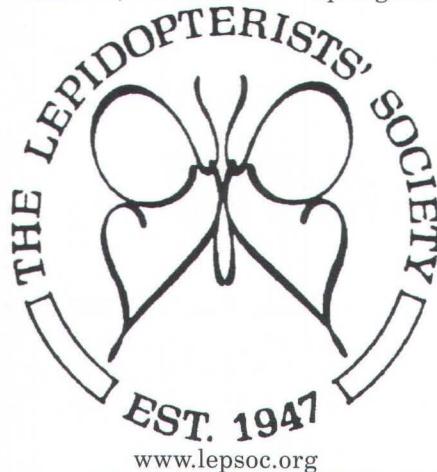


Volume 46, Number 1 Spring 2004



NEWS OF THE LEPIDOPTERISTS' SOCIETY

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**New to the US:
Ziegleria guzanta and
*Erinnyis yucatana***

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**Membership Update...
...and more!**



NEWS OF THE LEPIDOPTERISTS' SOCIETY

Volume 46, No. 1 Spring 2004

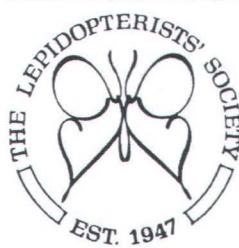
The Lepidopterists' Society is a non-profit educational and scientific organization. The object of the Society, which was formed in May 1947 and formally constituted in December 1950, is "to promote internationally the science of lepidopterology in all its branches; to further the scientifically sound and progressive study of Lepidoptera, to issue periodicals and other publications on Lepidoptera; to facilitate the exchange of specimens and ideas by both the professional worker and the amateur in the field; to compile and distribute information to other organizations and individuals for purposes of education and conservation and appreciation of Lepidoptera; and to secure cooperation in all measures" directed towards these aims. (Article II, Constitution of The Lepidopterists' Society.)

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Front Cover:

Public Display of Affection by Liam O'Brien. Watercolor, water color pencils and ink, 1996. Original: 11 x 15. This painting won 1st Place in the 2003 NABA Artists Contest (see **American Butterflies**, Fall 2003, pp. 44-45) but for the first time in more than 5 years did not appear on the cover of that publication.

Alert:

Tracking the Cactus Moth, *Cactoblastis cactorum* Berg., as it flies and eats its way westward in the U.S.

M. Alma Solis¹, Stephen D. Hight², and Doria R. Gordon³

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In 1989, Terry Dickel, a member of the Lepidopterists' Society, was collecting moths on a sheet at night on Big Pine Key, Florida. He collected a very large phycitine he had never seen before in his extensive surveys of the Florida Keys. He contacted Dale Habeck at the University of Florida at Gainesville who recognized that it was the first U.S. record for *Cactoblastis cactorum* Berg.

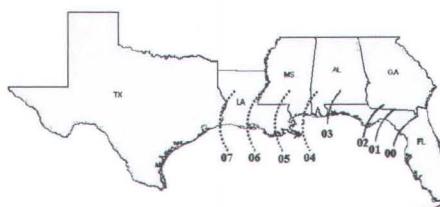
The cactus moth, as *C. cactorum* is commonly known, is historically notorious as a voracious feeder on cacti in the genus *Opuntia*, prickly pear cacti (Figs. 2-5, 9; see pp. 4). The moth is the classic example of a successful weed biological control program. It was introduced from Argentina into Australia in the mid 1920's for the biological control of invasive and non-native *Opuntia* (Figs. 7-8). *Cactoblastis cactorum* was then intentionally spread from Australia into other countries with prickly pear problems. The moth was released into Nevis, an island in the Caribbean, in 1956 where it also destroyed native and non-native *Opuntias*; this action would impact the U.S. in the future.

Dickel's find of *C. cactorum* in the Florida Keys may have been the result of the moth naturally dispersing across the Caribbean, or it may have been introduced unintentionally on horticultural prickly pear cacti imported into Florida (Pemberton 1995).

Scientists at the U.S. Department of Agriculture and the University of South

Florida have followed the northward movement of the cactus moth. By 2002, the cactus moth had eaten its way from the Florida Keys to Folly Island, South Carolina, on the Atlantic eastern coast and to St. George Island, Florida, on the Gulf coast (Hight, et al. 2002).

The late-instar bright orange-red, black-spotted caterpillars eat any prickly pear cactus with flat pads (Platyopuntiae), and in Florida have been found eating *O. stricta*, *O. pusilla*, *O. humifusa*, *O. cochenillifera* and *O. ficus-indica* (Figs. 3-5). The caterpillar also attacks endemic, rare Floridian cactus, like *O. corallicola* and *O. triacantha*. The Nature Conservancy has tried to protect cacti by physically removing the egg sticks (Fig. 1). Adult females of the cactus moth lay eggs stacked one on top of the other so that they resemble the spines of cacti.



Projected spread of *Cactoblastis cactorum* along the Gulf Coast. Solid lines represent observed spread and dashed lines represent potential spread at 100 mi/year (160 km/yr).

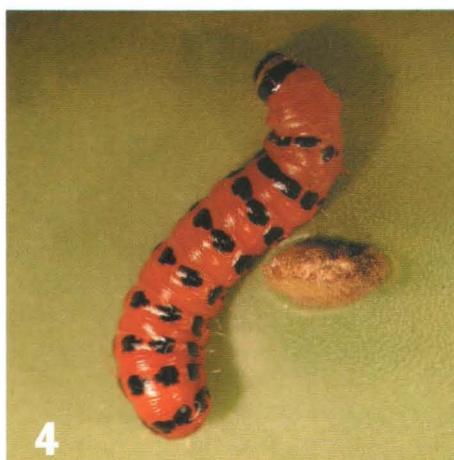
A meeting was held December 9-10, 2003, in Miami, Florida, hosted by USDA, APHIS (Animal, Plant, Health Inspection Service), the U.S. Geological

Survey, and the USDA, ARS (Agriculture Research Service) to discuss the westward movement of the cactus moth beyond Floridian borders. This moth is predicted to move into the western states and south to Mexico once it reaches Texas.

The cactus moth is currently feeding on *O. stricta* along the Gulf of Mexico, and in 2003 it was found as far west as Pensacola, Florida. If the moth continues its westward spread at the recent rate of 100 miles/year, then the insect is expected to arrive at the Texas border by 2007 (see map). The USDA in Florida will not be able to track it beyond Florida due to budgetary constraints and lack of a research mandate for this species.

We call upon the members of the Lepidopterists' Society who live and/or collect in Alabama, Mississippi, Louisiana, and even Texas to keep watch for this moth when they are collecting in the field. To aid in that endeavor we are providing photographs of the immatures and adults of the two most common species that occur in the southeastern U.S. (Figs. 2-6, 9-10) [see also Neunzig 1997]. If you think you have collected either a larva or an adult of *Cactoblastis cactorum* in states along the Gulf of Mexico, please contact Alma Solis at asolis@sel.barc.usda.gov before sending material for identification.

continued on pp. 7



1. Egg stick on cactus pad; **2.** Group of early-instar larvae devastating cactus pad [note white color of larvae]; **3.** Group of late-instar larvae on cactus pad [note red color of larvae]; **4.** Single late-instar larva on cactus pad; **5.** Cactus moth larvae feeding inside cactus pad; **6.** Late-instar larvae of *Melitara prodentalis* (H. D. Hight); **7.** *Opuntia* sp., photographed in Sonora, Mexico (M. A. Solis); **8.** *Opuntia stricta* plant attacked by *Cactoblastis cactorum* (S. D. Hight); **9.** Adult moth of cactus moth (M. A. Solis); **10.** Adult moth of *Melitara prodentalis* (from Neunzig, 1997).

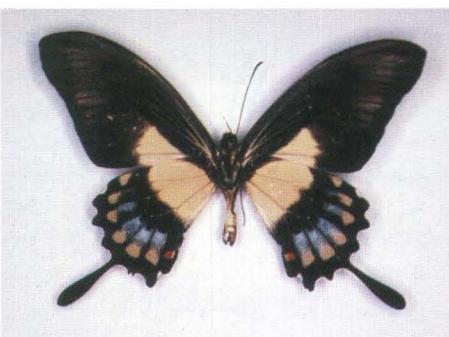
Tracking the Cactus Moth...



Palamedes Swallowtails in the Texas Hill Country

Photo: Palamedes Swallowtail, *Papilio palamedes*, with Redbay (*Persea borbonia*) and Ashe Juniper (*Juniperus ashei*); Hamilton Pool Preserve; June 7, 2002; **1:** male dorsal. Hamilton Pool Preserve, Travis Co., Texas. August 4, 2002. **2:** male ventral, data as per 1. **3:** female, dorsal, Hamilton Pool Preserve, Travis Co., Texas. June 30, 2002. **4:** female, ventral, data as per 3.

Photos and Specimens, Dan H. Hardy.
See his article on the next page.



A "tasso"-like Aberration of *Papilio torquatus*?

This male specimen (dorsal, far left; ventral, left) appears to look very much like the type male of *Papilio tasso* but the author believes it is simply an aberration of *P. torquatus*. Photos by Rick Rozicki. See his article on pp. 7.



Unusual Fruit Feeding Behavior of Julias, *Dryas iulia* (F.)

Julias, *Dryas iulia* (F.), (left) show remarkable tenacity and persistence while feeding at fruit cluster of *Lantana camara* L. Photo by Gerald Einem. See his article on pp. 10.



Erinnys yucatana (Druce), a New U.S. Record from Texas

Specimen (above) taken at light by Greg Muise at Concan, Uvalde Co., TX, on 2 March, 2002. Photo by Ed Knudson. See the article on pp. 11 for details.

Palamedes Swallowtails in the Texas Hill Country

Dan H. Hardy

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I have been surveying butterflies at the Hamilton Pool Preserve near Austin for 3 years. There were no previous studies of butterflies at the preserve, although bird and plant lists had been compiled. Just an hour drive west of Austin, this 232 acre park protects a deep limestone canyon cut by Hamilton Creek and features a collapsed grotto pool which is a favorite local swimming hole. The creek is one of many spring-fed rivers that dissect the elevated limestone plateau that is the Texas Hill Country. Since there is a unique colony of Redbay (*Persea borbonia*) at Hamilton Pool, far west of their normal range, I speculated that Palamedes Swallowtails (*Papilio palamedes*)—which were not thought to occur in Central Texas, but which use Redbay as hostplant—might be present.

On my 17th visit, on September 25, 2001, I was thrilled to encounter a male and female Palamedes Swallowtail engaged in courtship. The swallowtails were subsequently found on ten visits in 2002, but only one adult was found in 2003. There were never more than one or two adults per visit. In 2002 live photographs were obtained (see pp. 5), egg-laying on Redbay was observed, and caterpillars were reared in captivity, and specimens were collected—the first for Travis County (Figures 1-4, pp. 5).

Prior to this study, there were no specimens of Palamedes Swallowtails from the Texas Hill Country, much less any suspicion of breeding. I know of four sight records from the Austin area (2), and the USGS map has three Central Texas counties highlighted (3). There are uncertainties about the numbers of swallowtails in this colony, especially after finding so few in 2003. The colony could be self-sustaining or could be

replenished periodically by vagrants. The swallowtails are hard to spot as they fly rapidly through the Redbay, and during many months there are few suitable nectar plants nearby to concentrate the swallowtails.

The Redbay at Hamilton Pool and the few plants at nearby Westcave Preserve are the only known Redbay in the Texas Hill Country and are 150 miles west of the nearest plants on the coast. They grow on the canyon slopes and prefer the protected south side of the east-west oriented canyon. The plants are common and even locally abundant. In addition to mature trees, there are many seedling plants that form waist-high thickets in some areas.

The canyonland environment of the preserve, at an elevation of 690-930 feet, is quite different from the Redbay habitat of coastal and east Texas, which is either low sandy ridges or wet, low-lying woodland. The Redbay have been identified as *Persea borbonia* (1), but the taxonomy is under study. They are probably a relic population left from an earlier climate regime when the plant was more widespread. The Hill Country has many examples of plants separated from their main range by hundreds of miles, such as the Bigtooth Maples at Lost Maples State Park.

The Palamedes Swallowtail has interesting disjunctions in its range. One population occurs in the southeastern United States, enters eastern Texas, and extends southward along the coast to about Corpus Christi, a distribution that matches that of Redbay in Texas. Another population is found in the northeastern Sierra Madre Oriental of Mexico and is sometimes designated *P. p. leontis*. This second

population is not well described; the hostplant in Mexico is unknown and there are no studies comparing the two populations. Hamilton Pool is 150 miles west of the main US population and 350 miles north of the Mexican population. As already noted, the canyon habitat of Hamilton Pool is different from eastern and coastal Texas. It brings to mind sites in Mexico, such as Parque Estanzuela, near Monterrey, where Palamedes Swallowtails are known to occur.

The distribution of Palamedes and Spicebush Swallowtails in Central Texas are comparable. I have seen both of these butterflies within minutes of each other at Hamilton Pool. Both depend on local colonies of their hostplants growing in sheltered Hill Country canyons. The range of the Spicebush Swallowtail “bulges” westward into Central Texas (4). Colonies of Spicebush (*Lindera benzoin*), although localized, are far more widespread in the Hill Country than Redbay and the Spicebush Swallowtail populations are stable.

It was exciting to find a large and flashy swallowtail unexpectedly breeding in the well-studied Austin area. The population numbers are quite low, but the hostplant is thriving and the site is protected. The isolated Redbay colony at Hamilton Pool Preserve should encourage us to look for and expect butterflies wherever their hostplant is present.

Acknowledgements

I wish to thank the Transportation and Natural Resources Department of Travis County for permission to conduct the census and to collect specimens, the Preserve's staff for help with the surveys, Chris Durden for advice and technical help, and Tom Wendt for help with the botany.

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- 1 Carr, W.R., Rare Plant Survey and General Plant Inventory of Hamilton Pool Preserve, Travis County, Texas. Summer, 1996. Travis County Transportation and Natural Resources Department.
- 2 Personal communications with Chris Durden, Mike Quinn and Chuck Sexton.
- 3 USGS map at www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/tx/710.htm
- 4 USGS map at www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/tx/716.htm

**Cactus Moth...continued from pp. 3**

In 1990, Habeck & Bennett produced a circular on *C. cactorum* with a larval key for Florida species on *Opuntia*. We provide a corrected, updated larval key below.

For in-depth information on *Cactoblastis cactorum*, please refer to the results of a previous meeting held in 2000 (Anon. 2000).

Acknowledgments

We thank Joel Floyd, USDA, APHIS, PPQ, who coordinated the 2003 meeting in Miami, Florida, Ken Bloem, USDA, APHIS, PPQ for figure 11, and Ignacio Baez, USDA, ARS, CMAVE, who provided figures 1- 5. A. Solis thanks J.B. McCraw for writing inspiration.

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A “tasso”-like Aberration of *Papilio torquatus*

Rick Rozycski

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Papilio torquatus is a variable, wide-ranging species with many subspecies known to occur from Mexico to southern Brazil and northwest Argentina. It is quite common in collections and when dealers and collectors received large mixes of butterflies from the Tingo Maria area of Peru, *P. torquatus* would often turn up. A friend received one of these mixes in the early 1980's that contained 24 male *P. torquatus* collected in April 1978. All of them were normal except one, which he noticed had a strikingly different underside. It was subsequently sent to me.

Staudinger described *P. tasso* from Brazil in 1884 but there has been some confusion as to its taxonomic position since that time. Recent workers (Tyler, Brown & Wilson, 1994) suggest a

possible hybrid origin between *P. himeros* and *P. torquatus*. Johnson & Matusik (1987) tend to agree with that position but also with the possibility that the known specimens are either aberrations or a valid species. Although the figured specimen (see pp. 5) appears to look very much like the type male of *P. tasso*, I believe it is nothing more than an aberration of *P. torquatus*, however, further work still needs to be done to determine the true status of *P. tasso*.

