiis" presumably means "Indies" (i.e. East or West Indies). For *H. origenes*, Irwin & Downey (1973) surmised that Fabricius meant "West Indies." Fabricius associated "Indiis" with at least 95 new taxa, nearly all of which were published in *Entomologia Systematica*. Several are North American.

Although the written description of *H. origenes* is not useful in identifying the species, additional evidence is available. Fabricius (1793) referred to an unpublished illustration by the English naturalist William Jones (1745-1818). Fabricius cited "Jon. fig. pict. 6. tab. 74. fig. 2" [Jones' illustrations, volume 6, drawing no. 74, figure 2]. Beginning around 1783, Jones illustrated many species of Lepidoptera that were contained in insect collections around London. Fabricius examined these drawings in 1787 and they served as the basis of numerous species that he described in *Entomologia Systematica*. Fabricius cited other drawings as supplemental indications of additional species that he described. Fortunately, Jones' seven volumes of watercolors (bound as six) were presented in 1925 to the University of Oxford, where they are preserved in the Hope Library of Entomology. The illustrations have become known as the "Jones Icones" or "Jones' Icones," but the origin of this name is obscure. Butler ([1870]) reiterated a common myth that "Fabricius always quoted these drawings as Jones's 'Icones'." In reality, Fabricius (1793) merely cited figures among the drawings and did not entitle them. It was possibly the English naturalist J. O. Westwood (1805-1893) who conceived this name for citation purposes ("icones" is Latin for "images"). Most prior authors clumsily referred to the illustrations as "the drawings of Mr. Jones." Westwood (1837) initially referred to Jones as a "celebrated iconographer," after which he began citing the drawings as "Jones's Icones" (Westwood [1841]-1842). Westwood first examined the drawings in February 1842 when they were on temporary loan to the British Museum (Westwood 1842a). He later worked with the drawings during the 1870s in a failed attempt to publish them.

Jones' drawing no. 74 of volume 6 (now vol. 5) portrays dorsal and ventral figures of four species of Hesperiidae. One of the depicted specimens, credited to the insect collection of the London naturalist Dru Drury, was identified by Jones as "*Origines*" (sic) (Fig. 1). Jones cited the source of that name as "Fabricius ES 245" [Fabricius *Ent. Syst.*, species no. 245]. These figures are consistent with Fabricius' description of *H. origenes*. The figured specimen, which Hemming (1967) considered to represent the holotype of *H. origenes*, is believed to be lost or unrecognizable. This same drawing also portrays two unidentified figures of the widespread North American hesperiid *Polites peckius* (Kirby). This specimen was possibly also from the collection of Dru Drury, who received many insects from North America.

Four volumes of Jones' drawings are accompanied by lists of names in Fabricius' handwriting. These lists, hastily written on scrap paper, were possibly copied by Fabricius from originals that he created during the preparation of *Entomologia Systematica*. Fabricius identified the corresponding figures in volume 6 as "*origenes*," confirming their connection to his published description. Jones later inscribed on the drawing Fabricius' published description of *H. origenes*. Jones made no mention of the source of Drury's specimen, which explains Fabricius' use of his all-purpose "in Indiis" for this species. Unlike some other species depicted in Jones' drawings, there is no evidence that Fabricius saw the actual specimen in Drury's collection, which he examined many times beginning in 1767.

About the year 1800, the English naturalist Edward Donovan (1768-1837) faithfully copied the right half of Jones' dorsal figure of *H. origenes* (Fig. 2). Donovan's watercolor renderings are preserved in the Hope Library of Entomology. He did not copy Jones' ventral figure, but wrote, "below exactly as above only paler. Spots same." Using the misspelled name "*Papilio origines*," Donovan published a poorly-colored engraving of his figure in the book, *An Epitome of the Natural History of the Insects of India and Islands of the Indian Seas* (Donovan 1800-1804) (Fig. 3). Another engraving of this figure, identified as "*Hesperia origines*," appeared in the revised edition of Donovan's book, which was published five years after his death (Westwood 1842b) (Fig. 4). Donovan evidently interpreted "Indiis" to denote the East Indies.

Despite this alleged Old World origin, authors such as Latreille [1824]), Westwood (1852), and Weidemeyer

(1863-1864) suggested that *H. origenes* was North American and associated it with synonyms of *Hesperia themistocles* Latreille, now recognized as *Polites themistocles*. Morris (1860, 1862) went one step further and treated *origenes* as a senior synonym of *Hesperia cernes* Boisduval & Le Conte, now recognized as a junior synonym of *H. themistocles*. Morris was the first author to propose that *origenes* represented a senior synonym of a familiar American species. After Strecker (1878) questioned its synonymy with *H. cernes*, the name *origenes* was omitted from lists of North American Lepidoptera.

Description of *Hesperia manataaqua*

The pioneering American entomologist Thaddeus W. Harris (1795-1856) hesitantly identified two male specimens in his insect collection, one from Massachusetts and another from Georgia, as *Hesperia cernes*. Harris wrote about these specimens around 1840 and his remarks were published after his death (Harris 1862). Harris' collection was acquired in 1858 by the Boston Society of Natural History. Shortly thereafter, the American entomologist Samuel H. Scudder (1837-1911), who was then serving as the Curator of Entomology at the BSNH, recognized Harris' specimens as two new species. He described the specimen from Massachusetts as *Hesperia manataaqua* (Scudder 1863). Contrary to published references, Scudder did not include the specimen from Georgia (ex John Abbot) in this description, though it is now recognized as the same species. Harris' specimen from Massachusetts, deposited with the remainder of his collection at the Museum of Comparative Zoology (MCZ), Harvard University, is a previously unrecognized syntype of *H. manataaqua*. Harris recorded this specimen in his "Index Lepidopterum," a catalog of his Lepidoptera collection (MCZ). He collected it on 20 July 1836 in Cambridge, Massachusetts, which should be considered the type locality of *H. manataaqua*. A female specimen of this species from Scudder's collection, identified in Scudder's hand as "*manataaqua*," was labeled by a former curator at MCZ as the "type" of *H. manataaqua* (MCZ 2006). This specimen may share status as a syntype, but it bears no additional data. Scudder (1872) designated *H. manataaqua* as the type species of his genus *Limochores*.

The first illustrations of *manataaqua* appeared in the book, *The Butterflies of New England* by Maynard (1886), but the hand-colored figures were unidentifiable. Scudder later provided superb color chromolithographs of this species in his three-volume opus, *The Butterflies of the United States and Canada with Special Reference to New England* (Scudder 1889) (Fig. 5). The range of this skipper was very poorly known at that time; Scudder (1889) mapped it as a narrow band across the northeastern United States, from southern Maine to Maryland, westward to Nebraska.

Priority replacement

For nearly a century the name *manataaqua* was applied to a widespread species of skipper. Presumably following his examination of "Jones' Icones," Evans concluded that *H. origenes* represented the same insect. Jones' figures, though somewhat exaggerated, are consistent with the species currently known as *Polites origenes* (Figs. 6-9). The ventral ground color of this species is highly variable, ranging from yellowish-brown to gray. The ventral hindwing usually bears a series of pale spots of varying size and intensity. After Jones' death, his drawings were retained by his descendants in England, thus Scudder was unable to compare his new species with that previously described by Fabricius. Although Scudder visited England in 1871, I have found no evidence that he examined Jones' drawings.

Despite this perceived synonymy, why did Evans decide to replace a familiar valid name with another that was long forgotten? To better understand his reasoning, it is valuable to review the nomenclatural rules in effect in 1955. During the 1950s, governance of zoological nomenclature was based primarily on the *Règles internationales de la Nomenclature zoologique* (ICZN 1905). Some American entomologists adhered to the *Entomological Code* by Banks & Caudell (1912). Among those who preferred the latter was the lepidopterist Cyril F. dos Passos (1887-1986) (dos Passos 1960). A fundamental premise of both guidance documents was the Law of Priority, which dictated that the valid name of a species can be only that name under which it was first designated. In other words, if a valid older name was discovered, it was automatically considered to represent the name of that species. In 1913, plenary powers were granted to the International Commission on Zoological Nomenclature (ICZN) to suspend the *Règles* in cases where their strict application would "clearly result in greater confusion than uniformity."

The *nomen oblitum* rule did not officially exist in 1955. The foundation of this concept was proposed in 1948 as an insertion into the *Règles* called the "Law of Prescription." In 1953, a draft was adopted (in principle) and renamed the "Principal of Conservation." This proposal attempted to limit the replacement of commonly used names with unfamiliar senior subjective synonyms. After a vigorous debate, a revised provision was approved in 1958, but the *nomen oblitum* rule (also called the 50-year rule) did not come into effect until 1961 when it was published under Article 23b in the first edition of the modern *International Code of Zoological Nomenclature* (ICZN 1961). A *nomen oblitum* (forgotten name) was defined as "a name that has remained unused as a senior synonym in the primary zoological literature for more than fifty years." After 1960, a zoologist who discovered such a name was to refer it to the ICZN and it was not to be used unless so directed by the Commission. Although this rule was still included in the second edition of the *Code* (ICZN 1964), it was argued that Article 23b required further revision. The original

concept of a *nomen oblitum* was discontinued after 1972 and this term did not appear in the third edition of the *Code* (ICZN 1985). The relevant provisions of the *Code*, including the concept of a *nomen oblitum*, were redefined in the fourth edition (ICZN 1999) to better preserve nomenclatural stability through the protection of younger valid names.

It is obvious that the nomenclatural rules of 1955 did not discourage Evans from resurrecting long-forgotten replacement names. Although the ICZN had the ability to suspend the rules, no petitions were received by the Commission to suppress *Hesperia origenes*, or the other names that Evans had revived. This is especially surprising given that two influential catalogs of North American Lepidoptera (Morris 1860, 1862) had previously applied the name *origenes* to a different species. However, Evans' work was greatly respected and many entomologists still preferred the strict application of the Law of Priority, regardless of any ensuing confusion. The rigorous process required to suppress the names was possibly also a deterrent. After their inclusion in the popular *Synonymic List of the Nearctic Rhopalocera* by dos Passos (1964), the older names were quickly integrated into the literature. Usually a stickler for detail, dos Passos inexplicably misspelled the name *origenes* as "*origines*," leading many subsequent authors to reiterate the same error first committed by William Jones nearly two centuries before.

Miller & Brown (1981) suggested that the specimen of *H. origenes* figured by Jones was "probably from New York." Dru Drury's collection catalog (Hope Library of Entomology) indicates that this specimen was most likely collected by Thomas James in 1765 in the vicinity of Brooklyn, New York (more about James and his relationship with Drury is discussed in Calhoun (in press)). Two subspecies of this skipper are known to occur over a broad range, from Quebec to Florida, westward to North Dakota and New Mexico. For over fifty years this species has been recognized as *Polites origenes*. In the interest of stability, we should continue to do so.

Acknowledgements

Thanks are extended to Stella Brecknell, Rennison Hall, and David J. Rogers (OUMNH) for generously providing images and granting permission to publish them. Suzanne Smailes (Thomas Library, Wittenberg Univ.) also supplied images. Beverly Pope (DPI Library, Gainesville, FL) helped with literature. Philip D. Perkins (MCZ) granted access to the T. W. Harris insect collection. Andrew D. Warren (McGuire Center for Lepidoptera and Biodiversity, Florida Museum Natural History) helped search for specimens.

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Nominations for William D. Winter Service Award

Rebecca Simmons

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

Nominations of appropriate individuals are now requested for consideration by the Winter Award Committee for recognition at the 2010 meeting.

