



NEWS

of the LEPIDOPTERISTS' SOCIETY

No. 3 May/June 1992

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ASSOCIATE EDITOR

NEWS
FROM
EUROPE
W. O. De Prins



ZONE COORDINATORS

- | | | |
|-----------------|------------------|------------------------|
| 1. Ken Philip | 6. Ed Knudson | 10. Dave Winter |
| 2. Jon Shepard | 7. Ross Layberry | 11. J.C.E. Riotte |
| 3. Bob Langston | 8. Les Ferge | 12. Eduardo Welling M. |
| 4. Ray Stanford | 9. Andy Beck | 13. Boyce Drummond |
| 5. Ron Royer | | |
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The Status of the Missouri Woodland Swallowtail (Papilio joanae) in Missouri

Dr. Felix Sperling recently completed his doctoral thesis at Cornell University on the phylogeny of swallowtail butterflies. Access to equipment for DNA restriction site analysis at Cornell enabled him to chart the relationships of the North American Papilios in a far more concise manner than had been attempted previously. One group of genes, mitochondrial DNA, of various Papilios was used to genetically "finger print" their evolution and establish the most complete picture to date of the relationships among the species. The study revealed that the mitochondrial DNA of Papilio joanae J.R. Heitzman is related to that of the Old World Swallowtail, Papilio machaon Linnaeus. Papilio machaon presently occurs in parts of most states in the western U.S., central and western Canada, Alaska, parts of Asia, Europe and northern Africa. Sperling theorizes that a population of P. machaon became geographically isolated during glacial times and subsequently evolved into populations now known as P. joanae, which bear little superficial resemblance to the yellow colored Papilio machaon. With this evidence, it seems that the Missouri Woodland Swallowtail is a geographically isolated and evolved butterfly of the Ozark Region.

The mitochondrial DNA of P. joanae is also found in three other taxa: Papilio brevicauda Saunders, from the Maritimes; a hybrid population of Papilio machaon X Papilio polyxenes Fabricius (= Papilio kahli F. & R. Chermock) from central Manitoba; and a hybrid population of Papilio machaon X Papilio zelicaon Lucas from central Alberta. It will now be especially important to determine the relationships of other genes in Papilio joanae, including those causing its black wing coloration. This is the only endemic butterfly known to occur in Missouri.

Dr. Sperling presently has a postdoctoral position with the Biology Department, University of Ottawa, Ottawa, Ontario.

Sperling, Felix A.H., 1991. *Mitochondrial DNA Phylogeny, Speciation, and Hostplant Coevolution of Papilio Butterflies*. Presented to the Faculty of the Graduate School of Cornell University, August 1991.



(Heitzman photo)

Papilio joanae J.R. Heitzman, fifth instar, August 1973, Warsaw, Missouri.

The Butterfly Garden Butterfly - Human "Symbiosis"



The Butterfly Garden is a composite of winged jewels, aesthetically pleasing flowers, rocks, dirt and me or you. It need not be large, costly or extravagant. A twofold purpose is highly recommended: Foremost, establish plants that serve as food and shelter for butterflies. Then consider that the plants should serve personal gardening desires and attract butterflies of importance and significance to you.

Where to start. Small and simple just to get the process started. Your garden can always grow and sophisticate later. I now have a dozen gardens of varying types ranging in size from one foot by six feet to the largest being six feet by 12 feet. The butterfly garden is by far the most rewarding and satisfying.

My butterfly garden is described in detail as an example. It is small, simple, beautiful and consists of relatively few plants. I prefer perennials because they are low maintenance and relatively inexpensive. The garden is in flower from Memorial Day to mid or late September, which is the best I can hope for in the Upper Midwest. The shape is like that of a mushroom laid on its side. I can walk around the perimeter and easily see or reach any plant. The stem of the mushroom shape points northeast while the crescent shaped cap is oriented in length from northwest or southeast. This arrangement provide excellent sun exposure for all plants. For added interest and butterfly basking, glacial boulders small enough to be carried are placed in the garden. Three red and white slabs of Jacobsville Sandstone collected on a field excursion 500 miles from home are laid to form a walking path through the garden. These slabs continuously remind me of pleasant outings elsewhere and generate new dreams of trips to come. Planted in the southeast are the shortest plants; five butterfly weed (*Asclepias tuberosa*) with three Blazing Star (*Liatris* sp.) right behind it. To one side of these are three common milkweed (*Asclepias syriaca*) and to the other is a shrubby cinquefoil (*Potentilla fruticosa*). Beyond the cinquefoil is a clump of chrysanthemums. To the north are taller plants; a yarrow (*Achillea millefolium*), three globe thistles (*Echinops* sp.), and finally a butterfly bush (*Buddleia* sp). In the mushroom stem of the garden are planted Mexican sunflowers which I start indoors from seed. At the very end is a purple coneflower (*Echinacea purpurea*). I add some marigolds and geraniums in late spring for early color.

Which species come to bask, eat, drink, and "be happy" in my garden of 10 plant species and 30 plants? The silver spotted skipper, dreamy dusky-wing, black, tiger, spicebush, and giant swallowtails, cabbage and alfalfa butterflies, American copper, spring azure, coral hairstreak, comma, red-spotted purple, great spangled fritillary, painted lady, and the monarch. This year I will anxiously await new species and the return of past visitors.

Who is most pleased and happy? Me or the butterflies? This I do not know because we are in a mutual "symbiosis" where each contributes greatly to the other's quality of life. Next time someone asks, "What's a butterfly garden?", I suggest you show them a "symbiotic" creation of your own planting.

An excellent reference for attracting all types of wildlife including butterflies is *Landscaping for Wildlife* by Carol Henderson, MN. DNR, 500 Lafayette Rd. Box 7, St. Paul, MN. Some references specific to butterfly gardening are:

Butterfly Gardening - Creating Summer Magic in Your Garden
by the Xerces Society.

The Butterfly Book by Stokes and Williams.

The Butterfly Gardener by Rothchild and Farrell.

The Butterfly Garden by Mathew Tekulsky.

submitted by Ranger Steve Mueller

Monarch Campaign Gains Momentum

Efforts to support the monarch butterfly as the national insect continue to progress at full speed. Capitalizing on the momentum gained through the introduction of House Joint Resolution 200 (H.J. Res. 200), the Special Committee on the National Insect is seeking cosponsors in the House of Representatives and needs a similar bill introduced in the Senate.