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- Johnson, K. and Matusik, D. (1987). The types and status of Papilio tasso Staudinger. J. Lepid. Soc. 41: 108-113.
- Tyler, H.; Brown, Jr., K. S. and Wilson, K. (1994). Swallowtail Butterflies of the Americas: a study in biological dynamics, ecological diversity, biosystematics and conservation. Scientific Publ., Gainesville, FL, 376 pp.

**Key to Florida Phycitine Larvae Associated with *Opuntia* spp.**

1. Orangish-red with conspicuous dark spots forming transverse bands (Figs. 2-4) *Cactoblastis cactorum*
- 1'. Dirty-white to bluish-purple not forming transverse bands 2
2. With small dark spots (older larvae turning purplish) (Fig. 6) *Melitara prodenialis*
- 2'. Without spots 3
3. Dirty white; gregarious *Rumatha glaucatella*
- 3'2. White to dark gray color; larvae solitary *Ozamia lucidalis*

Note: The original key included Laetilia coccidovora (J. H. Comstock). Larvae of L. coccidovora are often found feeding on scale insects, not on Opuntia plant pads. L. Laetilia coccidovora larvae are much smaller, only 8-12 mm long, in comparison to 20-30 mm long for the species included in the key above. The wingspan of L. coccidovora adults is 10-18 mm and that of C. cactorum is 22-35 mm.



1



2



3



4



5



6



7



8



9



10



11

1. *Pontia callidice*, male, Pieridae. July 31 1983, Chamonix, France, 2500 m. Grass slopes to 3400 m. Males "hilltop," larval food plants are *Erysimum pumillum* and *Reseda glauca*. **2.** *Colias phicomone*, male, Pieridae. July 31 1986, Argentiere, France, 2000 m. High alpine meadows to 2500 m. Larvae are found on vetches (Leguminosae). **3.** *Lycaena hippothoe*, f. *eurydame*, male, Lycaenidae. Aug. 4 2001, Simplon Pass, Switzerland, 2000 m. Found in alpine

zone from 2000 to 25000 m, larvae on *Polygonum bistorta*, *Rumex acetosa*, *Rumex acetosella*. **4.** *Boloria pales*, Nymphalidae. July 31 1986, Argentiere France, 2000 m. Found in alpine meadows to 3000 m, larvae on *Viola calcarata*, *Plantago alpina*. **5.** *Boloria napaea*, Nymphalidae. July 20, 1983, Col du Lautaret, France, 2150 m. Stony slopes and meadows, larvae on *Viola calcarata*, *Plantago viviparum*. **6.** *Hypodryas cynthia*, male, Nymphali-

dae. July 31 1986, Argentiere, France, 2000 m. Found in highest alpine areas above treeline, sometimes to snow line, up to 3000 m. Female is brown, larvae on *Plantago alpina*, *P. lanceolata*, *Viola calcarata* and *Alchemilla* sp. Development sometimes lasts more than 2 years. **7.** *Erybia pluto*, Satyrinae. July 21 1983, Col du Lautaret, France, 2300 m. High alpine stony scree slopes and moraines to 3200 m., larvae on *Festuca*, *Poa* and *Sesleria* sp. **8.** *Erybia pandrose*, Satyrinae. July 22 1983, Col du Calibier, France, 2400 m. Habitat up to 3100 m., larvae on *Festuca*, *Nardus* and *Sesleria* sp. **9/10.** *Erybia gorge*, Satyrinae. July 19 2002, Stubnerkogel, Austria, 2200 m. Often found above 3000 m, larvae on *Festuca*, *Poa* and *Sesleria* sp. **11.** *Oeneis glacialis*, Satyrinae. July 26 1983, Little St. Bernard Pass, France, 2180 m. Found up to 2600 m, larva on *Festuca* sp. All photos by George O. Krizek.

Butterflies of the Highest European Mountains

George O. Krizek

2111 Bancroft Pl., NW, Washington, DC, 20008

The Alps form the largest and highest mountain chain in Europe. Based on elevation above sea level (a.s.l.), they can be divided into several zones characterized by their specific flora and fauna. Switzerland, a typical alpine country, serves as a useful territory for studies of high altitude Lepidoptera.

There are approximately 175 species of Rhopalocera found in Switzerland at the present time, however, 139 of these species inhabit the lowest elevations, called "kollin," an area substantially altered by human activity and colonization. The highest elevations of this zone reach about 800 m a.s.l. and the original vegetation was mixed oak forest.

The next higher elevation zone is called "montan," "Buckenwald," or "Bergstufe." Here the original vegetation was beech forest up to the highest altitude of about 1700 m a.s.l. and some 149 species of butterflies reside there.

Above this lies the "subalpine" zone where the vegetation is largely coniferous forest (larch, spruce and "mountain" pine) up to the tree line at between 2100 and 2500 m a.s.l. The altitude of the tree line depends on the local orientation and situation of the slopes but some 97 species of butterflies are found there.

The highest reaches of the peaks that are used by butterflies is the "alpine" zone, lying between the tree line and about 3200 m a.s.l. Here there are only about 41 butterfly species, typical of high altitude species that many lepidopterists and photographers are particularly interested in. The typical alpine meadows proceed upwards through stone slopes, gravel fields and moraines to the snow line and the edges of glaciers.

Above the alpine zone lies the arctic-nival zone where there are no butterfly species present, although one sometimes finds exhausted death-head

sphinx moths (*Acherontia atropos*), or specimens of *Agrius convolvuli*, a very strong sphinx moth that may not have managed to cross the mountain passes on their way from southern Europe or Africa. One might find the occasional *Aglais urticae* or *Papilio machaon* up near the snow line but these are uncommon.

The tree line is the best place to visit since one may encounter species from lower altitudes that do not trespass much above the tree line but may also find alpine species that rarely descend below it. The best time to visit these areas is at the end of July and beginning of August. I include a small limited collection of photos (see opposite) of butterflies from the European alpine zone from Austria, France and Switzerland. Note that I have made no attempt to cover all of the families but present those most frequently encountered (or desired to be encountered).

Election Results 2004

A total of 566 valid ballots, excluding those that were completely blank, were received on time (the stated deadline was January 15, 2004). The names of the successful candidates are given in *italics* below. Note that write-in votes were considered valid only for members in good standing of the Society.

President-Elect

James K. Adams 507

write-ins:

Ronald R. Gatrell 1; Jeffrey Glassberg 1; Carla M. Penz 1; David L. Wagner 1

Vice-Presidents

(3; no more than one per country)

Gary G. Anweiler (Canada) 343; *Marc Epstein* (USA) 310; *Bernard Landry* (Switzerland) 281; *Daniel Rubinoff* (USA) 215; *Niklas Wahlberg* (Sweden) 321

write-ins:

Keith S. Brown, Jr. (Brazil) 1; *David C. Iftner* (USA) 1; *Dale F. Schweitzer* (USA) 1; *David L. Wagner* (USA) 1

Members-at-Large

John H. Masters 222; *Robert M. Pyle* 415; *John A. Shuey* 251; *James M.*

Taylor 154; *Andrew D. Warren* 305; *Reed A. Watkins* 198

write-ins:

Ronald R. Gatrell 9; *David C. Iftner* 1

Secretary

Ernest H. Williams 503

Motion for Honorary Life Membership

Yes 503; No 10

Respectfully submitted,

Ernest H. Williams,
Secretary

Unusual Behavior of Julia Butterflies, *Dryas iulia* (Fabricius), Feeding at *Lantana* Fruit

Gerald E. Einem

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Although there have been numerous observations of adult lepidopterans feeding, many basic questions have yet to be investigated (Scoble 1995). For example, Scoble asks what substances adult Lepidoptera seek when they feed and what substances stimulate feeding? This report of adult Julia butterflies, *Dryas iulia* (F.), does not seek to answer Scoble's questions but it may provide some insight and direction for further investigation.

Those who have written about the feeding habits of adult Julias note that they feed at flowers and that these may provide sources of nectar (Pyle 1981, Opler 1984, De Vries 1987). However there are no reports that Julias feed on sap, dung, carrion, fruit or pollen, or other material sought by many other Lepidoptera (Adler 1982, De Vries 1987). Although *D. iulia* is a member of the nymphalid subfamily Heliconiinae, only members of the genus *Heliconius* eat pollen (Gilbert 1972). In Florida, Julias trapline nectar sources, especially the flowers of lantana (*Lantana* sp.) and shepherd's needle (*Bidens* sp.; Opler 1984). However, Julias gather to puddle on damp ground and sandy riverbanks (Sbordoni & Forestiers 1985, Scott 1986).

This is the first report of adult Julia butterflies feeding at fruit, particularly the fruit cluster of a *Lantana* (Verbenaceae). Further, I report that Julias feeding at lantana fruit exhibit an unusual intentness and preoccupation, ignoring stimuli that might otherwise put them to flight. That this behavior may indicate the presence of a potent or concentrated phagostimulant and the possible nature of this stimulant is discussed.

Observations

Julias were observed in my garden and neighborhood at La Peñita de Jaltemba, Nayarit on the Pacific coast of México where this butterfly was flying and feeding almost daily from late November 2002 through March 2003. In the garden, Julias were frequently the most abundant species of butterfly feeding on a yellow-flowered lantana (*Lantana* sp.), a cultivar I had planted. However, along the roadsides they also fed at the flowers of *Lantana camara* L.

In another part of the garden near the yellow lantana, fruit was provided to attract butterflies. One or more kinds of fresh or overripe fruit were placed on the ground daily including bananas, oranges, papaya, guanabanas, mangos and watermelon. The fruit attracted the Malachite, *Siproeta stelenes biplagiata* (Fruhstorfer); Dirce Beauty, *Colobura dirce* Linnaeus; Blomfield's Beauty, *Smyrna blomfieldia datis* Fruhstorfer; Grey Cracker, *Hamadryas februa ferentina* (Godart); Seasonal Leafwing, *Zaretis elllops* (Felder); White Morpho, *Morpho polyphemus* Doubleday & Hewitson; an owl butterfly, *Opsiphanes cassina fabricii* (Boisduval) and others. Each species fed at one or more of the kinds of fruit provided. Notably, however, the Julia and other species of Heliconiinae, the Juno Silverspot, *Dione juno huascuma* (Reakirt); Mexican Fritillary, *Euptoieta hegesia hoffmanni* Comstock; Gulf Fritillary, *Agraulis vanillae* (Linnaeus) and Zebra, *Heliconius charithonius* (Linnaeus) fed at the yellow lantana flowers but never at the fruit offered nearby.

Therefore I was quite surprised when on 31 March 2003 I found Julias of both

sexes feeding at a cluster of fruit on *Lantana camara* (see photo on pp. 5). The lantana, a woody bush about one meter high, had many inflorescences containing both flowers and fruit (often green) and infructescences, which had only fruit. The Julias fed at a fruit cluster having large deep blue globose-shaped fruit, apparently ripe, and some smaller withered fruit. (The plant had not benefited from rain for two months or more and most days had been warm and intensely sunny.)

The butterflies approached the fruit by flying upwind and when they landed always chose one particular fruit cluster, ignoring all other fruit clusters and flowers. As many as three Julias fed at one time but there was much jostling for position since the landing area was small. Once they had landed on the fruit they extended their proboscis and rapidly probed areas where it was difficult to see the exact location of the tip of the proboscis. While taking photos of the Julias I was as close as 20 cm from the feeding butterflies yet my close approach did not disturb their feeding. Using my fingers I repeatedly stroked both forewings of two of the Julias as they fed yet neither of them flew or appeared to change their feeding behavior.

Compared to the usual very rapid feeding of Julias at lantana flowers these butterflies often spent one minute or more at a feeding location and if disturbed by another Julia flew about but soon returned to the same fruit cluster. This cluster was carefully inspected for the presence of other insects, especially aphids and their honeydew, but none was found. As the Julias fed at the fruit cluster other

Erinnyis yucatana (Druce), a New US Record Sphinx Moth from Texas

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While collecting in Concan, Uvalde Co., TX, on 2 March, 2002, the senior author took a sphingid at light, which was papered, as it appeared to be a female specimen of *Erinnyis ello*, which is not uncommon at this location. About a year later, it was relaxed and spread and was found to be quite different from *ello*, as there were no black and white bands on the abdomen and the hindwing was more crimson than is usual for that species. After consulting D'Abrera, 1986, it was determined to be *Erinnyis yucatana*, which had not been previously reported from the US. This specimen was later examined by the junior author; the determination was confirmed, and the specimen was photographed. The specimen (see photo on pp. 5) is in the G.D. Muise collection, in San Antonio, Texas.

According to Mooser, 1940, *Erinnyis yucatana* occurs in central and southeastern Mexico. The junior author collected a female specimen in Cd. Victoria, Tamaulipas, Mex., on 21 Oct. 1973. We have not seen a male example, but according to D'Abrera, the male has a darker diagonal line across the forewing, much as in males of *E. ello*, or *E. obscura*. We have not found any life history information on *yucatana*.

In Texas, *yucatana* might also be confused with females of the rare stray, *E. oenotrus*, which also lacks abdominal banding. The forewing of *oenotrus* has a distinctly different pattern, lacking the thin, dark line from the base, and the hindwing has a diffuse, black outer band.

In closing, we note that since the advent of the 21st century, there have been reports of many tropical Lepidoptera that have strayed across the Rio Grande, into Texas. Some of these have been reported in this publication in recent years. Above average rainfall and winter temperatures, may have contributed to this, but an increased interest and awareness of Lepidoptera in the region surely has helped.

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butterfly species, attracted to the same bush, fed at the flowers. These lepidopterans included *D. juno*, *Agraulis vanillae*, and *Anartia fatima* Godart, the Banded Peacock, however, none showed any interest in the fruit cluster where the Julias were feeding.

Discussion

Adult butterflies attracted to potent or concentrated amounts of a phagostimulant often feed with an appearance of intentness and preoccupation ignoring stimuli that would otherwise put them to flight. Downes (1973) found that butterflies feeding at puddles slightly enriched by organic runoff increased in number, were far less easy to disturb and increased probing with the proboscis when dung and especially carrion were added to the water. Beebe (1955), using a withered plant of *Heliotropium indicum* L. as a lepido-

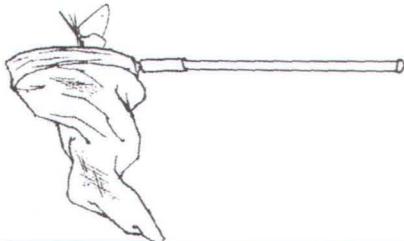
pteran bait, found that it was a remarkably efficient attractant for butterflies in the subfamilies Danainae and Ithomiinae and moths in the family Arctiidae.

Beebe explained that soon after one of these lepidopterans alights on the bait the proboscis begins probing and prodding and some substance affects the whole behavior of the insect. They lose their timidity, Beebe says, and will often permit being picked up by the wings, examined and placed back on the bait. Furthermore these lepidopterans were not intoxicated as when feeding on fermented fruit because once on the wing their flight was swift, accurate and typical. Using the same bait as that used by Beebe, Pliske (1975a) described day-flying moths (Arctiidae) that were so engorged from feeding that they fell to the ground and tried to escape by crawling.

Since Beebe reported this remarkable feeding behavior Pliske et al. (1976) identified the phagostimulants that attracted the ithomiines as volatile esterifying moieties of alkaloid molecules liberated from pyrrolizidine alkaloids (hereafter called "PAs"). The stimulants are released as the withered plant decomposes; however it is the PA itself that Danainae, Ithomiinae and Arctiidae actually need, not the phagostimulant that is the attractant. For many of these Lepidoptera it has been demonstrated that the PAs are used as precursors for the synthesis of sex pheromones and may be used in chemical defense (Ackery & Vane-Wright 1984, Brown 1984, Boppré 1990, and Conner et al. 2000).

My observations of Julias feeding at lantana fruit clusters are remarkably similar to the feeding behaviors desc-

continued on pp. 14



Mailbag...