Applications must include:

1. A curriculum vitae for the candidate
2. Two supporting letters by current or former members of the society
3. A cover letter summarizing the candidate's contributions to the society

Applications must be complete by March 15, 2010. Please send these to:

Winter Award Committee
Dept. of Biology
University of North Dakota
PO Box 9019
Grand Forks, ND 58202

rebecca.simmons@und.nodak.edu

A Report on the 2009 Annual Meeting of the Lepidopterists' Society

Carmen Pozo

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The Neotropical Lepidoptera ELEN III meeting was held in conjunction with the 2009 meetings of the Lepidopterist's Society and the Association for Tropical Lepidoptera in Chetumal, Quintana Roo state in Mexico, from September 19th to 26th, 2009. The first part of the meeting was devoted to oral presentations and exhibition of posters. There were 79 participants from 12 countries (Belize, Brazil, Colombia, Costa Rica, Holland, Japan, Mexico, Nicaragua, Peru, South Korea, Uruguay, USA and Venezuela). The program included 42 oral presentations and 23 posters, with the participation of authors and coauthors representing 50 institutions.

The meeting began on Saturday, September 19th at 6:00 pm with a welcome icebreaker in the halls of the Maya Culture Museum and featured an assortment of delicious Mexican appetizers. On Sunday morning at 9 o'clock, the presentations began with a welcome by Dra. Minerva Arce, Director of Chetumal ECOSUR unit, and words from Jackie Miller of the McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, inviting all present to register as members of the Association for Tropical Lepidoptera (ATL). John Shuey, from The Nature Conservancy, and incoming President of the Lepidopterists' Society, also gave a welcome to the meeting and invited the participants to join the Lepidopterists´ Society. Armando Luis Martinez from UNAM and Carmen Pozo from ECOSUR, welcomed those present and expressed their hopes that the meeting would please everyone and fulfill their expectations.

Our first three days were conference sessions, with time for coffee breaks, which allowed for the exchange of experiences among participants. Many new friendships and opportunities to form collaborative projects were developed. The atmosphere was very pleasant, with students and teachers from different countries, all interested in the study of Lepidoptera.

The first day, the themes of the sessions focused on biogeographic, taxonomic, and molecular phylogenetic studies, including applications for conservation. Late in the afternoon we had the BBQ but the weather did not allow us to have it as originally planned outdoors near the dock of the Bay of Chetumal. However, the Holiday Inn provided us with a varied and tasty menu that was enjoy by the 64 participants.

On Monday, we had oral presentations from participants from Colombia, Costa Rica and Mexico on work related to effects on the diversity of butterflies in agricultural development areas. In the afternoon, there was a workshop for building a website that allows access to photographs and literature of Mexican specimens from different collections throughout the country. The workshop was attended by 28 people while other meeting participants took the opportunity to explore additional places near the city of Chetumal, for example Laguna Bacalar.

Poster sessions were held during the first and second days. There were 21 posters covering a wide variety of topics, from genital structures, range extensions, life history, immature stages, and diversity of certain families. The interaction between exhibitors and attendees was very productive.

The last day of presentations focused on the fauna of butterflies in different regions of Colombia, Brazil, Uruguay and Mexico. At the end of the presentations Sandra Muriel, Uruguay representative, made a presentation requesting that ELEN IV take place in Uruguay in addition to offers already received from Venezuela and Colombian counterparts. We missed Charlie Covell, who normally gathers and presents door prizes after the banquet but he sent along the prizes with Jackie Miller and Debbie Matthews. We received others from Mexico during the meetings. The awards show was very nice and it was a shame that many registrants could not attend the banquet as some had to leave early due to other commitments.

The second part of the meeting was dedicated to the field trips. A group of 11 people from four countries spent three days collecting both butterflies and moths in ECOSUR Botanical Garden, located in Puerto Morelos, south of Cancun. The area was very dry because the rains were sparse and late this year, so few specimens were collected. The other collecting site was on the banks of the lagoon shore in San Felipe Bacalar. A group of collectors from four countries took daily trips for night and day collecting.

During the conference sessions, there were field trips for guest associates to archeological Mayan zones like Oxtankah and Kohunlich, sites near Chetumal city.

The organizing committee expected attendance by more colleagues interested in the study of Lepidoptera but the date change caused by the outbreak of influenza H1N1 and the global economic crisis unfortunately prevented all of those who originally wanted to attend from coming. To those original registrants, we missed you all. We look forward to seeing you at the 2010 meetings.

Organizing Committee

Carmen Pozo: General Coordination and attendee registration

Armando Luis Martinez and Castaneda America: Reception and organization of summaries

Armando Luis Martinez and David Gonzalez: Workshop

Naomi Chambers and White Prado: Coordination field trips

Blanca Prado and Carmen Rosas: Coordination of cultural events

Naomi Chambers: Sales

Enrique Escobedo: Logistics

See photos from the 2009 Annual Meeting on pp. 138 and 139.

Phyciodes pallescens in Texas

Continued from pp. 117

Phyciodes pallescens. This specimen is the first record for Texas and the second record for the United States.

The first US record of *P. pallescens* was collected in Cochise County, Arizona by Ray Stanford in 1958 (Stanford 2007). In Mexico, it has been recorded from Sonora south to Oaxaca with records also from Tamaulipas. It evidently strays into extreme southern Texas, perhaps more commonly than appreciated.

The specimen of *Phyciodes pallescens* from Texas is pictured (Fig 1, 2, pp. 116) with *P. phaon* (Fig 3, 4) for comparison. These plates should clearly present the differences between the two species. *P. phaon* is the most likely candidate to confuse with *P. pallescens*. Note the disjointed FW band in *P. pallescens*, as well as the "pale" tan ventral HW.

Acknowledgments

I thank Ed Knudson and Charles Bordelon for reviewing this manuscript.

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Stanford, Ray E., 2007. *Phyciodes pallescens* (R. Felder, 1869), New from Arizona and the USA, with a 50 year follow-up! News of the Lepidopterist' Society 49:4 (pg. 116)

Membership Update...

Julian Donahue

Includes all changes received by 3 December 2009.

"Lost" Member

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

Young, James D. (Ph.D.), Oregon State University, Corvallis, Oregon.

New and Reinstated Members:

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

Baumann, John: 3728 North C Street, Spokane, WA 99205-2211.

Harvie, Peter D. (Ph.D.): 30 Chamberlain Avenue, Brunswick, ME 04011-2530.

Jordan, Maggie (Ms.): 1523 West Elizabeth Street, Unit A, Fort Collins, CO 80521-5008.

McCracken, Brenda: 3728 North C Street, Spokane, WA 99205-2211.

Wells, Carrie (Ms.): 15 Dove Circle, Clemson, SC 29631-1683.

Address Changes

(all U.S.A. unless noted otherwise)

Ballantine, Alistair (Dr.): 3/F New World Tower 2, 18 Queen's Road Central, Hong Kong.

Braden, William: 1049 Santa Barbara Drive SE, Grand Rapids, MI 49506-6562.

Callaghan, Curtis J.: Calle 93 5-45, Apt. 301, Bogota, Colombia.

Dymak, Joseph F., III: 902 NE 66th Terrace, Kansas City, MO 64118-3518.

Grinter, Chris: 1217B University Avenue, Berkeley, CA 94702-1708.

Neunzig, H. H. (Dr.): 11728 Man O War Trail, Raleigh, NC 27613-7012.

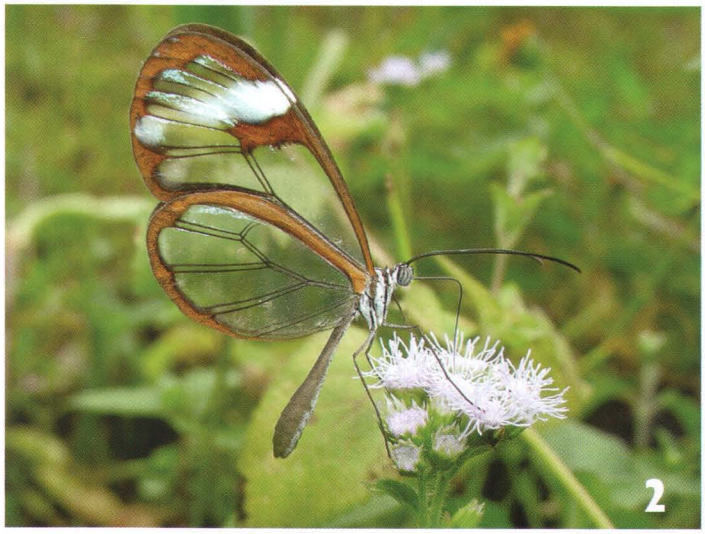
Pfeiffer, Bryan M.: P.O. Box 121, Plainfield, VT 05667-0121.

Preston, William B. (Dr.): 1336 Mathers Avenue, Winnipeg, Manitoba R3M 2J8, Canada.

Richter, John K.: 116 Tower Street, Landenberg, PA 19350-8310.

Metamorphosis...

Robert E. Aronheim, of Oakton, Virginia. Mr. Aronheim, a specialist in the nymphalid genus Agrias, was a Life Member of the Society. He first joined the Society in 1972.



1) *Mechanitis menapis doryssus* taken June 3, 2007 at Los Tarrales, Atitlan Volcano, Guatemala 800 meters. **2)** *Greta andromica* taken May 31, 2007 at Fermiza, eastern Guatemala, 1100 meters. This shows the "double veining" where the wings aren't exactly held together. **3)** *Ithomia agnosia* taken July 18, 2008 at Rio Claro, Colombia 350 meters, 3 hours east of Medellin. **4)** *Epityches eupompe* taken Oct 30, 2008 at Caetes, Espirito Santo, Brazil, 1100 meters. This shot shows the wing tips slightly out of focus, as the camera wasn't flat next to the butterfly. **5)** same individual as fig. 4, this one shows the whole butterfly in better focus due to the camera being held at a better angle, flatter, to the wings.

Digital Collecting:

Photographing Ithomiinae

Kim Garwood

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Welcome to Digital Collecting, a new column I will be coordinating that will explore aspects of digital photography and leps. Pertinent topics will range from 'how to' photo techniques to baiting and slowing them down to how to deal with your photos on the computer afterwards, as well as whatever else comes to mind. Hopefully we'll have other contributors doing some columns, so different photographers can add their input. This column is aimed primarily at photographers of live butterflies and moths in the field.

I have never been a collector in the traditional sense, but I have used many other peoples' collections, and am very glad other people have spent the time and effort to build their own collections, and to allow me access to them. Without collections we wouldn't have a clue what we were seeing in the field, especially in my area of concentration, the neotropics. The main reasons I don't collect are I don't have the space, plus I'm lazy, and by doing photography I don't need to worry about permits in other countries. National Parks, no problem. Mexico or South America, no sweat. Plus storage of tens of thousands of photos is far easier than keeping all those specimens. Not to mention finding and comparing photos, I'll talk about filing systems for photos in the future. Final reason, a good photo of a fresh individual, untouched by a net or human hands, is much more gorgeous than a specimen, and the way the butterfly holds its wings often creates a different pattern or impression than a spread specimen, especially in the Hesperiidae. It's also much easier to share a photo over the internet, and to get others excited about conservation of species in their area.