The promotion has attracted 82 endorsing organizations, with a combined total of more than 8 million members, who provide support through their membership. Awareness also has reached the media through the distribution of the Entomological Society of America color brochure and supplemental articles from the Committee and the National Wildlife Federation.

On a broader scale, the ecology of the environment, wildlife heritage, insects, and entomology as a profession are gaining significant recognition as a result of the supporting activities.

The media have played a key role in bolstering the case for the monarch. Articles focusing on the promotion of the monarch have been published in various newspapers, newsletters, and magazines, including Ranger Rick, Scholastic News, and American Horticulturist. The monarch was even featured on a cable TV special entitled, "King of the Butterflies", by Dave Zahren.

Educational awareness is also on the rise thanks to an article featuring the national insect campaign in the Weekly Reader, which reached more than 3 million second-graders nationwide. More than 300 teachers responded to the article and requested the monarch brochure and resource information. Request letters detail accounts of butterfly gardens, nature trails, insect rearing, and self-made insect units. One teacher, the daughter of an entomologist, developed a "Never Say Ugh to a Bug" unit. Educational efforts will continue to receive support through educational outreach and supplementary handout materials for young people including coloring sheets and crossword puzzles.

Throughout 1991, significant strides have been made to increase awareness and to gain recognition for the monarch. Large mailings to congress, garden club presidents, butterfly preservation societies, environmental coordinators in education, entomological groups, and teachers have drummed up additional support throughout the nation.

The project gained momentum as the number of cosponsors increased to seven, pushing monarch representation two cosponsors ahead of the honey bee bill. Sponsors include Congressmen Riggs (CA), Evans (IL), Jacobs, Jr. (IN), Hoyer (MD), Swett (NH), Aspin (WI), and Delegate Norton (DC).

Several additional state insects have been designated since the special Committee on the National Insect was formed in 1988. The insects include: the monarch butterfly (AL), the tiger swallowtail as the state butterfly (GA), the viceroy (KY), the spicebush swallowtail (MO), the ladybug (NY), and the tiger swallowtail (VA).

Plans for 1992 are aimed toward maintaining interest in the monarch campaign and encouraging the introduction of a bill similar to H.J. Res. 200, before the 1992 elections.

ESA members, Lepidopterists' Society members, entomology departments, and individuals are encouraged to provide support for the campaign and state coordinators are sought to organize activities and gain cosponsors.

What can you do?

1. Write your congressman/woman to cosponsor H.J. Res. 200 (and don't accept, "We'll support the bill on the floor of Congress" as an answer).
2. Get local teachers, scout leaders, gardeners, environmentalists, and others to do the same.
3. Find people who can approach senators or senate officials to introduce a bill in the Senate.
4. Try an exhibit on the monarch butterfly for the national insect on Earth Day '92.

We're down to the final four months in this session of Congress to gain cosponsors for H.J. Resolution 200 to designate the monarch butterfly as the national insect. We still need a similar bill in the Senate. For more information write to Douglas Sutherland, National ESA Office, 9301 Annapolis Rd., Suite 300, Lanham, MD 20706-3115.

from the March 1992 ESA Newsletter

A Little Chat About Latin Terms

Sometimes one may find in advertisements, letters, etc., phrases like: "Ovae...for sale". Ovae instead of the correct ova! The rather lame excuse for this and similar errors is: "I did not have Latin in school". If one engages in activity in any field, exposure to and use of technical terms pertinent to that field is inevitable. The only way to master them is simply by memorizing. The amateur may not be taken to task for an occasional slip, but there is no excuse when a paper published by a professional (after supposedly having been reviewed by other professionals?!) reveals the author's ignorance regarding the correct forms. One of the disturbing trends propagated by the media is to corrupt terms by taking the plural of a word of Latin or Greek origin and use it as singular. "An agenda" instead of agendum, "a phenomena" for phenomenon, "a bacteria" instead of bacterium and several more. In English as in any living language, changes in form and/or meaning of words are a natural occurrence. This fact, however, is the reason why, for scientific terms, the dead languages Latin and - via Latinization - classical Greek have been selected. The spelling and meaning of terms should stay constant (so one hopes) and thus keep international communication free of misunderstandings regardless of changes in the living languages. I would like to point out here that making the plural serve as singular can lead to confusion. Take the sentence "Scientists are still searching for the bacteria causing the outbreak". Well, it makes a whale of a difference whether they search for a single type bacterium or for bacteria, which means a lot of different "bugs". It seems to me there is a simple way to avoid the corruption of words. Incorporate the word bacterium, as it is, into the English language and then add an "s" to form the plural. It has been done with many other terms, and several examples follow.

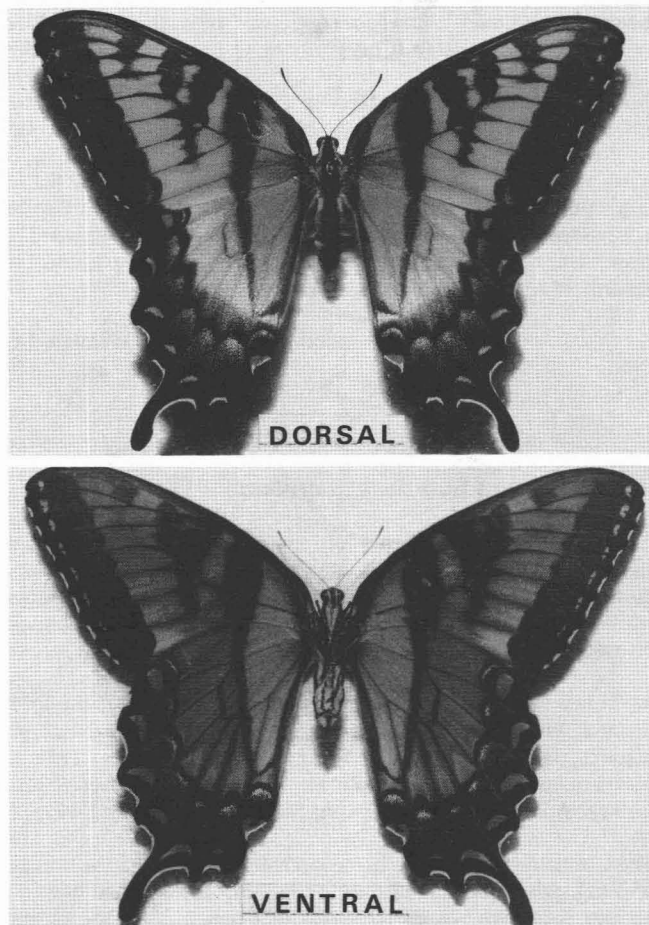
It would be simple to present a list of terms, and point out the errors frequently encountered. I prefer, however, to provide a few remarks and will try to show some of the intricacies of the Latin language, but only very, very superficially!! This approach, I hope, will be of interest to at least some of the readers and should facilitate remembering the correct forms. Many books on Lepidoptera contain glossaries that explain the meaning of terms. But only a few note the plural or other forms and then merely for the most obvious and least complicated instances like: pupa (pl. pupae). But let us start with the topic.