Dear Editor,

Just read the Winter 03 issue and thought I'd say again how much the **News** has improved and how good it looks.

You know that I won't let you off the hook completely. In Brush Freeman's article on Black Witches (how appropriate for a Fall issue), I found this: "We worked around the moths for the remainder of the day and also noted large numbers of dragonflies cursing over the nearby yards..." I do hope that mothers held their hands over their kids' ears and, I wonder, how did dragonflies learn to do this anyway? Well, it was Texas, so you never know.

The Winter issue, too, had gremlins, especially pp. 122. The SFTPOTA (Society for the Preservation of the Apostrophe) objects to: "in addition to material collected by the Shepherd's..." and another of these a few lines further on. Still further on, Glenn Gorelick apparently used the Shepherd's collection to do research on a new genus, *Callophyrs*, but I guess it was never published.

Still, overall, it's a A+, so pat yourself on the back and go get yourself a larger hat! We've never had it so good!

Rudy de Mordaigle

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Dear Editor:

George Krizek's article "Guatemala: Dangerous for Lepidopterists!" (News of the Lep. Soc., 45(3): 74), requires a strong rebuttal. It is unfortunate that Mr. Krizek had an unpleasant experience in Guatemala last year, but

I don't think that this should be taken as an indication of what others should expect in the country.

I have spent considerable time in Guatemala during the past 5 years and have organized several Lepidoptera collecting and/or watching trips there as well as other tour groups. A total of 12 trips to Guatemala and I have never experienced a problem of any kind whatsoever. Actually I have a very contrasting experience to Mr. Krizek's. The Guatemalan people have been very helpful and accommodating to the needs of a lepidopterist.

True there is a lot of crime in Guatemala, but nearly all of it is in Guatemala City or in popular tourist destinations. I find that the Mayan people that populate most of rural Guatemala are impeccably honest and law abiding. Problems stem from the predominately ladino population in Guatemala City. Guatemala is an extremely poor country and most of its people live a lifestyle well below what we would call a poverty level here in the US. Thus burglaries, car thefts and petty crime is quite a problem in certain areas. However, even as car theft is the major problem in Guatemala City, the rate of car theft is less than that of Phoenix, Arizona and many other US cities. But if you are seeking the less populated areas, much better for Lepidoptera, you will avoid these problems anyway.

Yes, you will see many armed guards with automatic weapons throughout the country, particularly in banks and at gasoline stations. However, this is a situation that people in Guatemala (and many other third world countries) find reassuring rather than alarming as Americans do. Unfortunately tourists

are often targeted for theft, in Antigua, Chichicastenango, Atitlan and on volcano climbs as well as in Guatemala City. But, this is probably for the same reason that Willie Sutton robbed banks, "that is where the money is." There is no animosity for tourists or for Americans as there is in many other countries. Americans are never targeted for violence in Guatemala as they are in many other countries in these days of unpopular US actions in Iraq in the post 9/11 world.

Volcano climbing is a precarious activity because it is mostly affluent visitors that make these climbs and the climbers are usually on foot or horseback during the climb. In addition the climbs are usually at night as most want to reach the rim to see the sunrise. All of this makes them an easy target for the lawless element. If you visit Guatemala and plan to climb a volcano, this is the one situation where I would recommend that you join an escorted group, otherwise it is unnecessary.

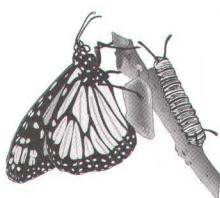
On one of my butterfly tours to Guatemala, a participant left her camera at Tikal. Two days later, when we were back in Guatemala, I placed a phone call, her camera was located and delivered to Guatemala City. We had left and returned to the United States before her camera got there, but another Guatemalan hand carried her camera to Miami, on a later trip there, and then mailed it to her.

Guatemala can be extremely productive for Lepidoptera. I personally favor it over any other Central American country. In fact it may be the best possible place for Americans to experience neotropical Lepidoptera. Guatemala is easy to reach, just four hours

by air from Los Angeles and quite inexpensive compared to other places in Central America, such as Belize or Costa Rica. Every ecological system in Central America can be found in Guatemala, often in close proximity as the country is rather small but still having extremes in elevation from sea level to well over 10,000 feet. A visitor to Guatemala can also work the Pacific drainage (to the west) and the Atlantic (Caribbean) drainage (to the east), with their very different faunas, in the same trip. My preference, however, is to journey into El Salvador for collecting on the Pacific drainage.

The season and locality, however, are very important to maximize the lepidopteran experience in Guatemala. The Highland region where Krizek visited (Antigua, Lake Atitlan, etc.) is very pleasant climate wise (often referred to as the land of eternal spring), but probably not the best for lepidoptera. Large coffee plantations and truck farms have taken over the landscape in this region and pushed the small Mayan farmers up on very steep slopes where they plant corn and sustenance crops. The cloud forests are pretty decimated or gone here. Better areas for lepidoptera are in the east of the small country; in the Sierra de Minas, east of Purulha and in the rainforests in the Atlantic lowlands. Species diversity is also greater in the "wet" season that starts during June and last until November each year. Krizek's article is incorrect and misleading in saying that "June is the last month with heavy rain".

Another mistake in the article is the identification of *Miraleria cymothoe* (including photo on page 72). *Miraleria cymothoe*, is not known to occur in Guatemala or anyplace else in Central America. It is a species confined to Venezuela, Colombia and Ecuador. Krizek's photo is very sharp and clear, but it is impossible to make a positive identification from it. I would place the butterfly photographed in the genus *Greta* which has four species known to



Metamorphosis...

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

William E. Armstrong

of Hadley, New York. Lt. Cdr. Armstrong first joined the Society as a Life Member in 1971. (*information from his widow, Wilhelmina Armstrong*)

Chua Chye Chua

of Singapore, on 2 November 2003 at the age of 87. Mr. Chua, who first joined the Society in 1966, is survived by four sons, one daughter, nine grandchildren, and eight great-grandchildren. His insect business is being carried on by Mary Chua, who informed us of his death.

John T. Cooper

of Paradise, California, U.S.A. Mr. Cooper was a member of the Society from 1965 through 2000. Recent mail returned marked "deceased," no further information available.

Claude Lemaire

of Gordes, France, on 5 February 2004. Dr. Lemaire, noted for his monumental contributions to our knowledge of the Saturniidae, first joined the Society in 1965, and was elected an Honorary Life Member of the Society in 1992.

Michael J. Smith

of Folsom, California, on 12 December 2003, of bacterial meningitis. Mike, a member of the Society since 1967, was well known to members as the Secretary (1995-1998) as well as for his work on butterflies and sphinx moths.

C.E. (Calvin) Schildknecht

of Gettysburg, Pennsylvania, on 24 December 2003. Schildknecht, a native of Frederick, Maryland, was best known for his work in polymer chemistry and the numerous books he published in that field, beginning with the seminal *Vinyl and Related Polymers* (1952). Throughout his many years of chemical research in industry and as a professor at Gettysburg College, he avidly pursued the study of butterflies in the U.S. and Europe. In addition to notes he published in the *News of The Lepidopterists' Society*, he published many articles on the Monarch butterfly and butterfly gardening in newspapers and magazines in the United States and Germany. Schildknecht had been a member of the Society from 1973 through 1995. (*contributed by David Schildknecht, Cincinnati, Ohio*)

Catherine Stevenson

of Alberta Parks, Bentley, Alberta, Canada. Ms. Stevenson was a Life Member of the Society who first joined in 1988. Recent mail returned marked "deceased," no further information available.



continued on pp. 14

Mailbag...continued from pp. 13

occur in Guatemala. *Greta* differs from *Miraleria* in having a bifid humeral vein. The humeral vein, which cannot be seen in the photograph, is straight and non-bifid in *Miraleria*. In male *Greta*, and the photo appears to be a male, the 3d vein is atrophied and does not completely close the cell in the hind wing. In *Miraleria* the cell is always closed. However, black scales usually extend across the end of the cell in both species and make this character hard to discern. Richard Fox, who was the recognized guru on Ithomiidae, used to bleach the wings on one side in order to carefully examine in neuration in making determinations.

Mr. Krizek mentions sighting a large nymphalid, "looking like *Adelpha melanthe*, but twice as large". My guess would be that this was *Anetia thirza*, a danaid that used to be quite common in the Antigua area, and still is in the Sierra de Minas. *Thirza* is a spectacular looking butterfly that I regard as a cloud forest indicator species. *Adelpha melanthe* also occurs in this region.

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Julia...continued from pp. 11

ribed by Downes and Beebe, particularly the appearance of intentness and preoccupation when feeding. The Julias did not respond to the possibility of predation or capture by taking flight when being stroked while they were feeding and this is not their usual behavior. De Vries (1987) described the Julia as often difficult to capture due to its alertness and rapid flight.

So what then is the potential phagostimulant that attracted the Julias to the lantana fruit cluster? It is probably not PAs, already discussed, since these compounds are not known from *Lantana* or in fact from any Verbenaceae (Ackery & Vane-Wright 1984). Moreover, Julias are not likely to be attracted to sugars or fermentation products found in injured or withered

Announcement...**5000th Member Entered in the Society's Database**

Julian Donahue

On 3 January 2004 the 5000th record in the Society's membership database was created for new member Gil Quintanilla of Mission, Texas. In late 1984 the Society transferred its membership records from 3 x 5" card files to a custom computerized database system ("LEPSOC"), which has been used to maintain the records ever since. Analysis of some benchmark records reveals that the rate of adding new members has been steadily declining. In the 36.5-month period from 5 May 1995 (when the 4000th record was created) to 21 May 1998, 500 new members joined at the annualized rate of 164.4 per year. In the following 20.5 months, 200 members joined at the rate of 117.1 per year, and in the most recent 47 months 300 members joined at the rate of 76.6 per year.

More dramatically stated, **in the past five and half years new members have been joining the Society at less than half the annual rate of that in the preceding three years** (47%, to be exact). The net number of active Society members (currently about 1,250) has been declining because attrition (non-renewal, resignation, death) has exceeded new memberships. You can help rebuild our membership in two ways: retain the members we have and actively encourage fellow lepidopterists to join the Society. Applications for membership may be downloaded from the Society's website (www.lepsoc.org), and one is bound in the center of the *2002 Membership Directory*.

lantana fruit. If Julias were attracted to these substances then they would be expected to also have been attracted to one or more of the many fermenting fruits placed in my garden. Further, Julias have not been reported to have an attraction to fruit.

My observations of Julias feeding at the fruit cluster suggest that the potential phagostimulant is a volatile chemical and not, at least entirely, a visual cue. I noted that Julias always approached the fruit flying upwind as though to "home in" on the source of the phagostimulant. Moreover, if the cue was visual then Julias should have also been attracted to some of the many other similar looking fruit clusters, although the possibility exists that the first Julia on the fruit cluster would attract others. However I suspect this is not what occurred since Pliske (1975a), using PA-containing plants in a controlled experiment, found that

butterflies were not attracted to pinned butterflies placed on an unattractive *Heliotropium* bait.

I propose that the potential phagostimulant at the lantana fruit cluster is a substance also found, but probably at much lower concentrations, in lantana nectar. Any phagostimulant in the nectar is also a potent attractant (probably found in small amounts in each flower) since Julias will feed at lantana ignoring other nearby flowers attractive to butterflies (pers. obs.). Further, the attractiveness of the lantana fruit cluster may be due to injury or withering of the ripe fruit or to the presence of exudate from "scars" on the receptacle where fruit has been aborted or otherwise dislodged. In PA-containing plants the adult butterfly phagostimulants are often most concentrated in inflorescences (including nectar), fruit and seeds (Pliske 1975a & 1975b, Brown 1984). Likewise

lantanas may have a phagostimulant in their nectar as well as in withered or injured parts of the plant such as the fruit cluster.

Julias appear to be aposematic and mimetic as they fly about a lantana often with several other lantana-seeking species of Heliconiinae which also display bright orange dorsal wings (pers. obs.). Although not immune from predation, heliconiines, including the Julia, have been shown to often be unpalatable to birds (Brower et al. 1963, Brower & Brower 1965). Their larval plants are Passifloraceae, a plant family known to include species containing toxic cyanoglucosides (Conn 1980); it has been shown, though, that some Heliconiinae including the Julia may not sequester these compounds from the larval host plant but obtain them by *de novo* synthesis (Nahrstedt & Davis 1983). Little is known about how Julias are defended from predators but the presence of cyanoglucosides, their conspicuous behavior, unpalatability, and mimetic and aposematic appearance suggest that they are defended.

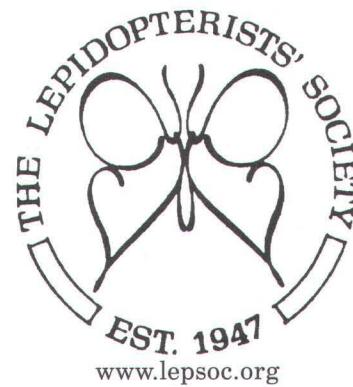
Lantanas contain toxic and perhaps emetic substances such as tetra-terpenes, which if imbibed and sequestered during adult feeding may provide a defense against predators. These or similar substances could, I suggest, be obtained from the lantana floral nectar or from exudates from injured or withered plant parts. Recent research has changed some early assumptions about how Lepidoptera obtain substances such as cardenolides, alkaloids or cyanoglucosides for chemical defense. For some Lepidoptera the rôle of adult feeding as the primary source of these phytochemicals or to augment those obtained by larval feeding has shown increased importance. Moreover, for certain moths and butterflies larval feeding on host plants that contain toxic or unpalatable chemicals may not provide for the chemical defense of the adult (Rothschild et al. 1979, Nahrstedt & Davis 1981, Brown 1984, Kelley et al. 1987, Trigo et al. 1996, Conner et al.

2000, Einem, submitted).

As for the Julias, whatever it is that caused them to feed at the lantana fruit cluster is still an enigma as it was in the early observations of Beebe (and of Hagmann (1938) and of Moss (1947) before him) who puzzled over the reason behind the eager feeding of a host of lepidoptera at his withered *Heliotropium* bait.

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Nocturnal Nectaring by Microlepidoptera, A Rare Phenomenon?

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During an inventory of moths on San Clemente Island, California, on Sept. 27, 2002, John De Benedictis and I observed large numbers of moths, including several species each of microlepidoptera and pyraloids, at flowers of a staminate Coyote Brush (*Baccharis pilularis*, Asteraceae) at dusk (1900 PDT). I had not previously seen this behavior by small moths, so I made an effort to record species and numbers active at the flowers after dark.

Between 1930-2000 PDT, 29 species were observed, which is 12% of the fauna recorded for the entire island (145 km² in area). Included were 5 species of gelechioid, plutellid, and tortricid moths, 2 pterophorids, and 7 pyraloids (Table 1). There was no significant difference between the sexes attracted (50:50 among microlep vouchers and 55% males overall; n = 45). Only one species of the 29, *Elpiste marcescaria* (Geometridae), is a larval feeding specialist on *Baccharis*. By comparison, only 12 species of moths were attracted to a blacklight sheet ca. 50 m uphill from the *Baccharis* between 1900-2030, and 41 species were captured in an overnight trap nearby. In my experience this was a rare phenomenon, and exceptional seasonal and local conditions may have set the stage.

September is towards the end of the long dry season in California, and 2001-2002 was exceptionally arid in southern California, with only about 2 inches (3.2 cm) of rainfall recorded at San Clemente Island for the whole year. The evening of September 27 was relatively warm by Channel Islands standards, 63-64°F (17-18°C), and overcast in advance of a weak storm system that

brought brief showers the following morning (i.e., about as close as we get to a Holland's "Sugaring for Moths" kind of evening in coastal California). There was a moderate breeze, which may have been a factor in olfactory detection of the flowering *Baccharis*.