Digital cameras have improved so rapidly in the last 5 to 6 years, almost anyone can take decent photos now. You don't have to know a lot about cameras, or spend a lot of money. I use an inexpensive Sony cybershot N-2 camera, less than $400, and get quite acceptable photos by shooting all macro. It's light and fits in a shirt pocket, so it's easy to carry all day in the field. The Sony has a good Carl Zeiss lens and an excellent macro, so my main job is to get close to the butterfly and to get it in focus. Out of focus photos are almost useless, so delete them up front. Ideally I like to shoot within a foot or less of the butterfly, so patience is the key. Because the Sony doesn't even have a viewfinder, I shoot with the camera held at arm's length and shoot one-handed, using the screen on the back of the camera to see what I'm doing. It's much easier to slowly move a small camera close to a butterfly, instead of having to get my entire head and body up close. Plus this way it's easier to get the camera under a leaf or through a fence or in through bushes to the flower the butterfly is on.

So how do you get good in-focus photos? The key is to get close and to align the camera lens with the plane of the butterfly's wings. The depth of field is usually fairly narrow, so if the butterfly is at an angle to the lens then part of the butterfly will be out of focus. Getting the alignment right is the tricky part, especially when it's a hairstreak revolving around on a flower. When the butterfly is on the ground, as they often are when collecting minerals from wet sand, the photographer needs to get down on their level, or get the camera on their level. You have to have the lens flat compared to the butterfly, not looking down on an individual at a 45-degree angle. I spend a lot of time either on my knees, or stomach, or standing quietly at a mud puddling spot bending over so my camera is on the ground, letting the butterflies settle back down onto the mud, then slowly moving my camera up next to them. After a while they forget I'm there, and I can even move them around, gently pushing the common ones away so I can get a clear shot of the more unusual one in the back.

I just returned from six weeks photographing in Ecuador, and my favorite group from this trip were the Ithomiinae. I found several leks at different locations where hundreds of individuals were gathering, and probably photographed 30-40 species over the trip. Photographing Ithomiinae can be difficult, as the camera often can't focus properly on the wings. You're usually shooting on the forest floor so it's dark and shaded, so you usually need flash. You have to get good enough photos to clearly see the veination of the hindwings to get them to genus, so fuzzy photos aren't much help. Because they rarely sit with their wings open, you will be getting ventral shots, and sometimes the wings are slightly not aligned, which gives you a double vein effect.

One way I've found helps with the focus problem on Ithomiinae is to focus on the leaf where their feet are. Again, getting the wings at right angle to the lens, so the lens is flat on the plane of the wings, is key. If you're lucky enough to find a lek where they are gathering in good numbers, they will often pose nicely for flash photography, and allow you to get very close if you move slowly.

My other good way to photograph Ithomiinae is to find the small white flowers, often on roadsides or edges, at which they feed at for the pyrrolizidine alkaloids they need to make them distastful to predators.

So move slowly, have patience, and use the delete button. Digital photos are free, once you've got the camera, so take lots and delete the bad ones. I'll start shooting an individual from a ways away, take a step and shoot again, take another step and shoot again. I may shoot 30, 40 shots or more of the same individual, if he'll sit for it. You can try different exposures, flash or no flash, then later on the computer keep the ones you want and delete the rest. The best way to improve as a photographer is to go out and shoot 5,000 photos, then shoot 5,000 more. You'll be amazed to see the improvement. The more you shoot, the better you get.

To suggest future topics, ask questions or to submit column ideas, contact Kim at ***kimgrwd@sbcglobal.net***, or ***www.neotropicalbutterflies.com***

The current state of The Butterfly Society of Japan

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The Butterfly Society of Japan was originally founded in 1991 by the late Dr. Suguru Igarashi, an amateur butterfly enthusiast who became known for his work on the multi-volume, *The Life Histories of Asian Butterflies*. During the 1990's, the society had more than 1300 active members, and annually published three journal issues of *Butterflies* and numerous issues of its newsletter, *Butterflies Newsletter*. Recently, however, the society underwent changes that led to its division into two separate societies. The initial separation began in 2004, when internal friction between officials led to a brief termination of the journal and all other activities. In 2005, two groups of officials began leading the society in separate directions. In 2007, the two sides independently formed their own society called "The Butterfly Society of Japan," publishing their own journal and newsletter, starting from volume 39. The current presidents are Dr. Osamu Yata (specialist on Asian Pieridae; *Butterflies - Teinopalpus*), and Dr. Atsuo Ohya (specialist on *Parnassius* spp. and well-known amateur photographer). Today, the two societies are called *Butterflies (Teinopalpus)*(English website - http://www.asahi-net.or.jp/~ey4y-tknm/bsjn/back/butidx-e.html), and *Butterflies (S. fujisanus)* (Japanese website - http://butterflysociety-jp.org/). As of November 2009, *Butterflies (Teinopalpus)* has published 53

volumes, and *Butterflies (S. fujisanus)* has published 49. Annual fee for either society is 10,000 yen (approximately $115 US, as of Nov. 2009), and their publications are written in Japanese with an English summary. Both journals include high-quality images in color, and regular articles on butterfly taxonomy, natural history, and collecting expeditions. Both societies also have annual meetings in Japan.

There are a few differences between the two journals. For instance, *Butterflies (Teinopalpus)* is refereed, while *Butterflies (S. fujisanus)* tends not to be; *Butterflies (Teinopalpus)* frequently focuses on topics pertaining to butterflies outside of Japan (e.g., Southeast Asia), while *Butterflies (S. fujisanus)* tends to focus on domestic issues. Both societies publish journals and newsletters multiple times a year, but the latter appears to be slightly delayed in 2009. There is some activity in trying to merge the two societies again into one society, but this remains to be seen. Figures 1-4 are an example from a recent issue of *Butterflies (Teinopalpus)*. The article was written by Akio Masui on the rediscovery of *Mimathyma bhavana* (Moore, 1881) from Myanmar (Masui, A. 2009. Rediscovery of *Mimathyma bhavana* (Moore, 1881): a long neglected apaturine species from northern Myanmar (Lepidoptera, Nymphalidae, Apatuinae). *Butterflies (Teinopalpus)* 52: 8-18).

Visits to the Home and Collection of Linnaeus

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All lepidopterists have heard the name Linnaeus, and most of them probably know that the "L." after a scientific name of a moth or butterfly means Linnaeus. Carl Linnaeus (1707–1778) is primarily credited with giving us the system of scientific names on which we rely so heavily today. Twenty years ago, I saw an article that a lepidopterist had written about his visit to the home of Linnaeus (Takahashi 1988), and although I could not read his Japanese text, the photographs were tantalizing enough for me to resolve that I must go there if I ever made it to Sweden. In July 2005 I indeed took the opportunity to visit his house in Uppsala, Sweden, and also his collection in London. There are a few commonly held misconceptions pertaining to this biologist, the most famous Swede in the world, as I will point out below.

The first misconception pertains to his own name. He was born Linnaeus, but in 1757 received the ennobled name Carl von Linné (Grimaldi & Engel 2005: 17). Taxonomists regularly use both names. French authors seem to prefer Linné, but English-speaking authors generally designate him as Linnaeus, or Linn., or L., when crediting authorship of a taxon that he described. Spanish writers often cite him as Linneo. In any case, Linnaeus is his original Swedish name, and not a latinized form of Linné as is often stated. With the "-us" ending and the "ae" within, it is understandable that many would consider the name Linnaeus to be a latinized name.

Hundreds of our plants and animals native to North America were named by Linnaeus. He acquired material from all over the world, sent or sold to him by European collectors. Some of his former students sent him seeds, and he received specimens of plants and animals through the Swedish East India Company. He named most of the common and well known birds, mammals, reptiles, and amphibians of Europe and many animals from other parts of the world, including the lion, the tiger, the jaguar, the Indian elephant, both camels, the wolf, the dog, the cat, the horse, the cow/bull, many rodents, and numerous others. He amassed a large collection of dried fishes and named a lot of those. Linnaeus considered himself primarily to be a botanist, and accordingly the scientific names of many of our North American trees, shrubs, and herbaceous plants are attributed to him, both the generic and specific epithets. For example, red maple (*Acer rubrum*), bladdernut (*Staphylea trifolia*), water oak (*Quercus nigra*), tuliptree (*Liriodendron tulipifera*), sweetbay (*Magnolia virginiana*), black walnut (*Juglans nigra*), all were named by Linnaeus, both as genera and species. Linnaeus named *Homo sapiens* (meaning smart human), but his characterizations of the so-called races of humans in that part of his text reflected the prevailing notion of European superiority and would be offensive to most people today.

For entomologists, many common and well known insects were named by Linnaeus, including the honey bee (*Apis mellifera*). For those of us who are lepidopterists, several of our most conspicuous species here in the USA were named by him: *Actias luna*, *Hyalophora cecropia*, *Danaus plexippus*, *Papilio glaucus*, *Battus polydamas*, and *Papilio troilus*. He also named many butterflies and moths from Australia (*Ornithoptera priamus*, *Papilio ulysses*), South America (*Morpho achilles*, *M. menelaus*, *Urbanus proteus*, *Eumorpha labruscae*), Africa (*Euchloron megaera*, *Papilio nireis*), and Asia (*Papilio patroclus*, *Graphium sarpedon*, *Hebomoia glaucippe*, *Dysphania militaris*), of which I list here just a few well known examples. He is probably the one who started a tradition of naming insects (especially Papilionidae, Sphingidae, Saturniidae, and Scarabaeoidea) after personalities of Greek and Roman mythology.

It is also a common misconception that Linnaeus concocted all of these names out of his head. In many cases, those plants and animals already had Latin names. He simply formalized them in his publications, and now they are attributed to him. For example, the ancient Romans called poplar trees *populus* (because they thought they were inhabited by human spirits—our words like people, population, etc., come from the Latin *populus*), and an oak tree was called *quercus* by them, but those generic names are now attributed to Linnaeus. Linnaeus named the cow/bull *Bos taurus*, but astronomers, astrologers, and astrophysicists all know that Taurus (from which the Spanish toro is derived) is a name that dates back thousands of years, for that animal is native to Europe and western Asia. Another misconception is that Linnaeus invented the binomial system of nomenclature in short order. Actually the naming system evolved over time, early in his career, as he assigned descriptive names to plants in his field notebooks, and eventually shortened them to the group name (genus) and briefest descriptive name (the one-word species).

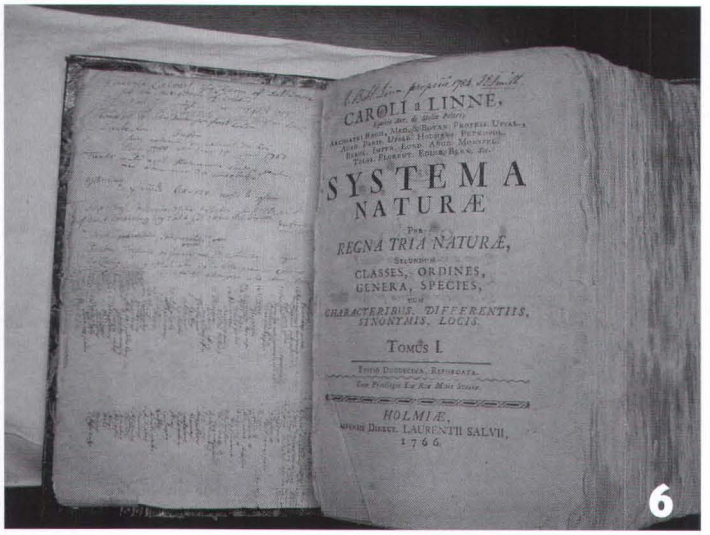
The starting point for naming of plants begins with publication in 1753 by Linnaeus of his book *Species Plantarum*. No scientific name of any plant published prior to that is valid.