Larva, pupa, tibia, coxa or antenna all change the *a* at the end to *ae* for the plural. As a matter of fact the overwhelming majority of *-a* words behave in this fashion. However, there are exceptions. One is the

name of the small tubercle above each eye in some families of "micros"; it is called chaetosema. The plural is chaetosemata. The ending *-ma* indicates Greek origin and, for whatever reasons, the Greek way of forming the plural has been maintained. Another example is edema (or oedema, the accumulation of liquid in cells, etc.). The plural is edemata. Interesting is the term diaphragma with diaphragmata as plural. But the word has been adopted into English as diaphragm (dropping the *a*) and the common plural form is them diaphragms.

submitted by Hermann A. Flaschka

Genetic Mosaic?



In response to Monicas Miller's letter in NEWS #1, 1991 regarding a *P. glaucus* ♀, I will submit my rather schizophrenic specimen for your approval. I found "Carrie" nectaring on a *Eupatorium* in Hardin Co, Texas near Village Creek on 22 September 1991. As I approached, I just remember saying "Dark form, no ... light form ... no ... what the.....?"

What I've read in the past about the determination of color in *P. glaucus* females has a hole in it when I look at this specimen. Friend and fellow Society member Roderick Clayton poses the question, "Is this a genetic mosaic?" I don't know.

Can someone explain this phenomenon?

submitted by Charles Bordelon

Baltimore Checkerspot on Flowers

Tor Hanson noted in the Jan/Feb 1992 NEWS that there were few records of nectar sources of Euphydryas phaeton. My observation records, accumulated for forty years in Maryland, New York, New Jersey and Pennsylvania, confirm that the species is not often seen on flowers. However, in early June 1991, in premature hot weather, Baltimore Checkerspots were abundant nectaring on fresh white flowers of Indian Hemp (Apocynum cannabinum) that occurred around the small wetland across the road from Devil's Den on the Gettysburg Battlefield. One specimen, which I photographed on my thumb, continued to sip my perspiration for ten minutes.

I have also recorded Baltimore Checkerspots in eastern states on flowers of common milkweed (Asclepias syriaca), daisy fleabane (Erigeron annuus), daisy (Chrysanthemum leucanthemum), golden ragwort (Senecio aureus), yarrow (Achillea millefolium) and early flowering thistles. The variability of E. phaeton includes very large butterflies in the Smoky Mountains of North Carolina and Tennessee.

In the interest of historical truth, note that George Calvert, the first Lord Baltimore, died in England soon after receiving his grant of land in America. It was his younger brother, Leonard, who led the colonists to the Chesapeake Bay in 1634. E. phaeton is the State Butterfly of Maryland.

submitted by Calvin E. Schildknecht

Tagged Monarch Recovery (Season Summary Supplement, Zone 10)

There are times when years of devotion to a tedious task are rewarded. John Fales, of Huntingtown, Calvert County, Maryland, on the western shore of Chesapeake Bay, with the help of Jane Robbins and Walter Mitchell, tagged 120 monarchs between 27 August and 30 October, 1991.

On 20 February 1992, Dr. Walter Sakai, administrator of the former Monarch Project of the Xerces Society, informed John that a male monarch, tag #30049, released in Maryland 2 September 1991, had been recovered by Dr. Lincoln Brower at the El Rosario overwintering site near Anganguo in Michoacan, Mexico, 11 February 1992.

When initially captured, the monarch in question had a damaged forewing, possibly acquired during the hurricane that had moved up the east coast two weeks earlier (at that time 11% of the captured specimens had wing damage). It had almost been left un-tagged, out of concern that it might not have the stamina to make the trip south -- another theory shattered!

John has been recording the ebb and flow of the monarch migrations through Maryland for nearly fifty years. Who better deserves to have one of his tags recovered?

Dave Winter
Zone 10 Coördinator

More Beached Butterflies

Over thirty years ago, I was witness to a spectacular mortality of butterflies after a 24-hour, windy and foggy rainstorm over Lake Michigan. In the early morning of 3 October 1959, while walking along the beach of Cedar Grove, Wisconsin, I began to notice large

numbers of dead or dying Colias eurytheme a few feet from the water (along with other flotsam at high wave line). Most of these were partially depigmented (white) due to washing out of the pterin pigments. Eventually I covered several miles of the beach and recorded the following species as migrants - M; late flyers - L; or hibernators - H). Also noted were the approximate number of each species seen per mile of east-facing beachfront.

Danaus plexippus (M), both sexes, 50

Colias philodice (M/L), both sexes, 50, many depigmented, one melanic female.

Colias eurytheme (M/L), both sexes, 100,000, many depigmented.

Vanessa cardui (M/L), 5

Vanessa virginiensis (L/H), 5

Vanessa atalanta (L/H), 5

Nymphalis antiopa (H), 15

Nymphalis milberti (H), 20

Polygonia interrogationis (H), 1

Polygonia comma (H), 3

Limenitis archippus (L), 5

Euptoleta claudia (L/M), 1

Papilio polyxenes (L), 5 (one with orange spots on upperside; all very tattered)

It might be presumed that these many butterflies were either "caught out at lake" by the storm while migrating, or else blown out by the earlier west winds and then washed down to the lake surface by later winds and rain, finally to be washed up on the beach by easterly winds and waves. Very few if any were in condition to fly again, and most were already dead. They were preserved, along with this data, in a 12" x 18" Riker Mount, from which I obtained the list and numbers above.

Might other members have similar observations?

submitted by Dr. Keith S. Brown, Jr.

Member's Opinion

I suggest that it may be time to stir the pot a little on the real name/common name question. I note that when Eve Dingus was talking to the Mississippi Museum of Natural Science last year about the Mississippi checklist, it was decided to give common names first and not to give authors' names after the real names.