The habitat was weedy, the result of decades of sheep ranching, feral goats and pigs, and occupation by the U.S. Navy for the past half century. The *Baccharis* was an isolated shrub in an area with nothing else in bloom. Moths were too numerous at the flowers to effectively count because the shrub was large and spreading (ca. 3-4 m in diameter, 1.5-2 m high) so only a part of it could be observed from any given spot, and it was situated in the middle of a large patch of prickly-pear cactus (*Opuntia littoralis*), which hindered accessibility and capturing actively moving moths.

Using vials rather than a net so as to minimize disturbance, I tried to obtain a voucher of every species and made subjective estimates of numbers of individuals. Inflorescence clusters on virtually every twig had one to several moths crawling over them, and the abundance was impressive, if not accurately estimated. Guessing conservatively, there were 300-400 moths on the one plant. Thus the exceptionally dry season and overcast, relatively warm and humid conditions may have coaxed smaller moths that normally are not attracted to nectar sources and concentrated all the moths at a single bush.

I have often searched nearby flowering shrubs while tending blacklight sheets, and observed geometrids and noctuids, sometimes species not attracted to

lights in the vicinity (e.g. Powell, 1960 Pan-Pacific Entomol. 36:51), but I had not seen microlepidoptera so engaged. Most of my experience has been in coastal California, where cool evenings and low humidity are typical, but I have looked occasionally in other parts of North America, Mexico, and Costa Rica, with negative results.

Conversely, many diurnal microlepidoptera commonly feed at flowers, not only species of genera or families that are entirely or almost entirely diurnal (e.g., *Adela*, Heliodinidae, Sesiidae), but those of taxa that include nocturnal species as well as diurnal (e.g., early spring *Ethmia*; several genera of Scythrididae and Choreutidae; *Ypsolopha*; *Grapholita*). Yet I have not seen nocturnal species of these same genera visiting flowers and had often voiced the opinion that nectar feeding is not in their repertoire.

The late D. D. Linsdale and I found oidaematophorine plume moths numerous at flowers of *Eriogonum* in late summer east of the Sierra Nevada in Mono Co, CA, but none of the nocturnal taxa of other so-called microlepidoptera. *Arotrura longissima* (Scythrididae) is an unusual species, in that it flies throughout the season, and adults are found abundantly at flowers of composites during the daytime in the spring (e.g., in March, Powell & Hogue 1979, California Insects, plate 9c), whereas the larvae feed on *Lycium* (Solanaceae). Later in the season they are primarily nocturnal and come to lights in large numbers, such as at San Clemente Island in September, so it was fascinating to see them feeding at night as well.

Table 1. Moths observed/collected at staminate flowers of *Baccharis pilularis* on San Clemente Island, CA, 1930-2000 PDT, 27 Sept. 2002 (v= voucher; s = sight; + = 3-5; ++ = 6-10 or more, estimated numbers observed indicated in square brackets). Many of the specimens, especially the pyraloids and some species of macros, were worn to very worn.

Taxa	Vouchers
Scythrididae:	
<i>Arotrura longissima</i> J. Landry	3m, 3f++ [50-100]
Gelechiidae:	
<i>Aristotelia</i> sp.	1m
<i>Bryotropha</i> sp.	1f
Plutellidae:	
<i>Plutella xylostella</i> (L.)	1m, 1f+
Tortricidae:	
<i>Platynota stultana</i> (Wlsm.)	2f+
Pterophoridae:	
<i>Agdistis americana</i> B. & L.	2m+
<i>Emmelina monodactyla</i> (L.)	1m+
Crambidae:	
<i>Agriphila ? attenuata</i>	(s)
<i>Euchromius ocelleus</i> (Haw.)	1m+
Pyralidae:	
<i>Ephestiodes gilvescentella</i> Rag.	2m
<i>Eumysia pallidipennella</i>	1m
<i>Phycitodes mucidellum</i> (Rag.)	1f
<i>Vitula edmansii</i> (Packard)	1f
<i>Vitula insula</i> Neunzig	1m
Geometridae:	
<i>Archirhoe neomexicana</i> (Hulst)	(s) [1+]
<i>Elpista marcescaria</i> (Gn.)	(s) [5+]
<i>Eupithecia maestosa</i> (Hulst)	1f
<i>Perizoma custodiata</i> (Gn.)	1m, 2f++ [probably 50+]
<i>Pero "macdunnoughi"</i>	2m, 2f++ [ca. 20-30]
Noctuidae:	
<i>Caenurgina togataria</i> (Wlk.)	1m+
<i>Euxoa ? messoria</i> (Harris)	1m
<i>Euxoa</i> sp.	1m
<i>Homorthodes hanhami</i> (B. & McD.)	2f
<i>Lacinipolia patalis</i> (Grt.)	1m, 1f+
<i>Lacinipolia</i> (? <i>pensilis</i> (Grt.))	1f
<i>Lacinipolia strigicollis</i> (Wall'gr.)	3m, 2f++ [probably 50+]
<i>Peridroma saucia</i> (Hbn.)	(s)
<i>Spodoptera exigua</i> (Hbn.)	1m+
<i>Zosteropoda clementei</i> Meadows	3m, 3f++ [50+]

I am curious to learn whether other members have observed microlepidoptera nectaring at nectar sources at

night and whether this occurs often or only rarely in other regions.

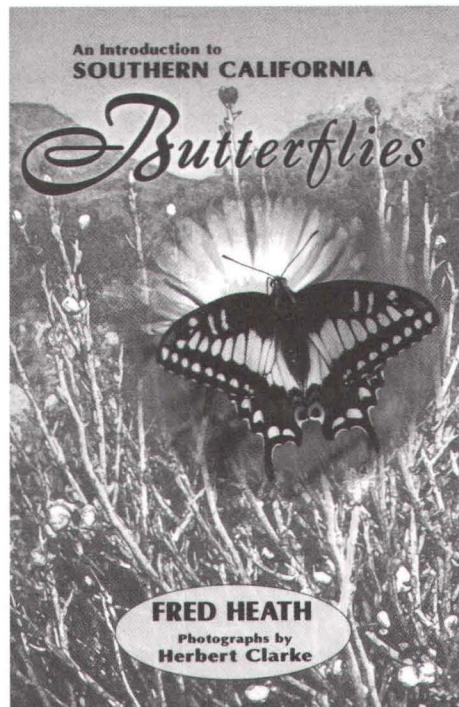
New Book...

An Introduction to Southern California Butterflies

by Fred Heath with photographs by Herbert Clarke, 2004. 288 pp., 5.38" x 8.38" (13.6 x 21.3 cm), color photos, bibliography, index, ISBN 0-87842-475-X, paperback, \$22 USD, Mountain Press Publishing Co., 1301 S. 3rd St. W, P.O. Box 2399, Missoula, MT 59806, www.mountain-press.com

More than 250 color photos enable the reader to identify 89 sp. of Southern California butterflies along with their habitats, food plants, life cycle, behavior and status. Includes information on classification, butterfly watching and gardening, protecting habitat and endangered species, plus a checklist.

Available from booksellers or directly from Mountain Press at 800-234-5308 or www.mountain-press.com



The Gardiner Gregory Lepidoptera Collection

Paul Manton

10 Flower Street, Hicksville, N.Y. 11801, paulmantonl@aol.com

Even after being dead for more than seventy-five million years, the Mosasaur still has the power to assert its place atop an ancient food chain from the glass exhibit case in the Hicksville Gregory Museum on suburban Long Island. It seems extraordinary to contemplate this toothy, fossilized skull. Here, in a simple clapboard building, in prosaic Hicksville (hometown of Rock N' Roller, Billy Joel), resides the earthly remains of a genuine sea monster; an extinct, fish-eating marine reptile of the sort that once prowled a long-vanished inland sea in the American heartland—and the corners of antique nautical maps.

Saved from the wrecking ball in the early 1970's, the Mosasaur's home is an 1895 courthouse that sits on a grassy oval at Heitz Place. Its proud cupola is now embraced by the arms of the Long Island Railroad as they branch out away from the Hicksville Train Station. Converting this building into a museum that is now on the National Registry of Historical Landmarks was the brainchild of Gardiner and Anne Gregory, two civic-minded Hicksville residents who dedicated themselves to improving their community through science education and historical preservation. Gathering local geologists, paleontologists, entomologists, artists, and historians, the Gregorays made their vision of a comprehensive institution of learning outside of a major city a reality. Today, the Hicksville Gregory Museum is not merely a "must see" field trip for local schools, scouts, group homes, senior citizens, and families, but an active research facility affiliated with such notable in-the-field researchers as Mark Newman and Charles Pellegrino.

The collections are considerable: the largest rock and mineral collection on

Long Island; an extensive assemblage of fossils and dinosaur bones and eggs; a butterfly and moth collection with hundreds of specimens; vintage photographs and collectibles from Hicksville's past. Families often visit the Museum and, on Thursdays, I provide them with personalized tours; pointing out a few of the more interesting or unusual items that underscore some scientific principal or historical curiosity; gingerly avoiding technical jargon and peppering my little talk with anecdotal descriptions designed to share with patrons my conviction that science and history need not be deadpan. The Gardiner Gregory Lepidoptera Collection is of chief concern here.



Naturally, the Gregory Collection has its mainstay glories; beauties such as *Morpho portis* and *Morpho catenarius* never fail to elicit "oohs!" and "aahs!". But while butterfly conservatories popping up throughout the country have, in recent years, permitted the public to enjoy the breathtaking spectacle of tropical butterflies on the wing, a static collection is still an important tool for examining tropical butterflies in detail. Ordered geograph-

ically rather than by conceptual model (a configuration that, like some of the outdated nomenclature the Hicksville Gregory Museum is planning to address in the near future with its "Sights & Sounds" audioguide system), the collection still lends itself to a glimpse of lepidopteran mimicry, polymorphism, and hybridization; a synoptic collection sufficiently stocked as to have most major genera represented.

For many museum patrons, the Gardiner Gregory Collection is the first close encounter with some of the entomological fauna of the tropics and it does not disappoint. Its Diadem butterflies are superb emissaries to the world of tropical lepidoptera with their regal purples and blues and suffusions of radiant white that, on especially overcast days, suggest brilliant dapples of equatorial sunshine. They possess everything evocative of the words "tropical butterflies": bright hues, iridescence, generous proportions, and ornate patterns. With only five specimens—*Hypolimnas dexithea*, *H. salmacis*, *H. missippus* (male and female), and *H. bolina*—the collection nevertheless showcases the unifying features, variability, and striking examples of sexual dimorphism for which this genus is famous.

Growing up on those BBC-narrated, now stock iconographic images of cheetahs sprinting across the Serengeti, I always found myself looking for that rare glimpse of some Afrotropical butterfly flirting across the screen. The charaxians are quintessential African butterflies and the Gardiner Gregory Collection contains seven: *Charaxes archeamenes*, *C. cassius*, *C. jarones*, *C. hutchinson*, *C. tiridates*, and *C. bohem-*

continued on pp. 20



**REGISTRATION FOR 55TH ANNUAL MEETING OF THE
LEPIDOPTERISTS' SOCIETY.**

**UNIVERSITY OF MARYLAND (COLLEGE PARK) and NATIONAL MUSEUM OF
NATURAL HISTORY (WASHINGTON, DC), 15-18 July 2004.**

Sponsored by Entomology (Smithsonian), SEL (USDA), and Entomology (University of Maryland)

Co-sponsored by Maryland Entomological Society & Washington Area Butterfly Club

Name: _____

Address: _____

City/State/Zip Code/Country: _____

Institutional Affiliation (for name tag, optional) _____

E-MAIL ADDRESS*(please include): _____

PLEASE PROVIDE YOUR E-MAIL ADDRESS. We expect most communication about the meeting other than original registration to be done over e-mail. For those without e-mail access, we will communicate via the post office.

Regular Registration (before May 1- \$100.00; after May 1- \$125) X _____ \$ _____

Student Registration (before May 1- \$75.00; after May 1- \$100) X _____ \$ _____

Spouse Registration (\$50.00).....\$ _____

Dormitory Room (please include page 2: Dorm Reservation Form)\$ _____

Friday night Barbeque (\$12.00/person) X number of people _____ =\$ _____

Check if vegetarian option requested ()

Saturday night Banquet (\$25.00/person) X number of people _____ =\$ _____

(Buffet dinner includes vegetarian options)

Field Trips (please include page 2 & 3: Field Trip Registration Form)\$ _____

Meeting T-shirt \$10.00 each (____ small ____ medium ____ large ____ X-large)\$ _____

TOTAL (We unfortunately cannot accept credit cards).....\$ _____

PAYMENT AND CANCELLATION POLICY

Please send this form and a check in US dollars or international money order payable to "Lepidoptera Conference" to:

Dr. Astrid Caldas

Department of Entomology

Plant Sciences Building Rm. 4112

University of Maryland

College Park, MD 20742-4454 USA

CANCELLATIONS: Cancellations before June 1st will incur a \$20.00 fee. After June 1st, there will be **no refunds**.

RESERVATIONS FOR UNIVERSITY OF MARYLAND DORMS

Maryland can be unmercifully hot during the summer, and the dorms are air conditioned and "suite style" (each suite has 2 bedrooms, 1 or 2 bathrooms, and a common living room). Packages include linen (2 towels, 2 sheets, pillowcase, blanket) and parking. Please see the Registration Details Sheet for information on where to get breakfast, which is NOT included in the packages below. Please note that the number of single rooms is limited and will be assigned on a "first come, first served" basis.

Package 1 (5 nights): 7/13 (Tuesday) to 7/18 (Sunday): single \$237, double \$202 per person

Package 2 (4 nights): 7/14 (Wednesday) to 7/18 (Sunday): single \$189, double \$161 per person

Package 3 (3 nights): 7/15 (Thursday) to 7/18 (Sunday): single \$145, double \$125 per person

Extra nights *available Sunday and Monday after the meeting*: single \$49 per night, double \$42 per night/person

Name: _____

Address: _____

City/State/Zip Code/Country: _____

If family members will be accompanying you, please either multiply the cost by the number in your family attending or fill out a separate sheet for each family member.

Dormitory Room Package # Requested \$ _____

Please circle one: I am requesting a *single* *double*

of extra nights requested (if applicable) \$ _____

Total Cost (Please put the cost here and on page 1) \$ _____

If you have requested a double occupancy room, please circle *male* or *female* and give name of requested roommate if you wish (we cannot guarantee roommates other than family member).

FIELD TRIP REGISTRATION

Collecting in natural areas in Maryland requires a permit, and we are in the process of securing these for field trips 1 & 3 and securing permission for net and release for field trip 2. It may be necessary to give trip leaders a list of species encountered (to the extent that they can be identified) for a report to the permit granting agency, and some state endangered species may not be covered by the permit. All participants need to register and, as usual, will be asked to sign a waiver of responsibility form. Because Lyme Disease is always a possibility, participants should dress appropriately. It is expected that participants will car pool and split gas expenses if asked. Lunches (for the day trips) may be brought, but there will also be places to buy lunch. All Thursday field trips are expected to return in time for the opening reception.

Field Trip 1. A moth collecting trip is planned for Wednesday night (July 14, 2004) to Patuxent National Wildlife Area, which is about a 25 minute drive from the College Park campus. This is a rich riparian habitat. (We are also securing permission for moth collecting at the Golf Course after the barbecue on Friday night.)

Field Trip 2. The Washington Area Butterfly Club will sponsor a full day butterflying trip to Harper's Ferry (no collecting, but net and release permission is being sought), about a 90 minute drive from College Park, on Thursday (July 15, 2004).

Field Trip 3. The Maryland Entomological Society will lead a full day butterfly/diurnal moth collecting trip on Thursday (July 15, 2004), probably to a natural area on the eastern shore of the Chesapeake Bay or to western Maryland, but details are still in process.

The cost for each field trip (exclusive of lunch and gas) is \$5 per person.

Name: _____

Address: _____

City/State/Zip Code/Country: _____

Number of family members (if applicable) in your group besides you _____

Please Circle the Field Trip(s) that you are requesting: 1 2 3

Will you be driving a car yes no

If yes, how many other participants can you take? 1 2 3 4 5

Field Trip X number of people in your group _____ = \$ _____ (Please include on Page 1)

REGISTRATION DETAILS

OVERVIEW of TRANSPORTATION, VENUES, and PARKING.