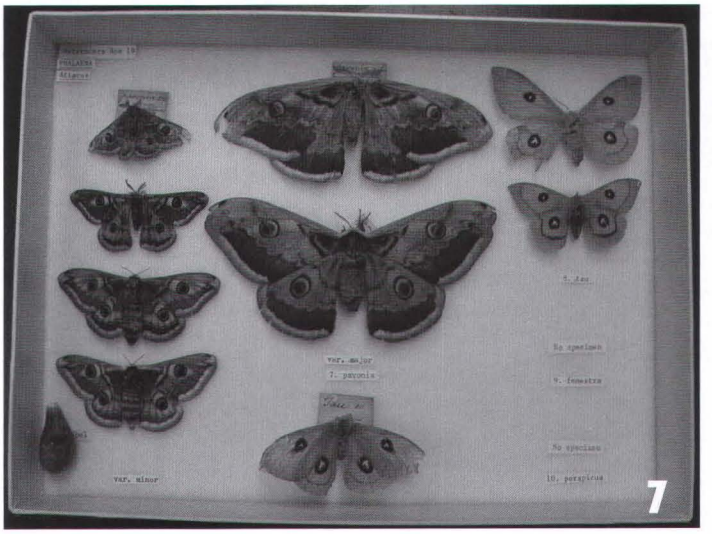
1–5. Images in Uppsala, Sweden, taken 21 July 2005. ***1.*** *Home of Carl Linnaeus, now the Linnaeus Museum (Linnémuseet) open to the public.* ***2.*** *Garden adjacent to house recreated to show the kinds of plants that Linnaeus grew. .* ***3.*** *The author beside entrance to the house.* ***4.*** *Statue of a young Linnaeus in the garden.* ***5.*** *Domkyrke, a Lutheran cathedral in which Linnaeus is entombed.*

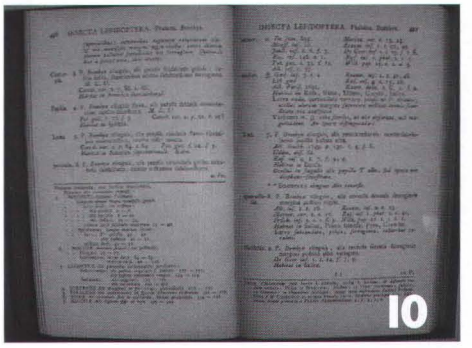
The starting point for the naming of animals is the 10th edition of the *Systema Naturae*, published in 1758 in "Holmiae" [Stockholm]. This "system of nature" included the three kingdoms: animal, vegetable, and mineral. Whatever. The *Systema Naturae* began as a folio pamphlet, and grew thicker with each edition, which were then published in octavo format. I bought a copy of the fourth edition in a bookshop in Luzern, Switzerland, in 2003. It was published in Paris in 1740 and has the common names in French of many of the animals and plants. My copy is in its original binding, with a tooled spine, so it is not something to pass around in my Evolution & Systematics class! Later in 2003 I saw a copy of this fourth edition offered on the internet by a bookseller in Ohio for more than three times the price I paid for mine. Much less valuable but far more useful is my facsimile copy of the 10th edition published by the British Museum in 1939, which covers only the animal kingdom. Another facsimile edition was published by the German Zoological Society in 1894, and there are some recent ones as well.

Linnaeus spent a few years in The Netherlands lecturing and studying. He made journeys to Lapland, England, France, and Germany early in his academic career. He did not learn to speak French, Dutch, or English, but got along quite well because Latin was used in the universities. Back home in Sweden he developed quite a following of students at Uppsala University. He often led groups into the field to teach them about plants. He was very religious, and is quoted as having said something that would translate, "God creates species and Linnaeus classifies them." Entomologists need to know that the German Johann C. Fabricius (1745–1808) was a student of Linnaeus, and the first insect taxonomist. Linnaeus later adopted the classification of his stellar student based on mouthparts of insects. So many of our Lepidoptera were named by Fabricius, that we generally recognize that "F." stands for Fabricius after a scientific name.

Linnaeus owned or had access to copies of the old herbals and natural history books of his time. As far as possible, he cited them in brief lists under the species descriptions. For example, for *Attacus atlas*, he assumed the figure of *Rothschildia aurota* that Maria Sibylla Merian illustrated in 1705 from Surinam was the same moth as some published figures of true *Attacus* from tropical Asia. So Merian's color figure was listed by Linnaeus along with those of Dolaei (1698), Petiver (1702–1709), Valentini (1714), and Knorr (1754) [see







6–9. Images in the Linnean Society of London, taken 12 July 2005. ***6.*** *Linnaeus' working copy of 12th edition of Systema Naturae with his handwritten notes. The line written across the top of the title page indicates that J. E. Smith acquired the book in 1784 from Linnaeus' library.* ***7.*** *Specimens of European saturniids (Saturnia pavonia, S. pyri, Aglia tau) in the Linnaeus collection.* ***8.*** *Linnaeus herbarium, still bundled in their original wrappers.* ***9.*** *Personal library of Linnaeus.* ***10.*** *Scan of pages 496–497 of the 10th edition of the Systema Naturae (1758) showing the original descriptions of Hyalophora cecropia, Antheraea paphia, Actias luna, Saturnia pavonia, Aglia tau, Gastropacha quercifolia, and Phyllodesma ilicifolia. Saturnia pyri is referred to here as pavonia major, and this is not considered to be a valid description.*

Peigler (1989) for full citations of literature cited above in this paragraph]. Consequently, Linnaeus erroneously cited America as part of the range of *Attacus atlas* in his original description of the atlas moth. In the same vein, Linnaeus cited a figure of *Antheraea polyphemus* published in Mark Catesby's *Natural History of Carolina, Florida and the Bahama Islands* (published between 1731 and 1743) with a question mark under his description of *Antheraea paphia* (see Fig. 10). Some of the specimens that Linnaeus studied and cited are still preserved in the museum of Queen Ludovica Ulrica in Uppsala (cited by him as M.L.U.).

For insects, most the the Linnean genera are now considered to be families or even superfamilies: his generic concept *Noctua* is now more or less what we call Noctuidae, his *Papilio* now refers to all butterflies, and his moths were given double generic names, but the International Commission on Zoological Nomenclature ruled that the second part of the name can be used as generic names: *Phalaena Bombyx* is now just *Bombyx*, *Phalaena Geometra* (a genus to which Linnaeus assigned most geometrids known to him) is now *Geometra*, etc. His *Bombyx* of course included many Saturniidae, Arctiidae, Notodontidae, Lymantriidae, and Lasiocampidae——moths with stout, furry bodies and vestigial tongues. Linnaeus named almost all of the sphingids of Europe, under the genus *Sphinx*. Linnaeus did not designate type specimens, but fortunately there does not appear to be much confusion about the correct identity of the species he named. A few decades after Linnaeus, it was primarily Jakob Hübner (1761–1826) in Augsburg, Germany, who began to split those large genera of Lepidoptera into smaller entities. Hübner was criticized by his contemporaries for doing this (Kirby 1897), but we now see the wisdom and necessity of what he did, because so many of the generic names that he proposed are still in use today. Incidentally, it is regrettable that Hübner's collection of Lepidoptera was destroyed by fire in 1848 (Kudrna & Wiemers 1990).

My visit to the Linnean Society in London that morning was made alone. I wondered why my students would prefer to see the Crown Jewels at the Tower of London instead of the actual

collection of Linnaeus, especially after I had told them about Linnaeus in their courses. The collection is housed below street level in a vault, in a section of London called Piccadilly. In 1784, six years after Linnaeus died, Sir James Edward Smith (of Abbot & Smith fame to lepidopterists) bought his collection from the widow of Linnaeus and brought it to London. One story goes that the King of Sweden sent a warship in pursuit when he received word of this sale, but the English ship was too far ahead. Having made an appointment weeks in advance by email, I was given access to the collection and personal library of Linnaeus. I was allowed to handle and photograph Linnaeus' personal copy of the 12th edition of the *Systema Naturae* with his handwritten notes all over the pages. I was also free to photograph anything I wanted. The collection includes sea shells, many pinned insects, and a herbarium comprising many shelves of pressed plants. Two centuries ago Smith added additional specimens after acquiring the collection, so it has sometimes been difficult to determine which ones were true Linnaeus syntypes. However, Mikkola and Honey (1993) made an exhaustive study of the Noctuoidea, and illustrated and described how original specimens that belonged to Linnaeus were mounted on an older type of pin. The importance of this collection and library to botanists and zoologists who are biosystematists cannot be overstated. Images of specimens and labels of almost all of the Lepidoptera and plants in the collection have been posted recently on the website of the Linnean Society of London.

Linnaeus spent the last 35 years of his life in a house in Uppsala, where he and his wife Sara Lisa had seven children, two of whom died as infants. Since 1937 the house has been a small museum, open to the public. It is owned by Uppsala University, and operated by the Swedish Linnaean Society (Svenska Linnésällskapet, Box 6, Uppsala 753-32, Sweden). Photography is disallowed in the house, so I can only show the outside here. I took a train to Uppsala from Stockholm, a trip of about 50 kilometers, and was accompanied by one of my students who claimed that he wanted to visit the medical museum at Uppsala University, but I suspected he was already regretting not going to the Linnean Society of London two weeks earlier. My other students opted to remain in Stockholm to shop, and were probably thinking that I should get a life. In the two-story house we saw room after room that gave glimpses of how Linnaeus lived more than two centuries earlier, and some of his specimens and work areas were on display. A nice curator at the front desk informed me that it was very unfortunate that his collection is in London, but I did not have the heart to tell her that I had seen it less than two weeks earlier. The steeple of the Domkyrke (Dome Church), the Lutheran cathedral in the center of the city, is only a few blocks away and visible from the house. We entered and saw where Linnaeus is buried beneath the floor near the front entrance.

I spent a short time in the garden beside the house. It has been recreated to include many of the kinds of plants, mostly herbs and flowers, that Linnaeus grew there, all nicely labeled in plots. I had brought along a few small vials in my pocket, and I need not tell you why. It was a small pleasure to collect a few flies and bees on the flowers in the actual garden of Linnaeus. These were pinned and labeled and donated to the insect collection at Texas A&M University.

The Swedes are justifiably proud of the immense contribution that Linnaeus made to science. Their 100-crown banknote features Linnaeus, and that day we had lunch in the Café Linné on Linné Street (Linnégatan), two blocks from the house. We even bought a bottle of Linné brand water at the airport on the last day.

Acknowledgments

I thank Gina Douglas, Archivist Emerita at the Linnean Society of London, for her kindness to me during my visit. Some of the photographs in Uppsala were made by my former student Sebastian Villarreal, who is now in medical school in Houston.

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Conservation Matters: Contributions from the Conservation Committee

Butterflies and Fire: Ashes or Phoenix?

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Consternation, frustration, dismay—when discussing the use of fire to manage grasslands these are some of the emotions of that can sweep over a lepidopterist. There are valid reasons to hold these feelings since lepidopterists can point to numerous examples of butterfly loss from meadows following prescribed fires. The other side of the coin is that controlled burning is used to maintain quality habitat. Land managers believe that fire is essential to many natural areas and without it the areas would become degraded and lose overall biological diversity.