Now I see Mogens Nielsen persuaded the Michigan Entomological Society to publish the Michigan list with real names first with authors.

Finally, I notice that, from an older culture, that a company called Zumar AG in Sursee, Switzerland puts out sugar packages with only real names, "Argynnis paphia" and "Papilio podalirius". Which reminds me of the time I tried to explain to a child in Switzerland about the Kleiner Weissling and she looked up and said "Pieris?"

I think Americans have evolved culturally so we can minimize the use of alternate "common" names. The Lepidopterists' Society should, as a matter of policy, strive to avoid use of such alternate names.

submitted by Bryant Mather

The articles printed in this column are opinions expressed by members, they do not necessarily represent the opinion of the NEWS Editor, Editorial Board, or Executive Council of the Lepidopterists' Society. Disparaging or damaging remarks directed at other members, unsigned letters and articles are not printed (anywhere) in the NEWS.

Metamorphosis

The Society has recently been informed of the following members' deaths:

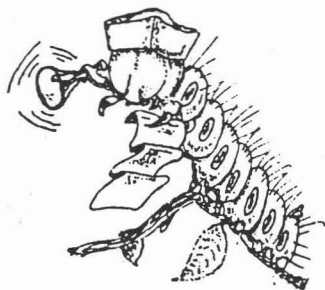
José (Pepe) Herrera González....

of Santiago, Chile, on 29 January 1992. He is survived by his wife, three daughters, several grandchildren and some brothers. A very active lepidopterist in South America, he made important contributions in the Pieridae, Satyridae, Lycaenidae and Hesperidae. He was a member of the Lepidopterists' Society for many years and served on the Executive Council (1953-1955) and as Vice-President (1956-1957).

William D. Field....

of Falls Church, Virginia, on 20 February 1992 at the age of 77. His interests in lepidoptera included both moths and butterflies; especially the Arctiidae (subfamily Lithosiinae), Pieridae, Nymphalidae and Lycaenidae. He retired as Curator of Butterflies from The Smithsonian Institution in 1980. He was a charter member of The Lepidopterists' Society and had been a life member since 1972.

Announcements and Notices



Thank You to Donors and Sustaining Members

The Lepidopterists' Society sincerely thanks those persons who help support the Society by becoming sustaining members. As in the past, sustaining members will continue to be recognized in the biennial membership list which will be NEWS #6 of 1992.

Some members of The Lepidopterists' Society who have not chosen the Sustaining Membership category contribute money to the Society above and beyond their dues. In recognition, a list of the contributors will appear in the July/August 1992 (#4) NEWS with contribution categories noted as follows: \$1-\$9; \$10-\$24; \$25-\$49; \$50-\$99; \$100-\$249; \$250 and above. A donor may request anonymity at the time of the donation, or by written notification (received on or before 1 June 1992) sent to Stephanie McKown, NEWS Editor, 650 Cotterell Dr., Boise, ID 83709.

Tilden Obituary

Readers of the Lepidopterists' Society NEWS and friends of Bill Tilden who do not normally see The Pan-Pacific Entomologist, might be interested in an 11-page obituary in the January 1992 issue [Vol. 68(1):27-37]. The article was written by Paul H. Arnaud, Jr. of the California Academy of Sciences, a long time associate and friend of the Tildens. The many photographs accompanying the piece include not only members of the Tilden family, but also such members of the Lepidopterists' Society as Lloyd Martin, Harry Clench, Fred Thorne, and many others.

submitted by C.D. Ferris

Whose Monarch Tag?

Last fall, Peter W. Post encountered a Monarch Butterfly with a wing tag, at Snug Harbor, Staten Island (Richmond County), New York. He states...

"I could easily read the number on the tag (No. 910) with my binoculars and with the naked eye. I tried to capture this individual by hand, to see what information was printed on the upper surface of the tag, but it never opened its wings long enough for me to do so. I wrote Fred Urquhart, at the University of Toronto, hoping that he could identify the place and date it was tagged. However, he replied that he used only 5 digit numbered tags during 1991. Thus, he could not identify the tag.

Does anyone else know who is tagging Monarchs?"

Please contact: Peter W. Post, 141 West 73rd Street, # 3J, New York, NY 10023-2916.

Karner Blue Symposium Held

The Karner Blue Butterfly Symposium was held on 21 April 1992 in Zanesville, Ohio. It was sponsored by the U.S. Fish and Wildlife Service, Minnesota Department of Natural Resources, Wilds International Center for the Preservation of Animals, The Nature Conservancy and University of Minnesota. The U.S. Fish and Wildlife Service has proposed to grant federal endangered species status to the Karner Blue Butterfly (*Lycaeides melissa samuelis*) in 1992. This symposium addressed the growing need for an exchange of information on the techniques and results of research and management activities. In addition, status reports were given and presentations were made on behavior, ecology, life history, community/species restoration.

The Symposium was followed by a three-day Karner Blue Butterfly Population and Habitat Viability Assessment Workshop, hosted by the U.S. Fish and Wildlife Service, and held at the nearby WILDS Conference Center. The Symposium's proceedings will be published through the University of Minnesota Agricultural Experiment Station, and will serve as a valuable reference in future butterfly conservation activities.

Kentucky Lepidopterists' Spring Field Trip

The Society of Kentucky Lepidopterists held a Spring field trip in the area of Bear Camp Road in Bullitt County, Kentucky on Saturday 11 April 1992. Ten members attended and recorded 21 species of spring butterflies.

Included among the twenty-one species of butterflies were the following interesting catches. Amblyscirtes hegon, Pterourus glaucus, P. troilus, Eurytides marcellus, Pieris virginiensis, Falcapica midae, Celastrina eбенina, Incisalia henrici, Feniseca tarquinius, and Chlossiana bellona.

The Society of Kentucky Lepidopterists, now in its 18th year, invites you to join! In addition to annual meetings and spring and fall field trips, each member receives four newsletters annually. Dues are \$5.00 each year. For more information and membership contact: Charles Covell, Department of Biology, University of Louisville, Louisville, KY 40292.

submitted by C. V. Covell, Jr.