The University of Maryland at College Park is about 8 miles northeast of the Washington Monument (which is located in downtown Washington, DC). It is about 2 miles south of Interstate 95/495 (Capital Beltway) on US Route 1 and is served by Metro's Green line College Park Station (subway). There are 3 local airports (BWI, Dulles, Reagan National), but BWI is likely to be the most convenient and inexpensive. BWI has train and bus service to the Metro subway System. Take the bus service to Greenbelt Metro Station and from there take the Metro to College Park Station (no line transfer); or take AMTRAK to Union Station and take the Metro to College Park Station (red line to green line). Reagan National is served directly by the Metro System (yellow to green line), making it easily accessible, but airline fares are usually the most expensive. Dulles requires a shuttle to a Metro Station (orange to green line). Taxi and shuttle service from all airports is available. Washington DC is also accessible by AMTRAK, which connects to the subway system at Union Station.

The opening reception Thursday evening will be held in the Insect Zoo of the National Museum of Natural History, part of the Smithsonian complex on the Mall at 10th and Constitution Ave, NW Washington. There will be free shuttle buses from UMD to this reception. We are in the process of trying to arrange a special "Bugs" IMAX showing with the reception. All activities from Friday to Sunday will be at the College Park campus, and all venues are close-by. If you purchase a dorm package, you will be able to park in selected lots on campus. If you stay elsewhere, it is best if you walk or take shuttles, which are available for free from 6am-10pm between the campus and the College Park Metro station and among the venues on campus. The listed hotels also offer free shuttle to campus.

The Smithsonian is the largest and most visited museum complex in the world. All Smithsonian museums have free admission, and many are on the National Mall. Besides the Natural History Museum, there is the Air & Space Museum (Kitty Hawk Flyer, Spirit of St. Louis), American History Museum (Archie Bunker's chair, or so we hear), and a great variety of other museums. In addition, the new Museum of the American Indian will hopefully open before the meetings. The best way to visit these museums as a tourist from College Park is to walk (0.7 miles) or take a shuttle bus to the College Park Metro Station and then take the green line to Archives Station (about a 20 minute train ride), which will put you one block north of the National Mall.

The Smithsonian and USDA Lepidoptera Collection recently moved to superb new quarters on the 5th floor East Wing of the Museum of Natural History. For those wishing to visit these collections, we will be set up to receive visitors on Thursday before the meetings. Walk 3 blocks from Archives station to 10th and Constitution, NW, where the guards will have instructions on how to gain access (you will have to go through security screening). If you wish to visit at another time, please contact us to make arrangements. If you wish to curate a group on which you are a recognized specialist, we will be most pleased to try to arrange it.

MEALS, BARBECUE, & BANQUET.

Breakfast and lunch: There are a variety of inexpensive restaurants on Route 1, which is the main thoroughfare in College Park, and you will receive information on these. The dining hall adjacent to the dorms may be open (construction is the reason for the uncertainty). Most of the local hotels have breakfast included. We suspect that most folks will eat lunch at the Student Union food court, a 3-4 minute walk from the hall where talks will be given.

The Friday evening barbecue will be at the Golf Course Clubhouse, about a 1 mile walk from the dorms (a shuttle will be available, parking is plentiful at this facility). The slide show will follow the barbecue at the Clubhouse, and we hope to be able to show digital videos. Moth-ers can expect to set up their lights after dark on the grounds.

Saturday's banquet will be in the Colony Ballroom in the Student Union, a 5 minute walk from the dorms. If we can arrange it, there will be dancing after the banquet.

For Accommodations information see pp. 19 of this issue.

CALL FOR RESEARCH TALKS, RESEARCH POSTERS, & PHOTOGRAPHIC DISPLAYS

Research talks will be held in the basement of the Jimenez Building, University of Maryland, 16-18 July 2004. Talks will be 12 minutes plus 3 minutes allotted for questions (a total of 15 minutes). Each presenter is requested to bring his/her presentation as a PC/Intel-compatible PowerPoint file on a CD. The University of Maryland does not support Mac/Apple equipment. Also, the sessions will be held in an auditorium with an "AV tech room" where hookup of personal computers is prohibited, so you will NOT be able to use your personal computer for your presentation (our apologies, but we have no choice). A traditional slide projector will be available only upon request.

The poster session will also be held in the basement of the Jimenez Building, University of Maryland, 16-18 July 2004. Posters should be of standard size. We will provide an appropriate background to which posters can be attached, along with the attaching medium (e.g., push pins). Photographic displays of Lepidoptera are a welcome addition to meetings. We will be happy to reserve space to display your Lepidoptera photographs. You can expect a space approximately 36"x48".

Please send your paper or poster abstract BEFORE 1 June 2004 to John W. Brown (e-mail: jbrown@sel.barc.usda.gov) either embedded in an e-mail or as an attachment in rich text format (RTF). Please do the same (without the abstract) if you wish to reserve space for a photographic display.

Name _____

Address _____

City/State/Zip Code/County _____

E-mail address _____

Title of Presentation _____

Author(s) [identify presenter] _____

Poster or Oral presentation _____

Are you eligible to be considered in the competition for best student research paper or best student poster? N Y

Do you need a traditional slide projector? N Y If you need other equipment, please note it conspicuously below.

Brief Abstract (not to exceed 150 words) _____

55TH ANNUAL MEETING OF THE LEPIDOPTERISTS' SOCIETY.

UNIVERSITY OF MARYLAND (COLLEGE PARK) and
NATIONAL MUSEUM OF NATURAL HISTORY (WASHINGTON, DC),
15-18 July 2004.

Sponsored by Entomology (Smithsonian), SEL (USDA), and Entomology (University of Maryland).

Co-sponsored by Maryland Entomological Society & Washington Area Butterfly Club

ACCOMODATIONS

DORMS

Please see Dorm Reservation Sheet (page 2 of insert). The dorms are air conditioned and "suite style" (each suite has 2 bedrooms, 1 or 2 bathrooms, and a common living room). Packages include linen (2 towels, 2 sheets, pillowcase, blanket) and parking. Breakfast is NOT included in the packages below. We repeat the prices here for easy comparison with hotel and camping options.

Package 1 (5 nights):

7/13 (Tuesday) to 7/18 (Sunday): single \$237, double \$202 per person

Package 2 (4 nights):

7/14 (Wednesday) to 7/18 (Sunday): single \$189, double \$161 per person

Package 3 (3 nights):

7/15 (Thursday) to 7/18 (Sunday): single \$145, double \$125 per person

Extra nights available Sunday and Monday after the meeting: single \$49 per night, double \$42 per night/person

HOTELS

(all include complimentary continental breakfast, parking, and shuttle to UMD and subway).

1. Quality Inn and Suites

7200 Baltimore Boulevard (Rt. 1), College Park, MD. Phone: 1-800-221-2222, (301)864-5820, www.qualityinn.com/hotel/MD021. Distance from campus: 0.3 miles. Distance from College Park Metro (subway) station: 0.4 miles. Rate: \$69 plus tax for a standard room with 2 double beds. The Quality Inn has a fitness room and outdoor pool. Reservations must be

made before June 15. Please mention Group # 1968, The Lepidopterists' Society, to receive this rate, which is less than the one quoted on Travelocity and similar sites.

2. Best Western College Park Inn and Fundome

8601 Baltimore Boulevard (Rt. 1), College Park, MD. Phone: 1-800-442-1644. www.bwcollegepark.com. Distance from campus: 0.5 miles. Distance from College Park Metro (subway) station: 1.2 miles. Rate: \$80.10 plus tax for standard rooms with 2 queen beds. The Best Western has a restaurant and bar on the premises, indoor pool and whirlpool, indoors "fundome" with putting green, shuffleboard, pool tables, and video games, and a small fitness room with sauna. Reservations must be made before June 13. Please mention Group # 9008, The LEPSOC, to receive this rate.

3. Other Options

Please check www.inform.umd.edu/CampusInfo/Departments/guest/visitor/localhotel.html for other area hotels near the University campus, but note that there are no rate agreements.

CAMPING

Greenbelt National Park is located about 5 miles from the University of Maryland campus. Summer park activities include birding, horseback riding, interpretive programs, nature walks, and wildlife viewing. During the summer the park also hosts the oldest cycling criterium (laps) races every Wednesday evening from 6pm to about 8:30 pm, featuring collegiate and professional teams. Come watch and cheer for the University of Maryland team! There is no entrance fee for

Greenbelt Park, but there are campground and reserved picnic area fees, 80% of which go to projects that help Greenbelt Park.

Stay at Greenbelt Park's campground for \$14 a night. The campground includes hot showers, bathroom facilities, and use of the dump station for RV's. It is a fully handicapped accessible facility. Please stop by the Ranger Station for registration and information upon arrival. A Campground host is available in the campground after hours for assistance. For further information use the links on <http://www.nps.gov/gree/> or call 1-800-365-2267. **Reservations for Summer 2004 are already being accepted** and can be made online at reservations.nps.gov

Announcement

Las Mariposas de Machu Picchu. Guía Ilustrada de las Mariposas del Santuario Histórico Machu Picchu, Cuzco, Perú.

by Gerardo Lamas. 2003. A4, 221 pp., 34 color plates; softcover. Lima, PROFONANPE.

Treats 377 species of butterflies found in the Machu Picchu area, all illustrated in color. Spanish edition; an English edition will appear soon. Price: US\$ 25.00 (postage and shipping extra). Available from: PROFONANPE, Fondo Nacional para Areas Protegidas por el Estado; Prolongación Arenales 722, Lima-18, Perú. Phone: (+511) 212-1010; Fax: (+511) 212-1957; prf@profonanpe.org.pe, www.profonanpe.org.pe



Museum...continued from pp. 18

ani. Two duplicates mounted in the collection's glass-enclosed wall panel exhibit are spread face-up, illustrating one of the more extraordinary features of this genus, namely, its utterly baroque underside patterns. Charaxians remind us, as many field guides confirm, that generations of lepidopterists have neglected the undersides of some of the world's finest species—save for Morphos, Owl butterflies (*Caligo*), and “Eighty-Eights” (*Diaethria*). In the category of the magnificent are the Jungle Queens, *Stichophthalma cama-deua* and *S. howqua*. Their diamond-shaped chevrons form a necklace that exhibits the breathtaking geometry to be had even in a few basic patterns.

The Gardiner Gregory Lepidoptera Collection has a number of “must see” specimens. One of my favorites is *Graphium celebes*, formerly *Androcles celebes*. This glorious Sulawesian butterfly, an Old World “Kite Swallowtail,” is creamy white with black stripes and a black apical and subapical. Its most conspicuous feature is its long swordtails, each of which is nearly half the length of the insect's overall wingspan.

The collection represents Gardiner Gregory's artistic tastes, as is the case with the collections of most amateur entomologists. *Graphium celebes* is joined by quite a number of “Kite Swallowtails”, both *Graphium* and *Eurytides*. But given the fact that the collection was first organized in the late 1960's, many are still listed as *Papilio*. Such groups as Crackers (*Hamadryas*), Palmflies (*Elymnias*), and the Danaid-mimicing *Amauris* butterflies are well represented. Flagship species here include such Birdwings as *Ornithoptera victoriae*, *O. priamus*, *Troides acucus*, and *T. priamus*; and the exquisite blue *Papilio ulyssseys*. The exotic Brown Siproeta (*Siproeta epaphus*) and the Page Bamboo (*Philaethria dido*) are wonders of the Neotropics, which is fitting because, notwithstanding the disappointingly sparse Heliconian representation, the Gardiner Gregory

Collection has more South and Central American specimens than ones from any other region except North America.

The Collection is wanting in Crows (*Euloece*) and European species in general. Too, Lycaenidae in sufficient numbers are absent. To its credit, the Pieridae contain some prize examples. For museum patrons' largely familiar with Long Island's ubiquitous Cabbage (*Pieris rapae*) and Sulpher (*Colias eurytheme*) butterflies, the sample is more than enough to inculcate an appreciation of this diverse family. Exceptional examples include the Great Orange Tip (*Hebomonia glaucippe*), the Jezebel (*Delias eucharis*), the Violet Tip (*Colotis ione*), and the Dotted Border (*Mylothris chloris*). Indeed, their display case is a delightful festooning of white, lemon, tan, orange, grey, and yellow.

For pure pleasure, I recommend seeking out such exotics as the Guineafowl (*Hamanumidia daedalus*), Sapphire (*Callithea sapphira*), Christmas butterfly (*Papilio demodocus*), Lacewing (*Cethosia cyane*), and the Tree Nymph (*Idea leuconoe*). The shimmering *Lyropteryx appolonia* and the *Uraneis unava*s with its row of hindwing wing chevrons that appear as dabs of metallic blue paint are pure eye candy. The Collection also has a quality specimen of *Papilio ophidicephalies*, one of Africa's largest and most striking Swallowtail butterflies.

Only two of the ten exhibit panels of the Gardiner Gregory Lepidoptera Collection contain moths; one for North American species, the other a synoptic collection billed “Moths of the World”. It should not seem surprising that the lion's share of moths here are Saturniidae, Sphingidae, and Catocalidae. Maybe there needs to be a paradigm shift in the way the public—and too many lepidopterists—regard moths. But until that day arrives, a moth collection should serve to dispel the popular perception of moths as drab and diminutive. Let us recall that the larger, more conspicuous, species are often the lure for many budding

lepidopterists. Indeed, even Henry Bates, the greatest butterfly collector of all time began his entomological career as a coleopterist. It was the tropical specimens in the British Museum he and Alfred Wallace examined in 1847, in preparation for their Amazon adventure that made them consider that butterfly fauna was of sufficient diversity as to be useful in taking on that question of questions: the origin of species.

The moths of this collection are graced with the famous Sunset moth (*Chrysiridia rhiphearia*) to drive home the point as well as such jade wonders as the Luna moth (*Actias luna*) and the Indian Moon moth (*Actias selene*). Alas, though, no Spanish Moon moth (*Actias isABELLae*), the most glorious of the Moon moths with its dark veins and more pronounced sexual dimorphism. The Edward's Atlas moth (*Attacus edwardsii*) and the Comet moth (*Argema mitrata*) always give boasting rights, but the Hercules moth (*Coonocera hercules*) is an inferior specimen and does no justice to this curious species.

The Collection has a fine sampling of *Automeris*, *Attacus*, *Saturnia*, and *Actias*, but it also possesses ample *Catocala* and Sphingidae. Of the last group, it's the hymenopteran mimics like *Haemorrhaea thysbe* and *H. senta* that seem to catch the eye although personally, I am impressed with the White-Lined Sphinx (*Celerio lineata*).

There is a separate exhibit on insect camouflage in the Gregory Collection and Underwing moths are displayed both resting on the bark of their respective foodplant and spayed open: White Underwing (*Catocala relicta*) on white birch; Aholibah Underwing (*Catocala concumbens*) on Oak.

In a time when entomological websites have clear and detailed graphics and butterfly conservatories are festooned with nectar-rich flowers, a static collection like the one in the Hicksville Gregory Museum still remains a valued resource for amateur lepidopterist and general public alike.

Building Cabinets to House California Academy or Cornell Drawers (without mortgaging your house)

*Kelly Richers**

9417 Carvalho Ct., Bakersfield, CA 93311

After working with cabinets that are no longer available through any known source, and yet having found them to be very serviceable, I "unbuilt" one, and got the dimensions to build my own. These cabinets hold 12 Cornell drawers or 14 Cal Academy drawers when finished, and have an opening door, which is an advantage over the type where the door falls off when you remove clips.