Controlled burning is an increasingly common management tool no matter how you feel about it and all sides can agree that fire has played an important role in native ecosystems. Pre-historically, most fires were probably caused by lightning but once humans obtained the necessary skills to start fires they used fire to shape landscapes. Some Native Americans burned grasslands year after year to keep the forests from encroaching and to maintain favorable habitat for game and plants they traditionally hunted and harvested.

Pioneers across the American landscape used fire to clear forests but a different view of fire gradually took hold. Fire became something that needed to be controlled wherever possible. From log cabins built by settlers on the prairie to sprawling mansions that now dot the hills above Los Angeles, the construction of permanent structures throughout the country's landscape changed attitudes to wildfire. The 1944 arrival of Smokey Bear in the American consciousness settled the debate: forest fires were bad and should not be allowed to burn.

There was only one problem: without fire the American landscape began to change. Forests grew thicker and trees encroached on meadows and prairies. In some areas this succession eventually resulted in the degradation and loss of these grasslands. To compound the issue, people preferred grasslands for agriculture, housing, and other developments.

Historically, the vast expanse of North America's prairies offered sufficient areas in various stages of succession to support habitat for a wide variety of animals. An area could burn—even for miles—and there was still plenty left to support plants and animals. Fast forward to today: the remaining grasslands are found in fragments scattered across an otherwise intensively managed landscape. This change is not limited to any one region but has taken place across the country. Only a fraction of tallgrass prairies in the East and Midwest remain. Prairie and savanna in the West has fared no better. Without fire many of these areas are negatively affected by both native and non-native invasive plants, changing them from open flower-rich prairie to shaded areas. Paralleling the decline in grasslands, the animals that relied on them have been relegated to ever smaller areas. Grasslands and meadows now contain some of the most imperiled plants and animals in North America. Several butterflies listed under the U.S. Endangered Species Act require grasslands for survival, and other rare species such as the Ottoe skipper (*Hesperia ottoe*) and the regal fritillary (*Speyeria idalia*) have been seriously reduced on numerous reserves by controlled burns.

So what can be done? Small areas that support extremely rare species need to be managed to control the change to shaded conditions or they will no longer provide viable habitat, but the management practices we use could lead to the local extirpation or overall extinction of some of these species. Can prescribed fire and rare prairie butterflies coexist?

The mardon skipper (*Polites mardon*) is one butterfly that has evolved with fire. Found only in Washington, southern Oregon, and northern California, this small, tawny-orange butterfly is dependent upon grasslands dominated by Idaho fescue (*Festuca idahoensis*), or California oatgrass (*Danthonia californica*), the skipper's two preferred caterpillar host plants. These grasslands have declined dramatically in the past one hundred and fifty years throughout the skipper's range due to agricultural and residential development, fire suppression, livestock grazing, and the spread of exotic species. For example, more than 95 percent of native prairies in western Washington have been dramatically altered or destroyed.

In 2007 and 2008, the Xerces Society worked with the U.S. Fish and Wildlife Service and the U.S. Forest Service to survey potential habitat for this species on Forest Service lands in northern California. California was known to be home to only a few very small

populations and these agencies wanted to see if surveys would find more sites. The mardon skipper has a short flight season, so all surveys were squeezed into a brief two- or three-week period when the adults are expected to be on the wing. In 2007 we surveyed dozens of areas, but found no new populations of skippers. Surveys in the second year seemed to be heading in the same direction until the last day of field work.

After days of grueling hikes in the forested mountains of northern California, and no success in finding the skipper, my Xerces colleague Logan Lauvray and I arrived at our last site on Coon Mountain with relative ease, but feeling low. Stepping out of the 4 x 4 vehicle into the morning sunshine, we looked across a complex of interconnected meadows dotted with immense Jeffrey pines (*Pinus jeffreyi*). Within a minute of walking into the meadow I saw the distinctive shape, color, and flight pattern of a mardon skipper. We soon realized that we had hit the mother lode! Over the course of the next several hours we counted over one hundred butterflies. This may not seem like a lot but most mardon population counts find only a dozen individuals, so we knew we had found a very special site.

Excited about the find, we contacted our agency partners to tell them the good news. We had found this population just in time. For over a year, the Forest Service had been planning a controlled burn at the site, a meadow system on serpentine soils of a quality that is rare in the region. These systems are highly fire-adapted and many of the plants and animals associated with them need fire to keep these habitats open. Also, a closer inspection showed that on the Coon Mountain site there was considerable encroachment by woody vegetation that could lead to a hot-burning wildfire. Without management this meadow would become a brush field or a tinderbox.

There was ample reason to be concerned about a prescribed fire harming the mardon population. The use of fire as a management tool is based on the supposition that prairie and meadow species are adapted to wildfires and thus can cope with regular burns. However, the survival of many invertebrates in these areas is dependent on the presence of nearby unburned areas to offer refuge to populations that can recolonize the burned habitat. Many studies on a variety of invertebrates, including butterflies, bees, and snails, have found that burning a small habitat fragment in its entirety risks extirpating some species because of limited or no recolonization from adjacent areas.

Fire practitioners often do not take invertebrates into account when planning controlled burns and there are almost never baseline surveys of the invertebrates at a site. They understand that many plants at the site are adapted to fires and know how they will respond. They also know that most mammal and bird species can move out of harm's way, as long as the controlled burn is not done during nesting season. What they are less aware of is that most insects (especially larval stages of habitat-specialist insects) are not as mobile as vertebrates. There is also little consideration of the life history of insects. Many butterflies overwinter as larvae or pupae on site. For instance the island marble (*Euchloe ausonides insulanus*), an extremely rare butterfly found only on the San Juan Islands of Washington state, overwinters as a pupa attached to a blade of grass. If island marble habitat were to be burned in the winter, when most prescribed fires take place, pupae within the fire area would likely be killed. Winter fires present a similar threat to the mardon skipper. Work by Loni Beyer of Washington State University at Vancouver has shown that these butterflies likely overwinter as larvae at the base of Idaho fescue. Burning the entire Coon Mountain site would risk killing all of the larvae.

With these considerations in mind we met with biologists and fire staff of the Six Rivers National Forest and U.S. Fish and Wildlife Service to discuss how to modify the burn to ensure long-term sustainability of mardon skipper at this site, and also how we might study the impact of this fire on the skipper.

The agency staffers were very open to working with us. Indeed, because they had identified the site as a possible mardon location, they were delighted that we had found it and wanted to do everything in their power to manage for it. But they did have somewhat competing interests; fire was needed to control shrub encroachment and to remove thatch that had built up and was choking out rare wildflowers. Together, we plotted out which areas to burn and which to leave untouched. We also designed a study to test the response of the butterfly to the burn. In the early winter of 2008, around one-third of the area occupied by the mardon was burned.

This past summer, the first after the winter burn, Logan and I returned to Coon Mountain to set up transects to study the mardon skipper in both burned and unburned areas. Initial data from this first year showed us what we expected: the number of skippers in the unburned areas was an order of magnitude greater than in the burned areas. On the other hand, the fescue host plant has responded beautifully to the fire and we did see ovipositing (egg laying) butterflies in the burned areas. For the time being, the shrubs have been pushed back and burned areas are more open and have more light.

Will this management plan ultimately benefit the mardon skipper by providing better quality habitat? Only time will tell, and we intend to continue this study over the next several years to more fully document the butterflies' response to fire. In the big picture, grasslands need to be managed to maintain the open conditions that support the many plant and insect species that live in them. In the quest to manage these prairie and meadow habitats, fire can either be an important tool that benefits these butterflies or a threat to their future survival. Burn size, intensity, and frequency are all

1) Mardon skipper (Polites mardon klamathensis), une 11, 2007, Little Hyatt Reservoir, Jackson Co., OR. Photo by Donald H. Gudehus. 2) Following surveys by Xerces Society staff, a fire management plan was developed for the Coon Mountain site. Part of the site was burned and part left untouched. Monitoring the next summer demonstrated the difference in response by the skippers to the two treatments. 3) Post burn, the only obvious sign of a fire is charring of trunks. The mardon skipper has returned to the improved habitat. 4) Open grassy areas dotted with Jeffrey pines on Coon Mountain in northern California support one of the larggest remaining populations of mardon skippers. 5) P. mardon klamathensis, same data as fig. 1. Photo by Donald H. Gudehus. Photos 2, 3 and 4: Scott Hoffman

important elements when managing for invertebrate species. We hope that fire managers will reach out to butterfly and other invertebrate researchers to gather information allowing them to prepare management plans that meet the needs of all of the wildlife that rely on these small remnant ecosystems. In turn we also hope that entomologists will respond to controlled fires with an open mind. If we all work together, biological diversity will benefit.

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Books/Videos

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

For Sale: Fascicle 118 (Noctuidae) of Lepidopterorum Catalogus by Robert W. Poole. Three volumes/mint condition. $150 for set or best offer. Edgar Cohen 5454 Marsh Hawk Way, Columbia, MD 21045 edcohenfam@yahoo.com 512

New book on American butterflies: R.R. Askew &P.A. v.B. Stafford: Butterflies of the Cayman Islands. Hardback, 24x17cm., 172 pages incld. 6 color plates and 119 color photos. Maps and other figures. US $69.50. Also available: Larsen: Butterflies of West Africa. Hardback 28x21cm.865 pages in two volumes. 125 color plates depicting 1,400+specimens. US $256.00. Monastyrskii: Butterflies of Vietnam, softcover, 21x15cm., Vol. 1: Satyrinae. 199 pages incl. 35 color plates, US $64.00. Many others available. Visit website: www.apollobooks.com or contact Peder Skou, Apollo Books, Kirkeby Sand 19, DK-5771 Stenstrup, Denmark, or ask for a copy of our 2008-09 catalogue. 514

For Sale: The Butterflies of Venezuela Part 2. Price GBP 110 (+postage and packing at cost) Please order from the author/publisher, Andrew Neild (email: andrew.neild@blueyonder.co.uk, phone +44 (0)20 8882 8324 or post: 8 Old Park Ridings, London N21 2EU, United Kingdom. 1451 figures on 84 color plates display all 196 species (355 subspecies) of Venezuelan Acraeinae, Ithomiinae, Libytheinae, Morphinae, and Nymphalinae. 8 new species, 91 new subspecies, 4 neotypes, 10 lectotypes, 272 text pages, 31 figures, 2 tables, 4 maps. Laminated hardback, 22x30 cm. Part 1 also available. Details and sample plates: www.thebutterfliesofvenezuela.com 521

For Sale: Eleven D'brera butterfly books in pristine condition with beautiful dust covers. Titles include: Butterflies of the....Afrotropical Region (1980); Australian Region (1971); Oriental Region (pt 1, 1982), (pt 2, 1985), (pt 3, 1986); Neotropical Region (pt 1, 1981), (pt3, 1987), (pt 4, 1987), (pt 5, 1988), (pt 6, 1994), (pt 7, 1995). For specific info. call Eli Beery 231-947-1152.

Specimens

For Sale: Eggs: Saturnidae: Automeris amanda tucanmana, Copaxa flavolla, Syssphinx molina plus other Saturnids from Argentina. Papered specimens of butterflies (all families), Saturnidae or Sphingidae, alsom some beetles. For a list of all Argentina species, please write or email to Nigel South, Mis Montanas, Los Robles 1818, Villa Los Altos, Rio Ceballos 5111, Cordoba, Argentina. Also

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

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

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

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

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

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

Send all advertisements to the Editor of the News!