Louisville 7th Grader Wins Science Award

Louisville, Kentucky seventh grader, Jessica Hutti, was the recipient of three middle school science awards at the highest regional level. Ms. Hutti's science project demonstrated Dyar's Law, using the headcapsules of laboratory raised Tobacco Hornworms (Manduca sexta). She was aided by Dr. Doug Dahلمان of the University of Kentucky Entomology Department, and Charlie Covell.

submitted by C. V. Covell, Jr.

Collecting in Iowa

If you are traveling through Iowa after the Lepidopterists' Society meeting this summer, I invite you to stop and survey the lepidopteral wonders of Iowa's prairies, woodlands and wetlands. Late June and early July is the flight period of wetland and prairie butterflies including Hesperia, Poanes, Polites and Oarisma. Interesting sites are easily accessible from Interstate 80. Other sites can be visited in a half or full day trip off the Interstate. There is some existing information about butterflies at a number of sites, but very little information exists about moths in Iowa.

Sites easily accessible from Interstate-80 vary in habitat from woodland to wetland prairie and are distributed across the southern portion of the state. If weather conditions are good, trips off the Interstate of as little as 2 hours should be rewarding.

Iowa's largest prairies are located in the northern portion of the state. The Dickinson-Emmet County area in the northwest has several 100+ acre prairies in good condition.

Several of the sites available are State Preserves. The Iowa Department of Natural Resources allows collection for identification purposes, but permission must be obtained from the State Preserves Board. Iowa has several species of butterflies on the state threatened and endangered lists. Collection of those species requires a collecting permit.

I will be at Lakeside Lab Field Station near Sprit Lake for part of that week working on an on-going study of skippers on prairie sites and would welcome company. For those interested in staying over, accommodations are available at the Field Station. Room and board at the Field Station is approximately \$30 per day. Advance reservations are necessary.

For further information, packets of maps, schedules and collecting permits please submit the names of collectors and the sites likely to be visited. I must receive your request before the last week of May. Contact: John Fleckenstein, Department of Natural Resources, Wallace State Office Building, Des Moines, IA 540319. phone (515) 281-8967.

India Tour

Julian Donahue, curator of Lepidoptera at the Natural History Museum in Los Angeles, will escort a **Natural History Tour of India** 11 October - 5 November 1992, with optional extension to Darjeeling. Julian collected and studied butterflies and birds when he lived in India. This trip will concentrate on the post-monsoon wildlife of central and southern India. Ideal for birders and general natural historians, but the trip is **NOT** a collecting trip. For further information or brochure call Geostar Travel at 1-800-624-6633, or Julian at (213) 744-3364.

Society T-Shirts Available

Get in the swing of things with a Lepidopterists' Society T-shirt! The shirts are high-quality 100% cotton: pre-shrunk, generous length, proudly displaying your Society's distinctive dogo on the front (logo diameter 7": did you know that the stylized initials of the Society ("LS") form the butterfly design on our logo?).

The shirt is available in four adult sizes, in your choice of two colors: Navy Blue with white logo and Papilio Yellow with black logo.

The prices are: \$10.00 U.S. each. Add postage: 1 - 3 shirts: Just \$3.50 in U.S. (\$5.50 to Canada); postage for each additional shirt: \$2 (U.S. or Canada). Contact the Assistant Secretary, Julian Donahue at the address printed on the back page of the NEWS.

Entomology Field Seminars - Maine Coast

Opportunities for advanced field studies with leading national and regional authorities will be offered at Eagle Hill Wildlife Research Station "downeast" of Bar Harbor and the Schoodic Point section of Acadia National Park. Seminar topics range from field entomology, field ethnobotany, field ornithology, wetland vegetation patterns, peatland ecology, midges, mosquitos of Maine, and more.

Eagle Hill overlooks one of the most beautiful areas on the eastern seaboard, the rocky evergreen coast of Maine from Acadia National Park to Petit Manan National Wildlife Refuge and beyond. Eagle Hill Wildlife Research Station is an independent nonprofit organization that is committed to research and quality educational programs in natural history. Visitors to the station appreciate the personal atmosphere, the dedication of the instructors, the comfortable facilities but perhaps, above all the opportunity for intellectual companionship in a setting as beautiful as it is challenging.

Eagle Hill Wildlife Research Station is known for exceptional advanced study opportunities for an advanced and professional adult audience and for well-qualified university and college students. The one-week seminars run from May 17 through September 20. Graduate and undergraduate university credits and teacher recertification credits are available. Scholarships for the station's very intensive one-week seminars are available.

Costs/Seminar: Seminar fee: \$195. Graduate, undergraduate and teacher recertification credits: optional, inquire about details. Meals: station residents \$160, commuters \$40 (lunches and Sunday dinner). Accommodation choice: ranges from tent site at \$20, to cabins and dorms at \$65, \$85, \$110, \$160.

For more information, please write to Eagle Hill Wildlife Research Station, Steuben, Maine 14680 or call (207) 546-2821.

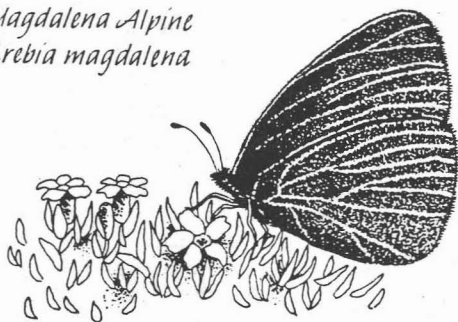
Southern Lepidopterists' Society

The Southern Lepidopterists' Society is open to anyone with an interest in the lepidoptera of the **southeastern United States**. A quarterly newsletter (Southern Lepidopterists' News) is published and regular meetings are held at various locations throughout the region. For information regarding the Society contact: Tom Neal, Secretary-Treasurer, 1705 N.W. 23rd Street, Gainesville, FL 32605 USA.

Lost Member

Society mail for R. R. CROMWELL in Austin, Texas, has been returned. Please advise Julian Donahue (address on back of NEWS) if you know a current address.