Materials

1) 3 sheets of what we commonly call $\frac{3}{4}$ " plywood. It isn't anymore, and you need to keep this in mind when doing dimension work. They are 4' by 8' and you can build 2 cabinets with three sheets. Cutting the parts for 2 cabinets at a time is a good way to go, also, as you can then assemble them as needed. These run about \$27.00 per sheet, finished one side, and you need three. Cost, about \$81.00

2) One package of screws, wood, #8 \times 1 $\frac{1}{2}$ ", 100 per package. Cost, about \$3.00

3) Three packages of screws, wood #6 by $\frac{1}{2}$ ", 100 per package. Cost, about \$8.00

4) 7 lengths of 12' right angle metal, used for hanging ceilings (that's the section where you find it in the home improvement store). It is perfect, as it has rolled edges and is malleable enough for straightening if messed up. It costs about a whopping \$1.79 per 12 foot section, and you need 56 pieces, each 15" in length, so the cost is minimal compared to, say, anything else on the planet I have found. Cost, about \$21.48

*Moth Collector Extraordinaire ("Extraordinaire" means "out of control"...)

5) One set of two hinges for each cabinet. I use 3" long by $\frac{3}{4}$ " wide hinges with three holes. Color is unimportant, they come in brass color or silver color. Cost, about \$2.89 each set of two, so \$5.78 total.

6) Cabinet handles. I buy them from the home center and all mine match, as I get a common one from the decorative handle section. Mine cost about \$1.99 each, so total cost is \$3.98 or so for two cabinets

That is about \$123.24 for the materials to build two cabinets. You also need several tools, such as a drill or drill press, table saw and screwdriver if your drill is not convertible. A tape measure or yardstick (more easily used) is also needed.

You will need at least two drill bits, something equal to the #6 and #8 screws above, and a larger, $\frac{3}{4}$ " bit.

Assembly instructions:

Cut the wood. This is best done at your local high school or junior high that still teaches woodshop, or on a larger table saw than most people have at home. You are trying to cut very large sheets straight, and the straightness is important. Dimensions are important, because if done properly, the door stays shut of its own volition. Cut the following:

A) 2 backs, $19\frac{1}{4}'' \times 40\frac{1}{2}''$. They must not be cut short along the $19\frac{1}{4}''$ side, or the drawers won't fit...

B) 4 sides, $19'' \times 41\frac{1}{4}''$

C) 2 bottoms, $20\frac{3}{4}'' \times 19\frac{3}{4}''$

D) 2 tops, $20\frac{3}{4}'' \times 19\frac{3}{4}''$

E) 2 doors, $20\frac{3}{4}'' \times 40\frac{1}{2}''$ (They look better if the grain runs lengthwise)

F) 2 bottom inserts, same cut as above, but cut out just under $\frac{3}{4}''$ along both sides all the way except for $\frac{3}{4}''$ of the front. The resulting shape will be a very fat T with a real little top. Make allowance for the saw blade width in this cut, because when you screw the sides to the insert, if you cut too deeply, the drawers won't fit...

After the cuts are done, now, we will talk about the risers for the drawers. Cut the right angle into 15" pieces. A band saw does quick work on this. Then drill small #6 sized holes in each 15" piece from the inside of the angle, along only one of the sides, spaced out. I put a hole in the middle, and one about an inch from each end. This should leave you with one flat shelf side and one side with three holes to screw into the cabinet. You will need 28 of these for each Cal Academy cabinet, and 24 for each Cornell cabinet.

This is best done on a drill press, as you can do all you need in a fairly short time. Since I use screws with flat heads, and they need an inset, I then take a real large drill bit, say a $\frac{3}{4}''$ or so, and make a bevel in the riser so the screw will sit flat. This will keep the drawer from being cut by the screw head (See photo on pp. 33).

The next step is to lay out one of the sides and decide which is the top and the outside. Assumedly the finished side is the outside, so you want to work on the other, or inside side. Lay the side piece down so the finished side is down, and with a pencil, mark "top" on the top with an arrow pointing in the direction you want to be the front.

Make a light pencil line down from the top to the bottom 1 $\frac{1}{2}$ " in from the front.

This will provide a nice straight front for your risers. Who cares about the back, as you will never see them. Mark down this line from the top, for California Academy drawers, at: 3½", 6¼", 9", 11¾", 14½", 17¼", 20", 22¾", 25½", 28¼", 31", 36½", and 39¼". Go to the back and do the same thing about three inches in from the back side. Draw lines from front to back starting 1½" from the front (at your line) at each of these measurements, making nice parallel lines. This marks the top of each of your risers.

The only difference between this cabinet and a Cornell cabinet is the spacing of the risers and the fact that there will only be 12 on a side. For a Cornell, mark from the top at 4", (there is a wider space here because the sample cabinet I used had an insert at the top also, which I do not use) then every 3¼" down from that point (7¼", 10½", 13¾", 17", 20¼", 23½" etc.)

Place a riser with the straight side on the top, and the part to be screwed in under it even with the front line. Drill small number 6 holes where each hole falls for each riser. Do this individually, as there is no assurance that each riser

is drilled at the same place (at least when I do it) and don't bump the whole mess to misplace the risers. Then screw in each one. You can drill and screw in each one as you go, avoiding any problems, but I use the drill to screw too, so I do them all at once.

When one side is done, do the other, making sure you mark a top and make a mirror image, so that it will all look pretty when you are done. Otherwise you will end up with the same side twice...

Now to put it together. Again, drill your holes first and bevel them carefully as you are now working on the outside or finished side. The back goes between the sides, so screw one side to the back, using four # 8 screws spaced evenly (one about 1" from each end and the other two somewhere evenly between. Use five screws if you want, because no one cares. Flip it over without ripping out the screws and do the other side. Then put it on end and screw on the bottom. You might want to make sure the insert fits first, because this is your check to make sure everything was put together properly. The insert fits flat against the bottom piece. Note that they

extend ¾" beyond the sides at the front. Voila, you have a cabinet, sort of. Flip the partially done cabinet over. Put the top on the same way and now it can stand up the way it belongs.

To attach the door, drill holes for the hinges (no need to bevel these) starting 9" from the top and 9" from the bottom along the right side of the cabinet so the hinge can swing freely out. Remember that the hinge has to swing out (see photo on pp. 33), and try it first, but the hinge part can actually rest on the edge and you have a little more room, it seems, as well as being able to center the part that has to be drilled into the ¾" dimension of the door itself. Drill and attach both hinges and the door is on. I find laying the cabinet on its side makes putting the door on easier, and less hair-raising than putting it on standing up.

The handle goes on the left side of the front part of the door, centered, about 1" in from the side-leave room for the ¾" overlap or it won't close completely. Your cabinet is done. Now if you can just find room for it...

(Note: For metrically-inclined members, multiply all measurements in inches (" by 2.54 to get dimensions in cm and all measurements in feet (' by 0.3048 to get dimensions in meters—Ed.)



Calpodae...continued from pp. 31

Opler, P. A., & G. O. Krizek. 1984. *Butterflies East of the Great Plains, An Illustrated Natural History*. John Hopkins University Press, Baltimore & London, xviii + 294 pp. + 54 color plates.

Opler, P. A., H. Pavulaan, & R. E. Stanford (coordinators). 1995. *Butterflies of North America* website. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page [<http://www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/bflyusa.htm>], version 30DEC2002.

Scott, J. A. 1986. *The butterflies of North America, a natural history and field guide*. Stanford University Press, Stanford, California, xvi + 583 pp. + 64 color plates.

Scudder, S. H. *Butterflies of the Eastern United States and Canada with Special Reference to New England*. 3 vols. Published by the author, Cambridge, Mass., 1958 pp. + 89 plates + 3 maps.

Announcement...

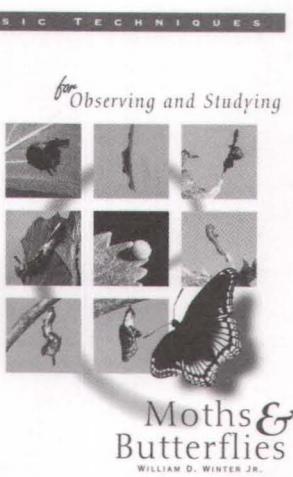
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The Marketplace

IMPORTANT NOTICE TO ADVERTISERS: If the number following your advertisement is "453" then you must renew your advertisement before the next issue! Remember that all revisions are required in writing.

Books/Videos

Lepidoptera of the Pacific Northwest: Caterpillars and Adults. Jeffrey C. Miller and Paul C. Hammond, 2003. FHTET 2003-03, USDA, Forest Service, National Center of Forest Health Department, Morgantown, WV, 324 pp. This book is a photographic guide illustrating both the caterpillars and adults of 239 sp. of macrolepidoptera from the Pacific Northwest, from northern CA to BC and western MT. Species selected to show major taxonomic groups found in this region. Ecological information on abundance, foodplants, seasonality, flight, and biogeography is presented. This work supplements **Macromoths of Northwest Forests and Woodlands** by J. C. Miller and P. C. Hammond, 2000. Available free of charge by contacting: Richard C. Reardon, USDA Forest Service, 180 Canfield St.,

Morganton, WV 26505, 304-285-1563,
rreardon@fs.fed.us

461

Butterflies in Close-Up. Video by Luis R. Hernandez, 45 min in length, shows more than 60 species under natural conditions in the Lower Rio Grande Valley of south Texas during late summer. PAL (UK/Europe) and NTSC (US) versions are available. Contact Luis R. Hernandez, Darlington Building 607, Mayaguez, Puerto Rico 00682, 787-851-0409,
luisrob@centennialpr.net

461

MINT 95%—1st edition of D'Abrera Butterflies of the Afrotropical Region. All in one book and quite rare in pristine condition (never used). I have most of the other ones also. Make me an offer. Contact John G Filiatralt, 13225 101st Street lot 140, Largo, FL 33773, 727-585-2143,
beaufil37@aol.com

454

For Sale: Contributions of the C.P.

Gillette Museum of Arthropod Diversity. Most recent numbers are **Butterflies of Kern and Tulare Counties, California** by Ken Davenport (\$14) and **Scientific Names of North American Butterfly Species** by P. Opler & A. Warren (\$18). Write for price list or send remittance made to Gillette Publications to Dr. Paul Opler, Department of Bioagricultural Sciences, Colorado State University, Ft. Collins, CO 80523

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For Sale: **Insects of the World, Vol. 4:** North, South & Central America II, in slip cover, 1983, K. Sakagnti. **Insects of the World, Vol. 6:** Africa, in slip cover, 1982, K. Sakagnti. **Swallowtail Butterflies of the Americas** by Tyler, Brown & Wilson, brand new, signed by authors. All in perfect condition. Best offer plus shipping. Other titles available. Contact Rick Rozicki, 5830 S. McVicker Ave, Chicago, IL 60638.

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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.** Advertisements for credit, debit, charge cards or similar financial instruments or accounts, insurance policies and those for travel or travel arrangements cannot be accepted because they jeopardize our nonprofit status.

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 and must be renewed before the deadline of the following issue to remain in place. All ads contain a code in the lower right corner (eg. 386, 391) which denote the volume and number of the **News** in which the ad. first appeared.

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 re-

solved 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 Lepidopterists' 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.

Livestock

For Sale (US only): cocoons/ova of *Hyalophora cecropia*. Contact: Alan M. Vosefski, 3320 Kirkwood, Dr., Virginia Beach, VA 23452, 757-498-3168, alanv@peoplepc.com 454

Eggs of various *Catocala* species from Prince Edward Island, Canada, available fall and winter of 2003. Visit www.silkmoths.bizland.com/catPEI.htm to see what may be available. Contact Bill Oehlke, Box 476, 155 Peardon Road, Montague, Prince Edward Island, Canada C0A 1R0, 902-439-2462, oehlkew@islandtelecom.com. 453

Overwintering cocoons of many Saturiniidae species from Northeastern North America available fall and winter: *Actias luna*, *Antheraea polyphemus*, *Automeris io*, *Callosamia promethea*, *Hyalophora cecropia*, *Hyalophora columbia*, *Samia cynthia*. Price list at www3.islandtelecom.com/~oehlkew/supplies.htm or contact Bill Oehlke, Box 476, 155 Peardon Road, Montague, Prince Edward Island, Canada C0A 1R0, 902-439-2462, oehlkew@islandtelecom.com. Foodplants, rearing instructions, overwintering instructions, online help available at www3.islandtelecom.com/~oehlkew 453

For Sale (USA only): cocoons of *Antheraea polyphemus*, *Callosamia promethea* and *Hyalophora cecropia*. Ova available in spring. SASE to Karl Ploran, 110 Route 20, Chester, MA 01011-9642, 413-354-7852 (6-9 pm, eastern time). 453

For Sale: pupae of *Eacles imperialis* or will trade for *Hyalophora gloveri* pupae. Leroy Simon, 5975 SE 122 Pl., Bellevue, FL 34420, 352-245-8351. 453

For Sale: captive-bred Philippine butterfly pupae, year round. Imogene L. Rillo, P.O. Box 2226, Manilla 1099, Philippines, (fax) 632-824-0222, clasinse@mindgate.net 453

Specimens

For sale/exchange. *Teinopalpus aureus* (China), *Acanthophorus serraticornis* (India), *Macrodontia cervicornis* (Peru), *Troides minos* (India). Yoshiaki

Furumi, 97-71 Komizo, Iwatsuki-Shi, Saitama-Ken, 339-0003, Japan. 461

Rich variety of Nymphalidae and Papilionidae from Africa available. List on request. Wanted: *Prepona*, South America. Giancarlo Veronese, Viale Venezia 138-33100 Udine, Italy gc.veronese@virgilio.it 461

Collection Available. One of the best private collections of North American butterflies, including 145,269 adults (37,164 mounted, 108,105 papered, including 1000+ paratypes), most from North America but some from Colombia, Africa, Europe, plus 2862 vials of pickled eggs, larvae, & pupae, 8938 slides of eggs, larvae, pupae, & adults, 2000 pressed plants, 414 Cal. Academy drawers, 77 cabinets, 96 envelope boxes, 123 Schmitt boxes. Proposals wanted. Foreigners welcome. James A. Scott, 60 Estes St., Lakewood, Colorado 80226-1254 454

Equipment

Light Traps, 12 volt DC or 110 volt AC with 18 inch length (15 & 25 Watt) and 24 inch length (20 & 40 Watt). All with 365 Quantum black light bulbs. Also available with ballast enclosed in weather tight cast aluminum enclosure and fluorescent bulbs in clear shatter proof tube. Rigid vane assembly of stainless steel, aluminum or plexiglass. Portable, easy to use, with rain drains and beetle screens to protect specimens. For info contact; Leroy C. Koehn, 202 Redding Road, Georgetown, KY 40324-2622; Tel: 502-570-9123; Leptraps@aol.com 461

Bait Traps, 15" Diameter, 36" tall collapsible traps with cloth top and plastic coated nylon screen and supported with 3/16 steel rings. A plywood platform is suspended with eye bolts and S-hooks. The bait container is held in place by a retainer. Three types are available: Flat Bottom, Invert funnel and Tropical. For info contact; Leroy C. Koehn, 202 Redding Road, Georgetown, KY 40324-2622; Tel: 502-570-9123; Leptraps@aol.com 461

Miscellaneous

Lepidoptera books and supplies (nets, spreading boards, envelopes, Cal Academy unit trays, pins, etc.). Send SASE to Dr. Eugene J. Gerberg, 5819 NW 57th Way, Gainesville, FL 32653, genejg2@aol.com 461

I am trying to contact Ray Murphy in Malawi. If you read this, Ray, please contact me. If anyone else knows where I can contact him, please advise. Rick Rozycki, 5830 S. McVicker Ave., Chicago, IL 60638. 461

Experienced Curatorial Assistant available for hire. Worked in a major museum for over 18 years but due to budget problems a number of layoffs occurred in June. My skills include sorting, identifying, labeling, preparation, loans and tours. My personal interests are worldwide butterflies, esp. neotropical, and beetles. I also do specimen preparation for private collectors for a reasonable fee. Brian Harris, 901 North Alfred St, Apt. B, Los Angeles, CA 90069, bharris@nhm.org. Please contact me for more information. 454

Help Wanted

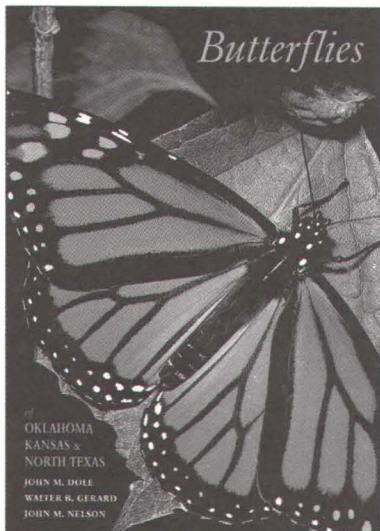
Research Request. I am a grad student conducting a higher-level molecular phylogenetic analysis of the world sphingid moths under the supervision of Drs. C. Mitter, J. Regier and I. Kitching. I need selected New World genera, and numerous Old World genera, especially from Africa and the Australasian and Oriental Regions to complete my studies. I will gratefully provide the necessary supplies and instructions, a list of needed genera, and cover the shipping costs for anyone willing to help. It is possible that further assistance with expenses could be arranged in special cases. Akito Kawahara, Maryland Center for Systematic Entomology, University of Maryland, 4112 Plant Sciences, College Park, MD 20742-4454 USA, (301) 405-2089, kawahara@umd.edu 461

Wanted. Looking for William T. M. Forbes, **Lepidoptera of New York and Neighboring States**, Part I, III,

continued on pp. 27



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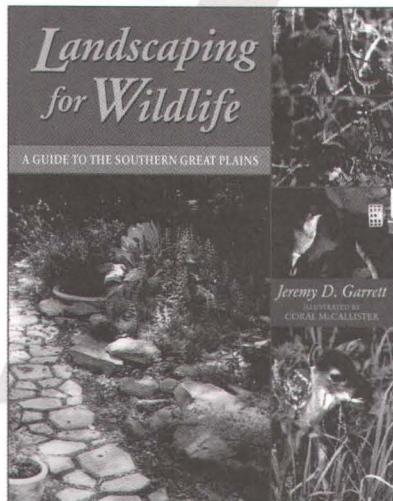
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Membership Update...