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

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

collecting trips in Argentina from September to May. Contact Nigel South for further details. Email: butterfly connections@hotmail.co.uk 514

For Sale or Trade: Worldwide butterflies, moths, beetles. Many rare insects from Central and South America, Laos, Cuba, Borneo, and African countries. We also trade for North American butterflies. Many unidentified species for sale. Check our lists of identified species on our website: www.entomopro.com or visit our shop in Quebec City (contact us first). Yves-Pascal Dion, Insectes Mondiaux, C.P. 1018, Lac-Beauport, QC, G3B 2J8 Canada. Ph/Fax: 418-907-7367. Email: ypdion@entomopro.com 512

For Sale or Trade: Very rare Propomacrus davidi (China) Yoshiaki Furumi, 97-71 Komizo, Iwatsuki-Shi, Saitama-Ken, 339-0003 Japan 514

Wanted: Want to purchase butterfly collections U.S./non-U.S., common/rare. Contact: Brad Black, 2777 Carrington Street NW, North Canton, OH 44720-8163. email: doc3girls@aol.com 514

Wanted: Want to trade butterflies from Japan with individuals from USA and Canada. Shigeo Nomura 1-3 Goryou-cho Higashimatuyama-shi Saitama-ken Japan shigeonomura2@ybb.ne.jp 512

Research

Material needed for research project on geographic differences in Lophocampa maculata. Eggs, larvae (all instars) or adults useful. Will pay for shipping. Please contact Ken Strothkamp, Chemistry Dept., Lewis & Clark College at kgs.lclark.edu 514

Seeking short series (5-10 individuals) of recently collected papered specimens (since 2003) of species in the genus Celastrina from the Americas (especially localities far from Kentucky), Asia, Europe, etc. for a student project in molecular phylogenetics. Good locality data essential. Specimens collected in 2009 are particularly desirable. We are happy to reimburse for postage. Jeffrey Marcus, Department of Biology, Western Kentucky University, 1906 College Heights Blvd., #11080, Bowling Green, KY 42101 USA or email: jeffrey.marcus@wku.edu 511

Seeking egg masses of the Catalpa Sphinx, Ceratoma catalpa (Sphingidae) for research on the chemical ecology of this species. Please contact Deane Bowers at: deane.bowers@colorado.edu or (303) 492-5530. I am happy to reimburse for express shipping. Send to: Deane Bowers, Dept. of Ecology and Evolution, Ramaley N122, UCB 334, University of Colorado, Boulder, CO 80309. 514

The Ecoinformatics lab of Dr. Jeremy Kerr at the University of Ottawa is conducting an analysis of mobility for butterflies in Canada. In the absence of experimental mobility data for the vast majority of species, I will rely on the cumulative knowledge of Canada's lepidopterists to construct a mobility index. I am distributing a survey to people with field experience with butterflies and skippers of Canada. Surveys of lepidopterists in the UK and Finland have produced mobility estimates remarkably similar to those obtained from field experiments. If you have field experience with Canadian butterflies then I hope you will take the time to complete my survey. Visit: www.science.uottawa.ca/~jfitz049/survey.html for more information on this project and to download the survey. Email me: rburk091@uottawa.ca with any questions or comments you may have. 514

Equipment

Light Traps: 12 VDC or 120 VAC with 18 inch vanes (15 & 32 Watt) and 24 inch (40 Watt). Rigid vanes of Stainless Steel, Aluminum, or Plexiglass. Rain Drains and beetle screens to protect specimens from damage. Collecting Light: Fluorescent UV 15, 32 & 40 Watt. Units are designed with the ballast enclosed in a weather tight cast aluminum enclosure. Mercury Vapor: 160 & 250 Watt self ballast mercury vapor with medium base mounts. Light weight and ideal for trips out of the country. Bait Traps: 15 inch

Announcement

2010 Annual Meeting of the Lepidopterists' Society, July 8-11

The 2010 meeting of the Lepidopterists' Society will be held for the first time in Washington State, in the beautiful European-themed alpine town of Leavenworth during July 8-11. Leavenworth is nestled in the mountains on the eastern edge of the Cascades and the surrrounding forests and alpine meadows support a rich and diverse fauna. The meeting will be held jointly with the Washington Butterfly Association and the Pacific Slope Section. Our theme will be "The Young Ones," referring both to advances in the study of immature Lepidoptera and promotion/celebration of a new generation of Lepidopterists.

The International Butterfly Biology conference will be held in Edmonton, Canda June 29-July 2 followed by a Conservation Biology meeting in the same city July 3-7. If you are planning to attend either of these, please also consider joining us in Leavenworth, WA for the 59th Annual Meeting of the Lepidopterists' Society!

Registration forms, hotel information, field trip details and more will be included in the Spring, 2010 issue of the NEWS of the Lepidopterists' Society. Updates will be posted to the Lepidopterists' Society website (www.lepsoc.org).

1) Hanging out in Puerto Morelos before the trip to Chetumal, left to right – Jackie Miller, Christian Salcedo, Olaf Mielke, Mirna Casagrande, Giovanny Fagua, Gisell Molina, and Euridice Leyequien; 2) registration, John R. Beck Jr., Yann Hennaut, Noel González-Valdivia; 3) Meeting site, Museo de la Cultura Maya, Chetumal; 4) museum display, Xibaba, keeper of the Maya underworld; 5) at the Saturday (Ice breaker) reception, Marisol Almaráz, Mercedes Luna, Sandra Muriel, Rossina Seguí; 6) Carmen Pozo, Armando Luis Martínez, Jackie Miller, Jorge Llorente Bousquets, Debbie Matthews; 7) Noel González-Valdivia, Blanca R. Prado Cuellar; 8) Kenneth Bliss, John Beck; 9) Saturday Session introductions, Carmen Rosas, John Shuey; 10) poster session; 11) Manuel A. Balcázar Lara, Jackie Miller.

At the Saturday BBQ, Jae-Cheon Sohn, Andreas Zwick, Akito Kawahara; 2) Armando Luis Martínez, Ana Cecilia Luis-Castañeda, América Castañeda; 3) Blanca R. Prado Cuellar, Tania E. Montejo Cantún, José Manuel Medina Mex, Emigdio May Uc; 4) Back - Jorge Llorente Bousquets, Carmen Pozo, Marysol Trujano-Ortega, Armando Luis – Martínez, front - Rosario Pozo, América Castañeda, Ana Cecilia Luis-Castañeda; 5) Euridice Leyequien, Tijl Anton Essens, Jordi Van Oort; 6) Back – Jackie Miller, John Shuey, Akito Kawahara, Andreas Zwick, Jae-Cheon Sohn, Front – Carmen Pozo, Mirna Casagrande, Olaf Mielke, Armando Luis Martínez; 7) John Shuey, Kim Garwood, Julietta Brambila

An Adventure in the Amazon and a Mother's Final blessing

Gary Noel Ross

6095 Stratford Ave., Baton Rouge, LA 70808 GNR-butterfly-evangelist@juno.com

In the West, science and spirituality often make odd bedfellows. The tension created by the two seemingly diverse disciplines can be quite puzzling. Pity, though. For me, the interplay between the physical and metaphysical constitutes an integrated fabric of life, and that is the source of my greatest inspirations and happiness. As a poignant example, I will relate an incident that occurred in the winter of 1990-1991 in Rondônia, a state located in the western Amazon Basin of Brazil. [In entomological circles, Rondônia is plainly the world's "Butterfly Eden." Surveys begun in 1987 of just a few square kilometers near Caucalândia ("Place of Cacao") have catalogued roughly 1800 species, a record for a singular location.]

My introduction to Rondônia was as a participant in one of Tom Emmel's (Director, McGuire Center for Lepidoptera and Biodiversity) "Expedition Travel" tours. Our small group of kindred sprits resided for the first two weeks in December 1990 at Fazenda Rancho Grande, a 750-hectare (1853 acres) agriculture/cattle ranch/field station owned and operated by the Harald and Barbara Schmitz family. Traveling to this insular real estate was an adventure in itself. We first flew from Miami into the international airport of Manaus, Brazil (Manaus is the capital of the state of Amazonas and on the Amazon River), arriving after midnight. After a few hours of sleep at a hotel, we awoke early to board a small aircraft for the hour-long jaunt to Porto Velho (capital, state of Rondônia and on the Rio Madeira). At the airport we were provided with a large Greyhound-type bus for the 120-mile, three-hour trip to Ariquemas—usually the last name to show up on maps of Brazil. Next, we boarded several vans for the 37-mile, one-hour drive to Caucalândia, an outpost village of just 5,000 people. There we met charismatic Tomas Schmitz (son of Harald and Barbara) driving an open-back truck outfitted with plank seats—our transportation for the final hurdle—a seven-mile dirt road.

Before committing to the Brazil expedition I had some trepidation, it is true. I had just returned from Irian Jaya (western New Guinea) trip with Tom during early November. Ergo, the two ventures were essentially back-to-back. My parents lived about 70 miles east of my home in Baton Rouge and so I visited with them for the Thanksgiving weekend. My mother was experiencing a nagging health problem: shortness of breath. Her physician had diagnosed this as chronic bronchitis, but not of grave concern. She, nevertheless, was apprehensive about my traveling to another distant and remote place especially during the impending Christmas season. But my visit went exceedingly well. Everyone was fascinated with my exuberant recounting of chasing enormous birdwing butterflies along jungle trails and participating in a tribal dance and feast with the Stone Age Dani tribe. And so when it was time for me to return to my home, my mother embraced me and whispered: "I know butterflies are your life. Go with my blessing."

Fazenda Rancho Grande was an oasis in the Brazilian frontier: running water from a well and flush toilets, diesel generated electricity 12 hours each day, TV, room circulating fans, and freshly prepared meals by the affable Schmitzes served in their spacious dining room. During the day, we monomaniacally made forays into the extensive rainforest as well as into peripheral habitats such as banana and cacao plantations and pasturelands. Walking was relatively easy because of the low, rolling terrain (540 feet altitude). At night, some participants set up black-light gear for collecting moths. The diversity of lepidoptera was so extraordinary that each day we collected dozens of different species, including many that had not been logged into the master roster.

By and by departure time arrived—for all, that is, except me. Because I was on sabbatical, I had arranged my itinerary so that I could remain until late February 1991—another 10 weeks. Before I lost my companions, however, I arranged with one to carry a letter I had written to my family for posting in the U.S. in order to expedite correspondence. In the parcel I provided my contacts, but cautioned that all services were located miles away, making communications slow indeed, and logistics for any emergency departure from the ranch could take a week or more. Lastly, I noted that I was in a two-hour advanced time zone.

And so began my odyssey. I took to the field each clear morning with a kind of laid-back adventuresome perkiness. I carried a collecting net and backpack stuffed with a water-repellent poncho, camera equipment, lots of film, and a simple lunch (a couple of dried salami sandwiches, a ripe orange or banana, and a canteen full of water).

The Amazonian rainforest is arguably the quintessential botanical cornucopia. Within the boundaries of the ranch, two basic types of forest dominated: closed canopy and open canopy. In the former, a high proportion of buttressed trees

towered in excess of 150 feet. One, the iconic "kapok" (*Ceiba pentandra*), often emerged 40-50 feet above the emerald sea. Valuable trees such as mahogany (*Swietenia macrophylla*) and the Brazil nut (*Bertholletia excelsa*) were well represented, too. The fluted trunks and limbs of these titans supported bromeliads (especially massive *Aechmea* and *Guzmania*), orchids, aroids, cacti, and a tangle of vines (lianas). Because of the heavy upper-story greenery, the ground was heavily shaded, creating an openness that facilitated walking. Other sites, in contrast, were dominated by somewhat lower trees—including the famous "chicle" (*Manikara chicle*), responsible for chewing gum. Here, the relatively open canopy permitted the penetration of strong light, which in turn, fostered a ubiquitous assortment of feathery palms, bamboos, gingers, and heliconias. Ground-cover vegetation was a potpourri of "hothouse" plants such as Anthurium, *Calathea*, *Dieffenbachia*, *Peperomia*, *Philodendron*, and *Spathiphyllum*, to name but a few. The terrestrial, robust, and pineapple-like bromeliad, *Ananas*, often formed large impenetrable colonies. Walking here was more impeded, and so I usually confined myself to the established trails.