Magdalena Alpine
Erebia magdalena



COLORADO BUTTERFLY WORKSHOP FOR SUMMER 1992

Cloud Ridge Naturalists is pleased to announce an exciting workshop on the biology of butterflies to be held in western Colorado in July 1992. *Of Checkerspots and Fritillaries: Butterfly Ecology and Behavior* will be taught July 23-26 by Boyce A. Drummond and Robert Michael Pyle. This field seminar --- conducted in the Kebler Pass-Crested Butte area --- will concentrate on the identification, biology, ecology, courtship behavior, and hostplant relationships of the Rocky Mountain butterfly fauna. Participants will study the life histories of butterflies, comparing and contrasting the strategies of various species along an altitudinal transect from montane meadows to alpine tundra. Observation and photographic techniques will be emphasized; the instructors will practice catch-and-release techniques so that all participants will be able to see and photograph the butterflies in hand as well as in undisturbed field situations. Talus slopes will be explored to find the all-black Magdalena alpine and other rockslide species; alpine meadows, willow carrs, Krummholz, subalpine forests, and aspen groves are other habitats where sulfurs, checkerspots, swallowtails, admirals, tortoiseshells, marbled wings, fritillaries, blues, and many others may be found. Don't miss this outstanding opportunity to explore some of the best of Colorado with two of North America's finest teachers and lepidopterists!

Instructors: Dr. Boyce A. Drummond, Ph.D. in Ecology from the University of Florida, is Director of Pikes Peak Research Station and former Editor of the *Journal of the Lepidopterists' Society*. His research emphasizes the dynamic interactions between plants and animals, especially butterflies, in the humid tropics and Colorado Rockies. Boyce has published widely on his research and is one of three authors of the book *Florissant Butterflies: A Guide to Fossil and Present-day Species of Central Colorado* (Stanford University Press). Dr. Robert Michael Pyle, Ph.D. in Ecology and Environmental Studies from Yale University, is the author of more than 200 articles, essays, books, and reports on butterflies, environmental affairs, wildlife conservation, and natural history topics. His books include *The Audubon Society Field Guide to North American Butterflies*, *The Audubon Society Handbook for Butterfly Watchers*, and *Wintergreen: Rambles in a Ravaged Land*, winner of the 1987 John Burroughs Medal. Both Boyce and Bob are experienced and enthusiastic field instructors, excited about teaching together for the first time, and dedicated to presenting an outstanding program.

About Cloud Ridge: Cloud Ridge Naturalists is in its thirteenth year of offering the finest in natural history education featuring outstanding field seminars. Cloud Ridge is a non-profit educational organization

founded and directed by Audrey Benedict, author of the recently published *A Sierra Club Naturalist's Guide to the Southern Rockies*. Audrey's warm hospitality and extensive knowledge of Rocky Mountain natural history grace every Cloud Ridge outing.

Registration: Workshop is limited to 20 participants. Price is \$325 (\$50 deposit) and includes all instruction and instructional materials, 3 nights' lodging at Irwin Lodge (near Kebler Pass), and all breakfasts and dinners while at the lodge. Does not include transportation or meals other than those listed. Workshop begins with dinner on July 23 and concludes at 4 PM on July 26. For more information and registration forms contact: Audrey D. Benedict, Cloud Ridge Naturalists, 8297 Overland Road, Ward, Colorado 80481; (303) 459-3248 or 443-8204.

CARIBBEAN WILDLIFE SURVEYS

Caribbean Wildlife Surveys provides personnel to conduct wildlife projects in the Caribbean. Current projects in Jamaica include a study of the biodiversity in five of the last remaining areas of montane rainforest and providing assistance for conservation projects of resident biologists and local organizations.

Caribbean Wildlife Surveys has agreed to assist the Jamaica Tourist Board by identifying and marking items of scientific and scenic interest along trails in the proposed Blue Mountain National Park.

Dr. Peter Vogel of the University of the West Indies will receive assistance from Caribbean Wildlife Surveys in documenting the need to conserve portions of the dry limestone habitat in the Hellshire Hills where the Jamaican Iguana was recently rediscovered.

Assistance will be given to the Caribbean Data Center-Jamaica to determine the present boundaries of the breeding area of the endemic blue swallowtail, *Eurytides marcellinus*. This will be the main focus of the May 25th-June 4th survey as this insect is only abundant for about two weeks at this time of year. The only known breeding site, discovered by Tom Turner in 1965, has been destroyed. The insect now struggles to survive in adjacent marginal areas which are also being cleared. Funds are desperately needed to assist with the purchase of a small acreage for habitat conservation. The June 29th - July 9th survey follows immediately after the Michigan Annual Meeting and will include visits to the Blue Mountains, Hellshire Hills and montane rainforest sites.

In the rainforest habitats, the first comprehensive moth collecting is being conducted, including a search for 'lost' species such as the moths *Urania sloanus* and *Perigonia jamaicensis*; butterflies such as *Damaus cleophile* and *Grais stigmaticus*, as well as gathering additional data on the distribution of the endangered and protected giant swallowtail, *Papilio homerus*.

The survey includes a study of all plant and animal life, but targets certain groups for more intensive study. Photography by professionals and amateurs is particularly encouraged, to assist with the production of inexpensive field guides.

Caribbean Wildlife Surveys is funded entirely by contributions from participants and provides for all accommodations, transportation and field assistants after your arrival in Jamaica. Willingness to camp out is desirable but not essential.

Each survey is organized by Tom Turner, who has lived in Jamaica and has studied that islands' wildlife for over thirty years. Dr. Turner maintains strong ties with the University of the West Indies, the Hope Zoological Gardens and the Natural History Division of the Institute of Jamaica. He is the recipient of a Centenary Medal from the Institute for contributions towards conservation of Jamaica's wildlife.

Participation is sought from scientific institutions as well as private individuals; teams of 12-16 persons are required monthly. Dates for the next survey are: 27 July - 6 August 1992. Application deadline: 31 May 1992. Trips will be available monthly. Call in advance for dates after August. Costs, excluding airfares, are \$1,650.00 per person per survey. For details contact Dr. Tom Turner, 2321 State Road 580, Suite 6, Clearwater, Florida 34623. Phone (813) 797-0466.

Passiflora Society

Passiflora plants are native to the Tropics, subtropics and extreme southern edge of the U.S. Passifloras are beautiful, edible, and pharmaceutical, and the exclusive host plant for the entire family of Heliconiidae. Charter membership is available in a new International Passiflora Society, recently formed by Butterfly World. Dues are \$15 for U.S. and \$20 non-U.S. Payment accepted in U.S. currency only. For further information and membership application write: International Passiflora Society, % Butterfly World, 3600 W. Sample Road, Coconut Creek, FL 33073.



Ask The Expert

Baffled by a new term? Curious about why so-called "stable" scientific names keep changing? Seeking an explanation for a puzzling behavior? Send your questions to the NEWS Editor; she will attempt to get answers to the questions judged to be of wide general interest and publish the responses here.