Julian Donahue

This update includes all changes received by 28 Feb. 2004.

Correction to 2002

Membership Directory:

Murphy, Preston V.: change unit number from "#04-01" to "#04-04"

New and Reinstated Members:

members who have joined/renewed/been found/or rescinded their request to be omitted since publication of the 2002 Membership Directory (not included in the 2000 Membership Directory; all in U.S.A. unless noted otherwise)

Adams, Eleanor R. (Mrs.): 135 North Missouri Street, Liberty, MO 64068-1729.

Angel, Leslie M.: 4511 Huckleberry Court, Hilliard, OH 43026-9155.

Badgero, Dwayne: 588 Crabapple Trail, Hanover, MI 49241-9711.

Bean, Caitlin (Ms.): 5707 Brown Road, Oxford, OH 45056-9773.

Bouton, William: 2221 King Court, Unit 16, San Luis Obispo, CA 93401-5177.

Brown, Robert: 1327 East Washington Ave. #217, Harlingen, TX 78550-5684.

Charpentier, Alain (Mr.): 547 boulevard Laurier, Mont-St-Hilaire, Quebec J3H 4X7, Canada.

Charvet, Philip: 20325 124th Avenue SE, Kent, WA 98031-3802.

Dennison, Gary: 204 Powell Place, Trussville, AL 35173-1240.

Desch, William E.: P.O. Box 5033, Hanover, NH 03755-5033.

Fisher, John F.: 14549 West 19th Street, Sand Springs, OK 74063-4428.

Flores, René: 1001 South 10th Street, Suite G, PMB #126, McAllen, TX 78501-5045.

Foster, Leslie: Niagara Parks Butterfly Conservatory, P.O. Box 150,

Niagara Falls, Ontario L2E 6T2, Canada.

Garwood, Kim: P.O. Box 5000, Mission, TX 78573-5000.

Graham, Amelia S.: 411 Seguin Street, New Orleans, LA 70114-2357.

Grubisic, Donna: 1415 Azalea Drive, Carpinteria, CA 93013-1606.

Hardy, Dan H.: 2001 Plumbrook Drive, Austin, TX 78746-6229.

Hays, David: 4104 Gull Harbor Road NE, Olympia, WA 98506-2461.

Heyse, John V. (Ph.D.): 190 Duperu Drive, Crockett, CA 94525-1433.

Hines, Terry (Ms.): 1750 Heartwood Drive, McKinleyville, CA 95519-4253.

Jones, Thaddeus Charles (Ph.D.): 20742 Prince Creek Drive, Katy, TX 77450-4906.

Kemner, John: Apartado 68, Oaxaca, Oaxaca 68000, Mexico.

Long, Roger (M.A.): 2703 Maple Avenue, Terre Haute, IN 47804-3733.

Loudell, Allan R.: 203 Landau Way, Bear, DE 19701-1145.

Macnaughton, Alan: 49 Northforest Trail, Kitchener, Ontario N2N 2Y7, Canada.

Nantasak, Pinkaew: Dept. of Entomology, Faculty of Agriculture, Kasetsart University, Kamphangsaen Campus, Kamphangsaen, Nakorn Pathom 73140, Thailand.

Oboyski, Peter: 201 Wellman Hall, MC3112, University of California, Berkeley, CA 94708-3112.

Olle, Dennis J.: 934 Andres Avenue, Coral Gables, FL 33134-6422.

Pence, J. Akers: 318 SE 71st Street, Gainesville, FL 32641-7798.

Peterson, Thomas J.: 843 Margaret Court, Saint Charles, IL 60174-3740.

Potter, Ann: 4104 Gull Harbor Road NE, Olympia, WA 98506-2461.

Quintanilla, Gil: 1810 East Griffin Parkway, Mission, TX 78572-8518.

Rosier, Robert Peter (M.D.): 89 Main Street, Southborough, MA 01772-1430.

Sinclair, Allan: 1852 Hwy 118E, RR3, Bracebridge, Ontario P1L 1X1, Canada.

Snyder, Rick: 2154 North Laramie Avenue, Chicago, IL 60639-3126.

Taggart, Lawrence P.: 58 Independence Drive, Westbrook, ME 04092-4517.

Thacker, Robert P.: 275 Litchfield Lane, Houston, TX 77024-6038.

Waring, Paul (Ph.D.): Windmill View, 1366 Lincoln Road, Werrington, Peterborough PE4 6LS, England.

Address Changes

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

Barksdale, Charles M. (Ph.D., FRES): 2012 Tumbleweed Drive, Prairie du Sac, WI 53578-1188.

Bergman, William: 9630 Riverside Drive, Grand Ledge, MI 48837-9275.

Boender, Ronald: c/o Butterfly World, 3600 West Sample Road, Coconut Creek, FL 33073-4400.

Boyd, Bret M.: 7055 Forest Hills Drive, Denver, NC 28037-8218.

Cotton, Adam Miles: 9/87 Moo 3, Thepsathit Road, Tambon Suthep, Muang District, Chiang Mai 50200, Thailand.

Clayton, Dale L.: Department of Biology, La Sierra University, 4700 Pierce Street, Riverside, CA 92515-8247.

Crabtree, Laurence: P.O. Box 25, Adin, CA 96006-0025.

Darmstadt, Chip: 255 McCullough Hill Road, Middlesex, VT 05602-8709.

Davis, Christopher K.: 125 Woodlakes Drive, Eastman, GA 31023-3602.

Debinski, Diane (Dr.): Dept. of EEOB, Bessey Hall, Iowa State University,

Ames, IA 50011-1020.

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Ziegleria...continued from pp. 30

Warren, A. D., D. J. Hanson, E. Knudson & C. Bordelon. 2003. *Achlyodes pallida* (Hesperiidae): a new record for the United States. News of the Lepidopterists' Society 45(4):128-131.

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Marketplace...cont'd from pp. 24

and IV. Also, Douglas C. Ferguson, **The Moths of America North of Mexico**... Geometroidea Geometridae. Alain Charpentier, 547 boulevard Laurier, Mont-St-Hilaire, Quebec J3H 4X7, Canada, *alaincharpentier@hotmail.com*

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I am conducting a survey of past and present members of the Society. A 2-page *Lepidopterists' Opinion Survey* will be sent to any member willing to participate. It is easily completed and will provide every member an opportunity to express their opinions and views on a variety of topics regarding the Society. Hopefully, this information will be used for the benefit of the general membership of the society. Note that the Society has neither authorized or sanctioned my survey. John H. Masters, 26503 Hillsfall Court, Newhall, CA 91321, *John@ButterflyTrips.com*

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I am developing an historical checklist of moth species observed and/or collected in South Carolina. If you have specific and detailed information on specimens, especially those neither reported to the Season Summary or deposited in museum collections, please contact me. If your specimens are in a museum collection, knowing about them is also valuable to me. Contact Dr. John Snyder, Dept. of Biology, Furman University, Greenville, SC 29613, *john.snyder@furman.edu*

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Wanted: Donation of papered Ithomiinae, particularly South American sp., singles or series welcome, undetermined or not but with full data please. I am building a major reference collection as part of my research work. I may be able to help with postage but due to limited funds donations of postage would also be appreciated. I am also interested in bibliographic citations on determination of Ithomiinae. Please contact Jorge R. Montero-Moreno, P.O. Box 1913-1000, San José, Costa Rica.

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Hostplants of the Moth and Butterfly Caterpillars of America North of Mexico

by

Gaden Robinson, Phillip Ackery, Ian Kitching, George Beccaloni, and Luis Hernández

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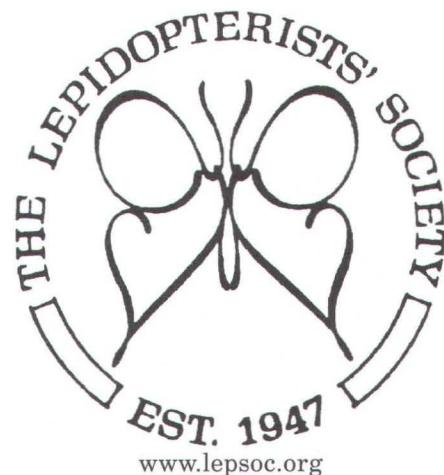
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Ziegleria guzanta (Schaus, 1902): A New Hairstreak (Lycaenidae) for Texas and the U.S.

Andrew D. Warren¹, David J. Hanson², Ed Knudson³ and Charles Bordelon⁴

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On January 27, 2004, at about 12:30 hrs., while out for a noon walk near his home on the east side of Mission, Hidalgo Co., Texas, Dave Hanson happened to see a small brownish hairstreak land on a leaf near him. Thinking at first it was a worn *Calycopis isobeon* (Butler & H. Druce, 1872) [Dusky-blue Groundstreak], a common local species, he almost passed it by. However, when the butterfly flew to another leaf and did not display any blue on the upper surface of its wings, Hanson became very interested; he then put on his glasses and bent down to have a closer look.

The butterfly was perching with its wings closed, which allowed a good view of its ventral surface. The pattern of the ventral hindwing suggested it was not a *C. isobeon*, but perhaps one of two *Electrostrymon* species rarely reported from the lower Rio Grande Valley (see discussion below). Hanson quickly returned home to get his camera, and thankfully, the hairstreak was still perching on the same plant when he returned. Hanson took several photos of the butterfly (see Cover photo) and decided to collect the specimen, knowing that there are many similar-looking hairstreaks that can be confused with *Electrostrymon* species just across the river in Mexico, and that a definitive determination from a ventral photo alone would probably not be possible.

His fingers were the only collecting gear he had (since he did not want to risk returning home again for a net), so Hanson carefully grabbed the tips of the hairstreak's forewings. He then

returned home and placed the specimen in a small plastic container and cooled it in the refrigerator. About 20 minutes later, Hanson removed it from its container and carefully spread its wings with forceps to obtain a dorsal photo. After sending the dorsal and ventral photos of the hairstreak to the senior author for determination, it was realized that the specimen would have to be more closely examined for an accurate determination to be possible, and the specimen was dispatched in the freezer and mailed to the senior author the next day.

After spreading and carefully examining the specimen (Figs. 1,2), in comparison with similar Mexican species, it was determined that Hanson's hairstreak is a female *Ziegleria guzanta*, a species previously unrecorded from the United States. The common name of Mountain Groundstreak was applied to *guzanta* by Warren and Llorente (1999).

Upon briefly reporting this record to the TX-Butterfly listserv in mid-February, 2004, just before publication of this note, we learned of one additional record of *Ziegleria guzanta* from Texas: a photo (fig.3) taken by Chris Durden in Langtry, Val Verde Co., in the cactus garden of the Jersey Lilly Saloon, Judge Roy Bean Visitor Center, on October 27, 1991. This individual also appears to be a female.

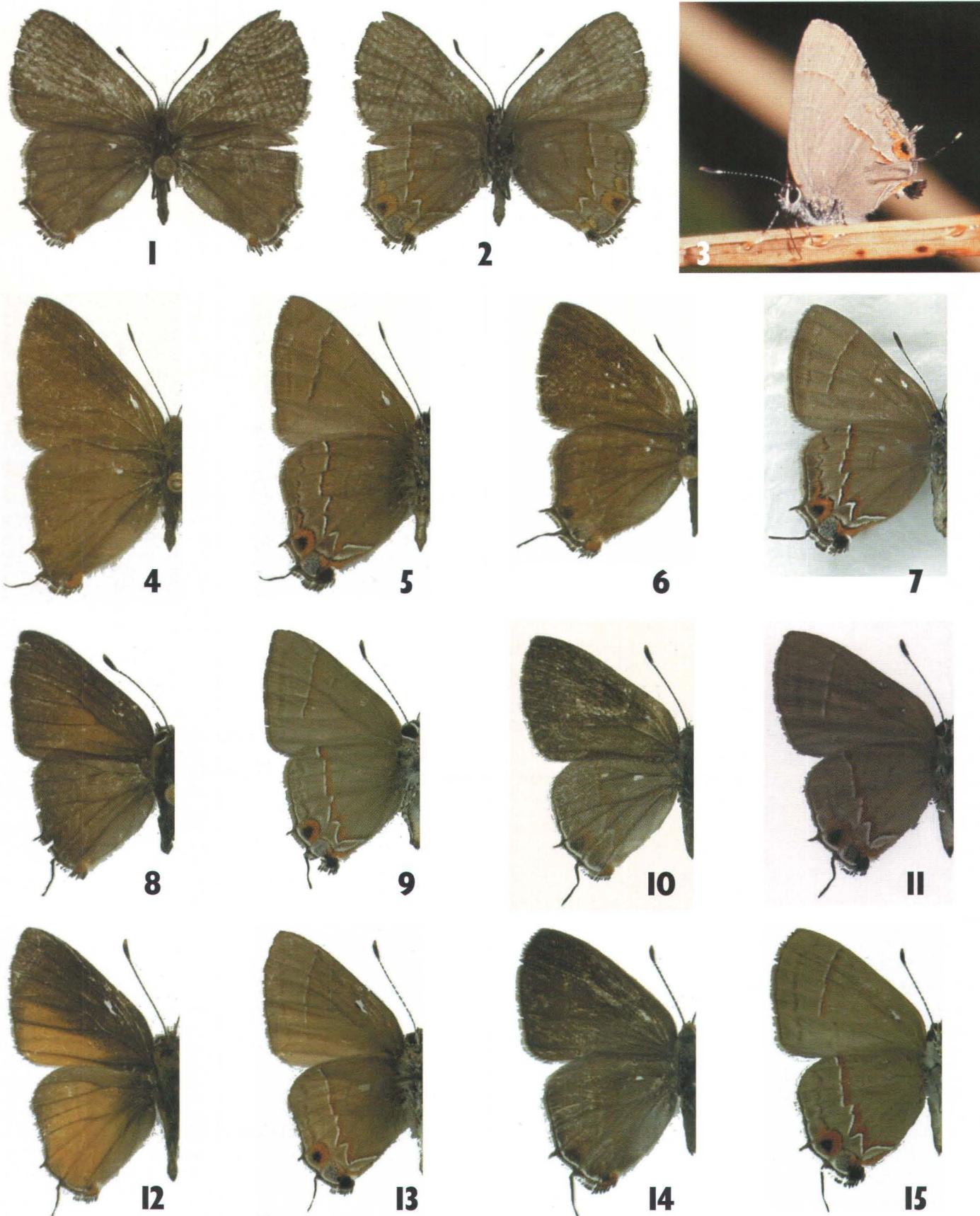
Ziegleria guzanta is a poorly known Mexican species, originally described by Schaus (1902) from Jalapa and Orizaba, [Veracruz], Mexico, in the genus *Thecla* Fabricius (U.S.N.M Type No. 5952). Its generic placement in recent decades has been variable, with

some references (e.g. de la Maza et al. 1989, Luis et al. 1991, Vargas et al. 1991, de la Maza & de la Maza 1993) placing *guzanta* in *Calycopis* Scudder, following Draudt (1917-1924), who listed *guzanta* in the "Cecrops group" of *Thecla* (though did not illustrate the butterfly). Other authors placed *guzanta* in the "hesperitis group" of the catch-all genus *Thecla* (e.g. Vargas et al. 1996, Vargas et al. 1999), while later publications place *guzanta* in *Kisutam* Johnson & Kronlein (e.g. Warren & Llorente 1999), or most recently, in *Ziegleria* Johnson (e.g. Llorente et al. in press, Robbins in press, also see Johnson 1993).