The forest was an expo of butterflies, too. There were, of course, the charismatic metalic morphos (9 species) and super-sized owl-eyed caligos (4 species) as well as hundreds of pint-sized, zany metalmarks (Riodinidae). I, however, was especially impressed with the longwings (heliconians)—25 species, and clearwings (ithomiines)—46 species, both signature taxa for the American Tropics and both reputed to be distasteful to vertebrate predators. Rank and file longwings—usually with bright color schemes—were particularly common along sun-bathed corridors. There they patrolled in search of their favorite orange/yellow flowering vines—*Gurania* and *Psiguria*—from which they would extract both nectar and pollen. On the other hand, clearwings—both "transparent" or "glassy" and "tiger-striped" types—preferred the dark recesses of the forest; with their intrinsically feeble wing beats, they reminded of the mystical will-o'-the-wisp.

On two occasions I even stumbled upon an ithomiine lek. (In ethological parlance, a "lek" is an arena where males of some birds, mammals, fish, frogs, and some insects assemble to display in order to attract females for courting.) Two-dozen or so clearwings were gathered within an area of no more than 500 square feet. Most males perched on leaves 4-6 feet above the ground. Their abdomens elevated, they displayed their peculiar wing hair-pencils—specialized scales located along the anterior margins of the hindwings whose function is to release volatile sex pheromones to attract females. The ithomiine leks also attracted a cameo pierid or riodinid that resembled the clearwings in appearance. (Such beguiling similarities between unrelated species led in the nineteenth century to classical model-mimic theories now known as Batesian and Müllerian Mimicry.)

One morning, while seated beside a narrow trail and simply taking in the scenery, my solitude was interrupted by what seemed to be the sound of agitated insects on the ground. Sure enough, within minutes I was beset by a mishmash of arthropods fleeing a raid of army ants (*Eciton*) known locally as "*marabunta*." Nothing perturbed the advancement of these pros. But because the mass was no more than 10-15 feet across, I was able to remain out of harm's way to simply observe.

The ants attracted sundry winged invertebrates and vertebrates. Dozens of flies, for example, buzzed above the ants—apparently to parasitize them. Two different species of small, dull-colored birds dubbed "antbirds" (passerine family Thamnophilidae) flittered within the low vegetation, systematically nabbing ants. Even several butterflies were part of the motley troupe: Two large "tiger-striped" ithomiines flew lazily barely 3-4 feet above the ants, searching out the conspicuous white bird excrement that the birds continually dropped; and at least a half-dozen species of skippers (Hesperiidae) flashed about, pausing to check out anything white. (Prevailing theory has it that several species of ithomiines and skippers exploit antbirds (and indirectly, army ants) for the nitrogen in the birds' excrement, which in turn aids the female butterflies with egg production.). Although this symbiotic behavior was well known, this was my first encounter with the phenomenon.

The forest was my "happy place." Flying solo and without a schedule, I could immerse myself with research, collecting and photography—all supported by a seemingly endless tableaux.

On Friday December 28 that all changed.

The Schmitz family and I had just completed the evening meal. Outside was dark, rainy. Suddenly there was a knock on the kitchen door. A man, who had ridden in on a horse, stood in his drenched poncho holding up a plastic wrap. "Fax for the Americano," is all he uttered. With hands shaking, I accepted the damp paper.

"MOTHER VERY ILL...PLEASE CALL GRANT ROSS...

HIGHLAND PARK HOSPITAL...ICU WAITING ROOM...(phone no.)"

Time froze. Then Harald broke the tension. "If the road is not washed out in the morning," he encouraged, "we can drive to Caucalândia to try to make the call."

Mercifully, the following morning was rainless and the road passable—although we packed a chainsaw in case a fallen tree was blocking travel. The telephone call went through and I was able to speak to my brother, Grant. Apparently, the original diagnosis of bronchitis by my mother's doctor was not entirely correct. The major problem was a leaky heart valve, and that needed to be replaced. Surgery was scheduled

1) *Caligo* sp. on tree trunk. **2)** *Nessea obrinus* and Eresia sp. on author's sweaty hat. 3) and **4)** Ithomiines displaying with hairpencils erect, releasing phermones to attract females. **5)** *Diaethria neglecta on* leaf. **6)** The author next to *Eupatorium*, a favorite source of nectar and phytochemicals for ithomiine butterflies.

for January 2 and would take about 8 hours; there was an 80 percent chance of success. My mother understood that I would not be able to be present at the surgery. In the end, my brother promised to send a fax as soon as the surgery was over.

January 2, 1991. Since my telephone call, I had tried my best to continue with "lepping." But for this day I decided that I needed a more concentrated task to keep my mind off family matters, and so I opted to devote the day to photography. I packed my camera gear and bulky tripod, and set off.

After about two hours along a path within a sizable tract of closed-canopy forest, I encountered what I first interpreted as a lek. Soon, though, I realized that most of the individuals were small, transparent-winged ithomiines, which were not displaying courtship behavior, but were instead seeking out tiny clumps of white organic matter lodged on the leaves of lower vegetation. Investigating, I found that the white stuff was bits and pieces of fruit that had fallen from the canopy. Looking up for the source, I spotted several howler monkeys (*Alouatta)* leisurely feeding in an enormous fig (*Ficus*) tree—a primary fruit-bearer in tropical forests—positioned about 30 feet off the trail. Apparently the monkeys were messy, wasteful eaters, and so their scraps were raining down like the proverbial "manna from heaven." And so, instead of a lek, I had stumbled onto an ithomiine banquet.

I had no difficulty in positioning my tripod as close to a feeding assemblage as I thought without disturbing the insects. [My equipment consisted of a Cannon AE-1 camera equipped with a 50 mm macro lens and handheld small flash; film was Kodachrome 64.] The butterflies were totally indifferent to my presence. Pressing my luck, I dropped to my knees and inched the tripod closer. No alarm, still. I learned that I could approach within an astonishing 2-3 inches—a distance so short that even my deliberate slow exhalation caused the wings of the butterflies to flutter ever so slightly. For a quick fix, I tried leaning back, taking a deep breath, holding it, and then returning to the camera to focus, set the aperture, position the flash and finally trip the shutter. Then, again leaning backward, I would turn my head aside and cautiously exhale. I shot frame after frame with impunity, each time holding the flash at a different angle. The only factor that limited my inertia was my threshold for enduring the cramping of my legs and feet caused by my unorthodox and extended posturing. When that occurred I easily backed up, removed my equipment, stretched, and then located another "leaf banquet" to begin another session.

Come lunchtime, I took a break from the surreal drama for my own nourishment. As soon as I removed my sandwich from its plastic wrap, a striking blue/black nymphalid butterfly (*Panacea divalis*), alighted on the bread and began probing with its proboscis. Another species (*Nessaea obrinus*) with soft-green underwings quickly muscled in. Both species are normally canopy dwellers, but are often coaxed to the ground by the odors of minerals, salts, fermenting sugars, and nitrogen compounds found in a variety of substances such as feces, blood, sweat, tears, decaying flesh, damp soil, yeasty fruits and other plant exudates—and yes, even sandwich meats. (Collectors in the tropics often employ some of these "exotic foods" to bait trails and trap nets.) Although the behavior was entertaining, I became an impolite host by waving away my "lunch buddies." But not easily intimidated, they simply relocated to my sweaty hat on the ground to continue to dine.

By mid afternoon my euphoria enticed me to venture into the forest to check for additional photo opportunities. Alas, after meandering for nearly an hour, I turned up nothing. Meanwhile, ground level illumination began to dwindle seriously—a cue for impending rain. I knew I needed to backtrack immediately. The forest, however, was nebulous and I had foolishly failed to note landmarks or mark my path.

I didn't panic, however. After all, how far could I have wandered from the trail? So, I placed my tripod upon a fallen tree trunk so that the shinny metal would be visible above much of the ground vegetation, and then began making short sallies in various directions as my mind tried to process my recent movements. As I tapped out of energy, I fell back to the tripod realizing the hard truth: I was lost.

Now I panicked! The hour was nearly five o'clock. I could spare only another 30 minutes or so before beginning my trek back to the ranch if I were to arrive before dark. (Remember, "twilight" varies according to latitude: lengthy at the poles, brief at the equator.) Otherwise, I would be facing a night within the forest—an onerous and spooky world ruled by jaguars, pumas, vipers, and a bevy of smaller but nonetheless potentially lethal creepy crawlers. (Of course, my mind's eye conjured them all.) And what about tomorrow? Since the Schmitz didn't know just which trail I had taken, would I have any chance of a rescue? Patently, my life was now at stake!

Deflated and daunted by this specter of doom, I sat on the tree trunk to try to process my inattentive movements over the past hour. But try as I might, all I could do was to gaze mindlessly as feelings of claustrophobia and helplessness began to surface. Almost reflexively, I moved my lips in a silent prayer for guidance.

But just when I thought all hope was lost, my eyes began to focus on a pile of fallen limbs perhaps no more than 20 feet before me. A peephole in the canopy directly above was tunneling a faint ray of light on the pile. I sensed instantly that I had passed this same brush barely minutes after I had set out from the fig tree. I stood, raised my right hand, and pointing at a 45-degree angle beyond the pile exclaimed in a resonant, genuine voice: "The trail is THERE!"

With my battery now recharged with high-octane adrenaline and with raw instinct controlling my legs, I careened with reckless abandon in my prescribed

direction. And there was the trail! Turns out, I hadn't deviated much from a straight-line trajectory and hadn't traveled too far afield. But because of my eye-level view of the "jungle," I was unable to see the corridor. Although I felt relieved, I was also quite embarrassed. You see, this was not the first time that as a field biologist I had to learn an important life-lesson: When in unfamiliar forest, always mark your route when wandering off a trail. (See "Lost in Costa Rica," Southern Lepidopterists' News, June 30, 2009).

As I paused for my second wind, my body was suddenly racked by a commanding chill and racing heart. My mind flashed: "Mother dead or dying." As my eyes glassed over because of the piercing sadness, I sank to my knees, and in piousness, whispered: "Thank you."

With shocking swiftness, the verdant forest grew black, ominous. A clap of thunder boomed overhead and raindrops began to filter down. I rose, slipped on my poncho, and made a reality check of the hour: 5:30. Aware of the gravity of the hour, I set off in the best unerring jog I could muster, leaving my cumbersome tripod behind.

I arrived at 6:50—rain still falling and lights ablaze in the Schmitz home. My hosts quizzed me about my unusual lateness, but all I could relay is that I had been lost for several hours. None of us uttered a word about my mother, but graciously, Barbara had prepared an especially delicious meal.

The following day was clear. I decided to revisit the fig tree and employ my second Canon AE-1 camera—just in case there had been an undetected problem with the first. Sure enough, the butterflies (and tripod) were still present. This second day's performance was a repeat of the first—with one exception: I did not lose sight of the trail! Satisfied that I had an adequate number of "Kodak Moments" between the two cameras, I returned to the ranch, arriving late afternoon.