The first question comes from Richard Priestaf who asks: "A recent National Geographic special on the Hawaiian Islands documented moth larvae catching and eating flies (Diptera), rather than eating plants like most "normal" lep larvae. What moth species are involved in this behavior, and what do the early instar larvae feed on? Where does the female moth lay her eggs--is it random or is there some oviposition preference?"

Julian Donahue, curator at the Los Angeles County Museum of Natural History, replies: "In order to get the latest information on the subject I went to a higher authority: Dr. Steven L. Montgomery who, with William P. Mull, has been studying and photographing this unique phenomenon for over a decade. I thank Dr. Montgomery for providing the information used to formulate this reply."

"There are now 18 species of known carnivorous caterpillars in Hawaii, all in the geometrid moth genus Eupithecia, a genus that contains over 1,000 species worldwide. Each of the six major Hawaiian islands has at least one carnivorous species; one of them E. orchloris (the "Green Grappler Carnivorous Caterpillar"), occurs on all six, while the island of Maui has the most species (12). Hawaii also has "normal" phytophagous species of Eupithecia, the principal one being E. monticolens, which also occurs on all six main islands."

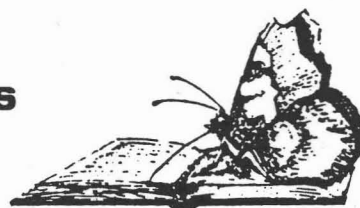
"The carnivorous Hawaiian Eupithecia larvae are unique in the world, as far as known, in being ambush predators that catch active prey with specially evolved long thoracic legs and claws (all other predaceous larvae, mostly in the butterfly family Lycaenidae, eat

sessile or sedentary prey). The larvae perch, in typical stick-like geometrid fashion, on leaves and stems. When a prey insect touches the posterior end of the larva, the larva bends the anterior part of the body back in a rapid strike, seizing the prey with its elongated, spiny thoracic legs. Early instar larvae have the same structures and behaviors, but prey on smaller insects (midges, psocids, and springtails)."

"The female moth lays eggs on the general perch type for that species (E. phodopyra larvae are only on ferns, but never consume foliage, while E. dryinombra larvae occur in leaf litter and feed on passing ground insects)."

"More detailed information may be found in Dr. Montgomery's three papers, in *Entomologia Generalis* 8(1): 27-34 (1982); *GeoJournal* 7.6: 549-556 (1983); and *National Geographic* 164: 219-225 (Aug. 1983). A full color poster, "Hawaii's Amazing Mini Predators", featuring a giant enlargement of a Green Grappler feeding on a Drosophila fly, is available for \$3.00 U.S. from Conservation Council for Hawaii, P.O. Box 2923, Honolulu, HI 96802. Dr. Montgomery may also be reached at that address, or at the Bishop Museum, P.O. Box 19000A, Honolulu, HI 96817-0916; he welcomes information on any other examples of Lepidoptera larvae using ambush predation to capture active prey."

Books



RECENTLY PUBLISHED BOOKS

Ajilvsge, Geyata. 1991. *Butterfly Gardening for the South*. Taylor Publishing Company, 1550 West Mockingbird Lane, Dallas, Texas 75235. Hardcover: 348 pp., 200+ color figures. (\$34.95).

Bernays, E. A. 1991. *Insect-Plant Interactions, Vol. III*. CRC Press, 2000 Corporate Blvd., N.W., Boca Raton, Florida 33431. Hard cover: 200 pp. (\$99.50).

Common, I. F. B. 1990. *Moths of Australia*. E.J. Brill, Leiden, The Netherlands. Hard cover: 535 pp., 32 color plates. (3000 Dutch Guilders; about \$150 U.S.) [Available from the Australian National Collection Book Shop, % Mr. Ray McInnes, CSIRO, Division of Entomology, GPO Box 1700, Canberra, A.C.T., Australia 2601 at a 25% discount = \$112.50 Australian plus postage.]

Craighton, LuAnn (ed.). 1991. *Discover Butterflies! An Activity Book for Families, Students, and Teachers*. Calloway Gardens, P.O. Box 2000, Pine Mountain, Georgia 31822. Soft cover: iv + 61 pp. (accompanied by 15 minute color videotape). (\$7.95 book, \$19.99 video, \$24.95 both, plus \$3.50 P & H).

D'Abrera, Bernard. 1992. *Butterflies of the Holarctic Region, Volume 5, part 2, Satyridae (conclusion) & Nymphalidae (partim)*. Hill House, Victoria, Australia. Hard cover: ca. 200 pages, many color plates. (\$240.00)

Emmel, Thomas C. 1991. *Butterflies*. Mallard Press, 666 Fifth Avenue, New York, New York 10103. Hard cover: 143 pp., many color photographs. (price unknown).

Emmet, A. Maitland. 1991. *The Scientific Names of the British Lepidoptera: Their History and Meaning*. Harley Books, Colchester, Essex CO6 4AH, England. Soft cover: 288 pp. (£24.95).

Emmet, A. Maitland & John Heath (eds.). 1991. *The Moths and Butterflies of Great Britain & Ireland, Volume 7, Part 2.* (Lasiocampidae - Thyatiridae, with Life History Chart of the British Lepidoptera). Harley Books, Colchester, Essex CO6 4AH, England. Hard cover: 400 pp., 4 color plates. (£55).

Ferguson, D.C., D. J. Hilburn & B. Wright. 1991. *The Lepidoptera of Bermuda: Their Food Plants, Biogeography, and Means of Dispersal.* Memoirs of the Entomological Society of Canada, No. 158. Soft cover: 105 pp., 1 color plate. Available from the Entomological Society of Canada, 393 Winston Avenue, Ottawa, Ontario, Canada K2A 1Y8. (Canadian funds: members \$12, non-members \$15; U.S. funds: members \$10.75, non-members \$13.50).

Johansson, R., E. S. Nielsen, E. J. van Nieuwerkerken & B. Gustafsson. 1990. *The Nepticulidae and Opsotegidae (Lepidoptera) of North West Europe.* In *Fauna Entomologica Scandinavica* Vol. 23, Parts 1 & 2. E. J. Brill, Leiden, The Netherlands. (In English). Hard cover: Part 1 (pages 1-413) and Part 2 (pages 414-739), 118 color figures. (55 Dutch Guilders)

Kielland, Jan. 1990. *Butterflies of Tanzania.* Hill House, Melbourne. Hard cover: 363 pp., 68 color plates. (\$120).