text continued on pp. 30

Explanation of Plate

- 1, 2:** *Ziegleria guzanta*, female, (recto & verso) TX: Hidalgo Co., east side of Mission, 27-I-04, D. Hanson. **3:** *Ziegleria guzanta*, female, TX: Val Verde Co., Langtry, 27-X-91, Photo by Chris Durden. **4, 5:** *Ziegleria guzanta*, male (recto & verso), MEX: Michoacan, Urupan, Cerro de la Cruz, 2000m., 23-VII-96. **6, 7:** *Ziegleria guzanta*, female (recto & verso), MEX: Nuevo Leon, Parque Estanzuela, 1-XI-00. **8, 9:** *Electrostrymon joya*, male (recto & verso), MEX: Sinaloa, Hwy, 40 at Magistral, 1-XII-90. **10, 11:** *Electrostrymon joya*, female (recto & verso), MEX: Colima, Paso Ancho, 10 km. E. of El Colomo, 31-XII-95. **12, 13:** *Electrostrymon sangala*, male (recto & verso), MEX: Sinaloa, Mazatlan, 28-XII-89. **14, 15:** *Electrostrymon sangala*, female (recto & verso), MEX: Colima, 2 km. W. of Chandialbo, 2-I-96.



Ziegleria guzanta, and *Electrostrymon* spp. occurring in Texas

Hoffmann (1941) knew of *guzanta* in Mexico only from the state of Veracruz (following Schaus), though its Mexican distribution has become better known in recent decades. Vargas et al. (1991) reported *guzanta* from montane Guerrero (Omiltemi), and Luis et al. (1991) reported it from Oaxaca (Metates, ca. 900 m.; Puerto Eligio, ca. 650 m.). De la Maza and de la Maza (1993) reported *guzanta* from Chiapas at 1200-2500 m. Vargas et al. (1996, 1999) reported *guzanta* from six localities in Jalisco, ranging from 900 m. to over 1750 m. (March, June and November), and Llorente et al. (in press) report *guzanta* from Rancho la Noria, Nayarit, at ca. 1600 m., from January. *Ziegleria guzanta* has also been recorded from montane Michoacán (Luis et al., unpublished; Figs. 4,5), Sinaloa (Warren, unpublished), Sonora (Stanford & Opler 1993, as "guzunta"), Nuevo León (Figs. 6,7), Coahuila (C. Durden, pers. comm.) and Tamaulipas (Jim Brock, unpublished). As indicated by localities from which *guzanta* is known, the species is generally found in humid or semi-humid montane habitats; thus, its appearance in the lower Rio Grande Valley of Texas is rather surprising, and parallels the unexpected appearance of the normally montane skipper *Achlyodes pallida* (R. Felder, 1869) in the Mission area two months earlier (Warren et al. 2003). Nothing is yet known about the life history of *guzanta*, and the larval foodplants remain unreported; however C. J. Durden (pers. comm.) has observed *guzanta* in abundance around *Quercus vaseyana* Buckley [also known as *Q. pungens* Liebm. var. *vaseyana* (Buckley) C.H. Muller] in the canyon above Rancho Bonito in the Serranías del Burros, Coahuila.

Ziegleria guzanta is one of several very similar Neotropical species of hairstreaks that often cannot be reliably determined from photographic images taken in the field. Several *Ziegleria* species, as well as *Electrostrymon* species, and others, can be mistaken for *guzanta*. Among species already reported from Texas,

female individuals of *Electrostrymon sangala* (Hewitson, 1868) [Ruddy Hairstreak], (Figs 12-15), and *E. joya* (Dognin, 1895) [Muted Hairstreak], (Figs. 8-11) (these formerly known as *E. endymion cyphara* (Hewitson, 1874) and *E. canus* (Druce, 1907), respectively; see Opler & Warren 2002), are most likely to be confused with *guzanta*. Female *Ziegleria guzanta* can usually be separated from females of these two *Electrostrymon* species by its darker overall coloration, the row of red-orange crescents capping the ventral hindwing submarginal band almost all the way to the apex, and other details of the ventral wing markings and wing shape (see figs.). Males of the three species (figs.) are less likely to be confused when upperside coloration can be seen. One of several additional Mexican species not yet reported from the US that may be confused with *guzanta* is *Thecla sethon* Godman & Salvin, 1887, a female of which was illustrated by Bordelon & Knudson (2003) as *Electrostrymon joya*. The image of "*Calycopis guzanta*" in de la Maza (1987: plate LXII, fig. 19) is not of this species; *guzanta* lacks any trace of blue on the dorsal hindwing.

Acknowledgments:

The senior author would like to thank Robert Robbins (National Museum of Natural History, Washington, DC) for determining many of his hairstreak specimens over the years, including some illustrated herein. We also thank Jim Brock (Tucson, Arizona) for sharing information from NE Mexico, Dana Ross (Corvallis, Oregon) for helping us access important literature at the last minute, Chris Durden (Austin, Texas) for sharing his unpublished data on *guzanta*, and Jorge Llorente, Armando Luis and Isabel Vargas (UNAM, Mexico City) for many years of help obtaining literature and collecting permits for the senior author.

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The Brazilian Skipper (*Calpodes ethlius*, Hesperiidae) in West Virginia

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Southern species that periodically stray northward are always of interest, but as increasing numbers of people become well informed about butterflies and regularly watch them, the chance of recording a new species within a state diminishes. It was with some surprise that we realized our recent sighting of a Brazilian Skipper (*Calpodes ethlius*, Hesperiidae) in West Virginia was a state record.

On 31 July 2000 we visited the tree-bordered verge of Rt. 41, 1.6 miles southwest of its jct. with Rt. 60, at the east edge of Babcock State Park in Fayette County in south-central West Virginia, ca. 20 miles north of Beckley. A long ribbon of blooming Common Milkweeds (*Asclepias syriaca*, Asclepiadaceae) lined the road for several hundreds of feet, and we wanted to check the flowers for Lepidoptera. This plant is one of the most attractive eastern nectar sources, and even though its bloom season was passing, some plants were still producing abundant nectar, and many butterflies, skippers, and diurnal moths were feeding at the fragrant flowers.

At 9:30 a.m. we noticed a large dark skipper nectaring in a partially shaded portion of the milkweed patch. Its forewing tips were long and elegantly pointed, protruding beyond the hindwings for nearly half their costal length; while the warm brown hindwing venters showed a row of three small, squarish, closely spaced white marks, the outer one partially split. When the skipper briefly opened its forewings to a 35-degree angle, they revealed a pattern of large glassy-white spots on the dorsum. Our field

identification of Brazilian Skipper was confirmed by comparing photographs taken of this skipper in the field (Figs. 1-2, originals in R. Dirig's collection) with pinned specimens at the Cornell University Insect Collection.

This individual fed with closed wings at milkweed flowers, flipping four times from one inflorescence to another, before flying off a few inches above the ground, with a bouncy, wave-like vertical trajectory. It landed three more times to take nectar at the bright blue flowers of naturalized Chickory (*Cichorium intybus*, Asteraceae) that were in full display on the sunny roadside, and then zoomed off down the corridor and was gone. Opler & Krizek (1984) recorded no U.S. nectar sources for this skipper, while Iftner *et al.* (1992) listed only one, Rough Blazing Star (*Liatris aspera*, Asteraceae); so our inland nectaring observations represent new information. The 28.5-mm-long, shiny black proboscis (Scudder 1889) undoubtedly allows adults to feed at a wide variety of other flowers.

The Brazilian Skipper resides from Argentina north through Central America and the Caribbean to southern Florida and Texas (Opler & Krizek 1984; Scott 1986). It has been known to disperse in massed flocks on occasion, and moves north to colonize the Atlantic coastal plain, Gulf Coast, and lower Mississippi River valley each year, especially in late summer, rarely penetrating to the Canadian border (Scott 1986; Layberry *et al.* 1998). At times it has been considered a pest of cultivated Cannas (*Canna* spp., Cannaceae), the major larval host, as widespread growing of these large

gaudy monocots allows it to reproduce far to the north of its natural range (Scudder 1889: 1754). A survey of various sources (Opler 1995, Opler *et al.* 1995, and state Lepidoptera manuals and atlases) produced records of the Brazilian Skipper for Florida, Alabama, Mississippi, Tennessee, and Ohio; Atlantic coastal parts of Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, and Massachusetts; and Point Pelee, Ontario. In the East this skipper appears not to have been recorded from Kentucky, Indiana, Michigan, or most of New England, where lepidopterists should watch for it.

Acknowledgements

We thank Thomas J. Allen for useful information, and Edward A. Cope, John F. Cryan, Gabriel Gartner, Douglas H. Goldman, and Kelly Miller for helpful feedback on the manuscript.

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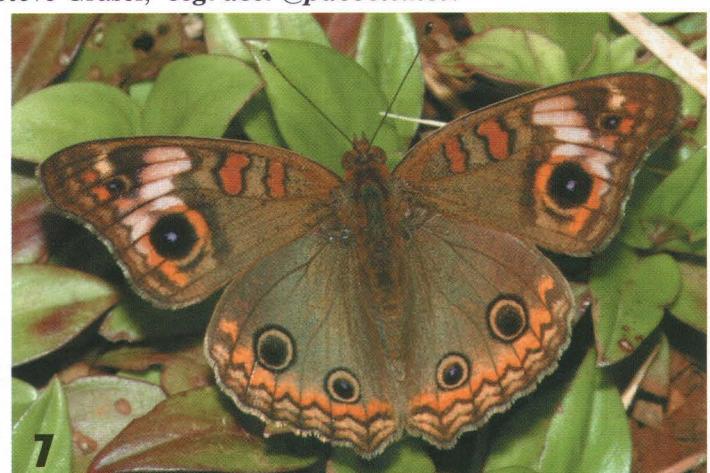
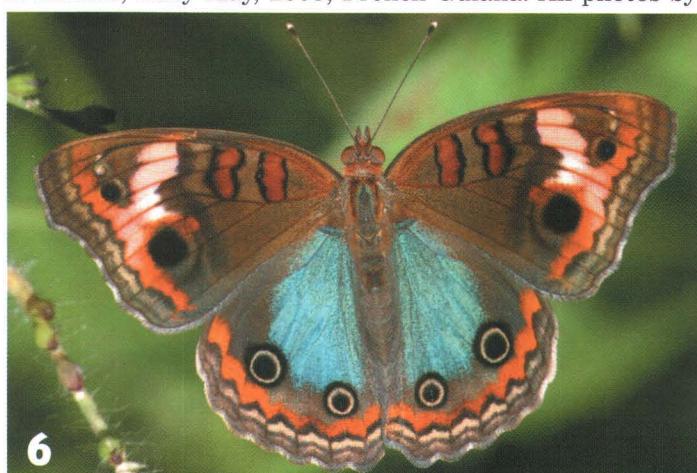


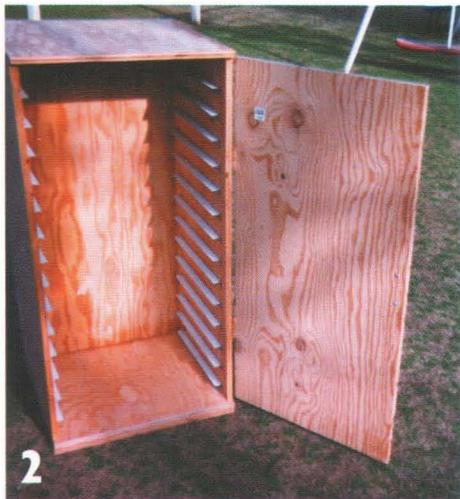


Photo Essay... Buckeyes.

1. *Junonia coenia*, California. **2/3.** Flash and Conceal defense mechanism

in *J. coenia* in California. The upper photo shows the typical resting position while the lower shows the same buckeye after it was startled. The photographer suggests that the raised forewings reveal the profile of a parrot-like bird. **4.** *Junonia lavinia*, mid-September, 2002, in Yasuni, Ecuador. This ventral view, taken at 7:40 AM, shows the buckeye covered with dew. **5.** *Junonia lavinia*, French Guiana, in early May 2003. It was starting to rain and this photo was taken from under my umbrella. **6.** Dorsal view of *J. lavinia*, mid-September, 2002, in Yasuni, Ecuador. **7.** Dorsal view of *J. lavinia*, early May, 2003, French Guiana. All photos by Steve Graser, segraser@pacbell.net.





3



4



Build Your Own California Academy or Cornell Cabinets...

A: A riser, showing beveled holes; **B.** Completed cabinet; **C.** Cabinets in use, stacked; **D.** Hinge placement on cabinet. All photos by Kelly Richers. Refer to Kelly's detailed instructions in his article on pp. 21.



WV State-Record: Brazilian Skipper (*Calpodes ethlius*, Hesperiidae)

A state-record Brazilian Skipper (*Calpodes ethlius*, Hesperiidae) nectaring at Common Milkweed (*Asclepias syriaca*) in Fayette County, West Virginia, on 31 July 2000. Photos by Robert Dirig. See the article on pp. 31.

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Submission Deadlines

Material for Volume 46 must reach the Editor by the following dates:

Issue	Date Due
1 Spring	You missed it!
2 Summer	April 30, 2004
3 Autumn	August 13, 2004
4 Winter	Oct. 29, 2004

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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Photo Essay...Leafwings (Charaxinae)

1. Florida Leafwing, *Anaea floridalis*, Everglades N. P., December 1990; 2. The Troglodyte, *Anaea troglodyta*, near Black River,, St. Elizabeth, Jamaica, July 1991; 3. Pale-Spotted Leafwing, *Anaea pithyusa*, Roma, Starr Co., TX, August 1999; 4. Goatweed Leafwing, *Anaea andria*, Stengl "Lost Pines" Biology Station (SLP), Bastrop Co., TX, July 2001; **Life history (A. andria):** 5. Female Goatweed Leafwing in typical resting posture on a larval host, wooly croton (*Croton capitatus*, Euphorbiaceae), SLP, Bastrop Co., TX, August 1999; 6. Early instar larva on "frass chain" with typical feeding damage to bush croton, *Croton fruticulosus*, Brackenridge Field Lab., Austin, Travis Co., TX, June 2002; 7. Late instar larva revealed in rolled leaf hibernaculum, data as 6; 8. Pupa, Bastrop Co., TX, June 2001. All photos by Phil Schappert.