Although the day had been dry, rain was now falling. Once again during the dinner hour, there came a knock on the door. And once again, an intrepid messenger on horseback iterating that he carried a fax for the "Americano." Barbara Schmitz accepted and gestured to me. But I said: "I know what it says. You read it."

"MOTHER PASSED AWAY AT 3:30 PM. JANUARY 2, 1991.

PLEASE CALL."

My mind quickly converted the hour to 5:30 Rondônia time, the exact time of my revelation.

In the morning Harald and I drove to Cacaulândia to make the dreaded call. I learned that the surgery had gone well, but the final stitching didn't hold. And before the bleeding could be controlled, the heart failed. Doctors had no good explanation. The family was proceeding with the funeral for January 5 without my presence. Upon my scheduled return in February, they would organize a memorial service.

I decided to remain at the ranch until my originally scheduled time for departure in late February. My work continued to be productive although the number of rainy days steadily escalated, causing me to spend more and more time indoors. On no other occasion did I encounter another treasure trove of butterfly activity. In fact, on January 5, the day scheduled for my mother's funeral, I returned to "my" fig tree. No longer were tidbits of fruit falling, and of course, no butterflies were gathering. The forest had returned to its status quo.

Finally, February 23 arrived. Since my truck ride to Caucalândia wasn't until noonish, I decided to take one final walk around the buildings. No net, no camera, just a perfunctory, dilly-dallied stroll to secure my memory. I spotted three species of butterflies that I had never encountered before—a vivid testimony to the diversity of butterflies in the region. [During my residency I accumulated a total of 1571 specimens representing 400 species, more or less.]

Over these intervening years, my mind has often replayed my time at Fazenda Rancho Grande, particularly those first days in January. Based solely on current cognitive science, I would have to conclude that the surprising tranquility of the butterflies was due to their alcohol intoxication from feeding on fruit that was rapidly fermenting due to high ambient temperature and humidity; that my sudden awareness of the location of the trail was prompted by the remembrance of a recent encounter now resurfacing due to my respite on the log; that my electrifying emotions were due to apprehension or perhaps even that poorly understood "sixth sense" or "intuition" we sometimes experience when someone dear is undergoing trauma; and that the correlation between the time of my mother's death in Louisiana with my dramatic sensations in Brazil was purely coincidental.

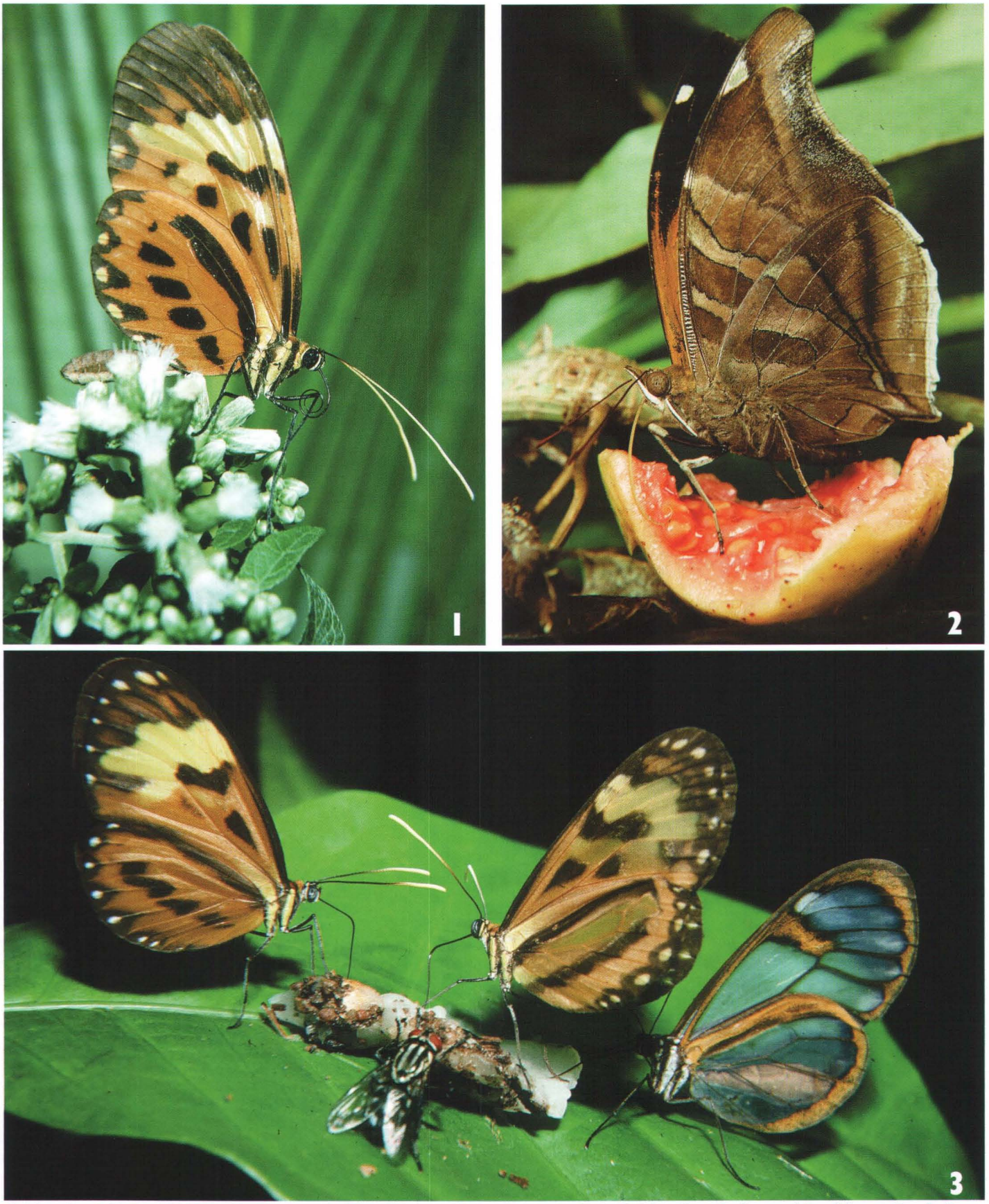
On the other hand, from a spiritual or metaphysical reference, I would believe that my encapsulated experiences and uncanny acumen in the forest were the result of providence, that is, some power greater than myself.

So, which is it?

Your call. Since as I stated earlier, I have blunt-spoken faith in both science and religion, for me January 2, 1991 marks a bittersweet cornerstone in my life. The date, of course, immortalizes the loss of my family's matriarch, and so I mourn. But the date also is a celebration of my mother's transcendence of time and space to empower her son in distress with her most precious and singular gift: LIFE.

"There are more things in heaven and earth, Horatio,
Than are dreamt of in your philosophy."

William Shakespeare: From HAMLET, Act 1, Scene 5.



1) Ithomiine taking nectar from *Eupatorium*. **2)** *Historia* sp. on fermenting guava fruit. **3)** Ithomiines feeding on bits of fermenting fruit lodged on leaves of understory plants.

Membership

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

Kelly Richers,
Assistant Treasurer,
The Lepidopterists' Society
9417 Carvalho Court
Bakersfield, CA 93311

Dues Rate

Active (regular)	$ 45.00
Affiliate (same address)	10.00
Student	20.00
Sustaining	60.00
Contributor	100.00
Institutional Subscription	60.00
Air Mail Postage for **News**	15.00

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

Change of Address?

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

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Natural History Museum of Los Angeles County, 900 Exposition Blvd.,
Los Angeles, CA 90007-4057.
Julian@donahue.net

Our Mailing List?

Contact Julian Donahue for information on mailing list rental.

Missed or Defective Issue?

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

Memoirs

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

Submissions of potential new Memoirs should be sent to:

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Journal of the Lepidopterists' Society

Send inquiries to:

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

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*Send book reviews or new book releases for the **News** to the News Editor.*

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Submission Guidelines for the News

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

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

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

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

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

Submission Deadlines

Material for Volume **52** must reach the Editor by the following dates:

Issue	Date Due
1 Spring	Feb. 15, 2010
2 Summer	May 15, 2010
3 Autumn	Aug. 15, 2010
4 Winter	Nov. 15 2010

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

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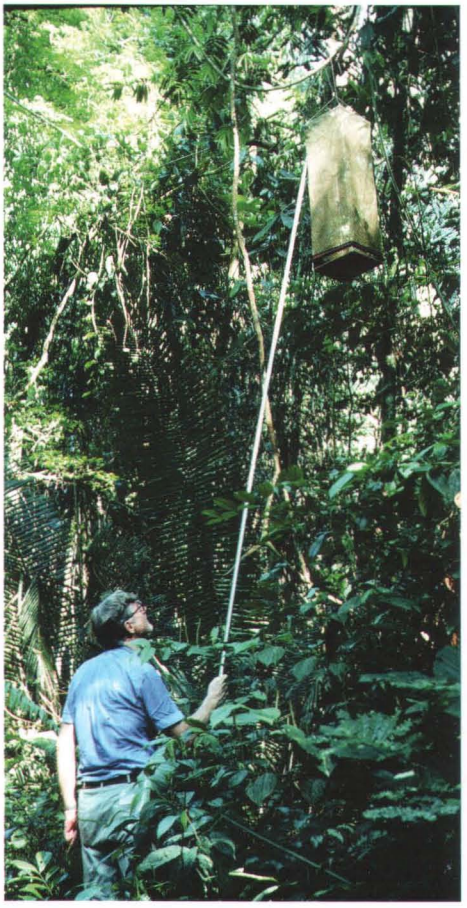

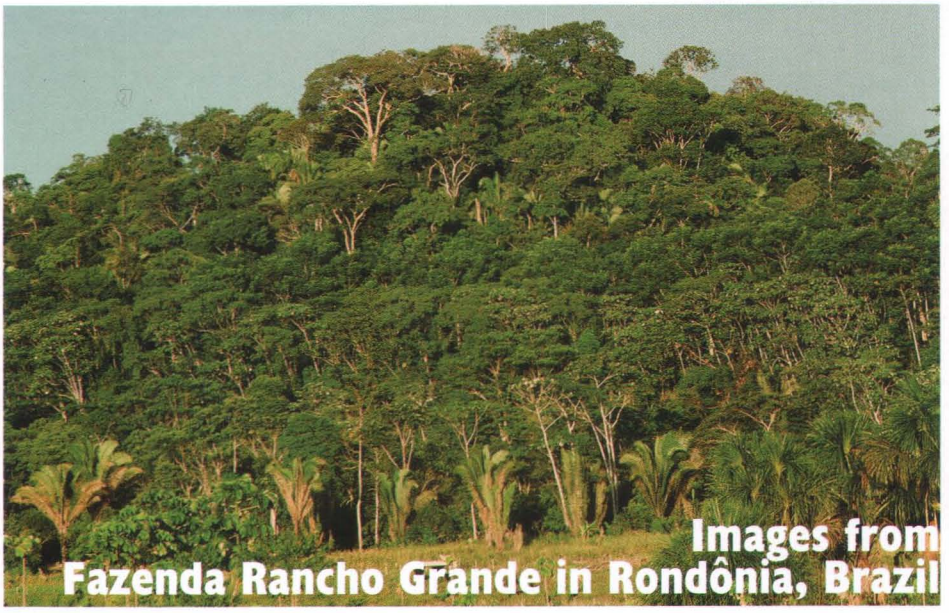
Images from
Fazenda Rancho Grande in Rondônia, Brazil