Larsen, Torben B. 1991. *The Butterflies of Kenya and Their Natural History.* Oxford University Press, Oxford, England. Hard cover: 490 pp., 64 color plates. (\$195.00).

Miller, J. Y. (ed.). 1991. *The Common Names of North American Butterflies.* Xerces Society and Smithsonian Institution Press, Washington, DC. Soft cover: 200 pp. (\$14.95). See description following.

Nagano, Christopher D. et al. 1991. *A Bibliography of the Monarch Butterfly [Danaus plexippus (L.): Lepidoptera: Nymphalidae].* Plastic comb binding: 44 pp. [Available from BioQuip, 17803 LaSalle Avenue, Gardena, CA 90248-3602] (\$7).

Nijhout, H. Frederick. 1991. *The Development and Evolution of Butterfly Wing Patterns.* Smithsonian Institution Press. 313 pp., 8 color plates. Hard cover (\$45.00) or Soft cover (\$20.00). See review below.

Price, Peter W., T. M. Lewinsohn, G. W. Fernandes, & W. W. Benson. 1991. *Plant-Animal Interactions: Evolutionary Ecology in Tropical and Temperate Regions.* Wiley-Interscience, New York. Hard cover: 639 pp. (\$125.00).

Seki, Y., Y. Takanami & K. Otsuka. 1991. *Butterflies of Borneo, Vol. 2, No. 1, Lycaenidae.* Hard cover: x + 114 pp., 70 color plates. and Vol. 2, No. 2, Hesperidae by Kiyoshi Maruyama. Hard cover: xiii + 83 pp., 48 color plates. Boxed together in slipcase. Tobishima Corp., Tokyo. (Available from TTS Books, 100-239 Onigasawa Uchigoumiya-machi, Iwaki-shi, Fukushima Pre., Japan 973). (Yen 17,500, postpaid).

Skou, Peder. 1991. *Nordens Ugler. Series Danmarks Dyreliv, bind 5.* Apollo Books, Kirkeby Sand 19, DK-5771, Stenstrup, Denmark. (in Danish) Hard cover: 565 pp., 37 color plates. (DKK 600 + postage).

Thomas, Jeremy & Richard Lewington. 1991. *The Butterflies of Britain and Ireland.* Dorling Kindersley and the National Trust, London. Hard cover: 224 pp., 2 color plates. (£16.99).

Toliver, Michael E. 1991. *Distribution of Butterflies in New Mexico (Lepidoptera: Hesperioidea and Papilionoidea).* Published by the author and Richard Holland (editor). Distributed by Richard Holland, 1625 Roma NE, Albuquerque, NM 87106. Spiral bound, soft cover: 232 pp. (\$10 postpaid). [also available on floppy disk].

Velez, J. & J. Salazar. 1991. *Mariposas de Colombia.* Villegas Editores, Bogota, Colombia. Hard cover: 167 pp. (price unknown).

Anyone with knowledge of publication of new titles of interest to lepidopterists, and especially of books published outside the United States, are requested to send full particulars to the Book Review Editor of the Journal, both for inclusion in this column and to allow for timely review in the Journal. Publishers are invited to send review copies directly to the Book Review Editor for consideration for review in the Journal. Members interested in reviewing books for the Journal or the NEWS should send their requests or interests to:

Boyce A. Drummond
Book Review Editor
Journal of the Lepidopterists' Society
Natural Perspectives
P.O. Box 9061
Woodland Park, CO 80866-9061

BOOK REVIEW

The Development and Evolution of Butterfly Wing Patterns, by H. Frederick Nijhout. Sept., 1991. Price: \$45 (Cloth) or \$20 (Paper). 297 pages. 8 color plates. Numerous blk/wht photographs. Smithsonian Institution Press, Dept. 900, Blue Ridge Summit, PA 17294, USA. Add \$2.25 for postage and handling.

Many Lepidopterists, including myself, have spent countless hours studying wing patterns of butterflies and moths to determine the species involved. But how many have wondered how these patterns are formed, and why they are (usually) such an accurate clue to the creatures' identity?

For those who are curious, this book has a wealth of information. The subject is incredibly complex, and the discussions do get quite technical. But the author's style starts with the general principles involved before getting into details, which allows the reader to understand the important part, and move on if things get too deep. The only thing lacking in this book is a glossary of terms: The author assumes you are familiar with cell biology, insect physiology and genetic terms. I am not, but using context, I was usually able to muddle through.

Since wing patterns are produced by colored scales, the first chapter describes the various kinds of scales, their arrangements, and color effects produced. Scale coloring is closely tied to wing venation and shape, and each is determined at the proper time of the development cycle.

The main part of the book concerns the "Nymphalid Ground Plan", a generalized theoretical pattern from whose elements most existing patterns can be traced. The key word of the book is "homology", the similarities between pattern elements of various species, which have a genetic basis. Illustrations and examples are liberally used to support the author's points.

The genetic basis of mimicry and polyphenism (many forms) are fully explored. This leads to a discussion of the role of patterns in evolution, or vice versa -- the two are inexorably intertwined. Again, these highly theoretical topics are explained with pictures of actual examples.

A short appendix gives a current view on high-level butterfly classification (Ackery, 1984) in which there are only four (4!) families

worldwide. This is followed by a lengthy treatment of the Nymphalidae by Donald Harvey, going to the subfamily, tribe and generic level. It is interesting to note that six families from the Miller/Brown catalog have been folded into Harvey's Nymphalidae, with further demotions down the line. There is a definite trend in taxonomy to reduce the number of higher level categories. Our next butterfly checklist will probably look quite different from the present one.

These are only a few of the many topics explored by this book. The only good way to grasp its full scope is to get a copy and start reading for yourself.

Ron Leuschner

NEW PUBLICATION (AT LAST!)

The Common Names of North American Butterflies, edited and compiled by Jaqueline Y. Miller. 30 April 1992. Price: \$14.95 (paper). 177 pages. Order from: Smithsonian Institution Press, Dept. 900, Blue Ridge Summit, PA 17294. Add \$2.25 for postage and handling for first book, and \$1.00 for each additional.

The "Common Names" project began in 1980 as a joint effort between the Xerces Society and the Lepidopterists' Society. Many people contributed over the years, and the final manuscript was prepared by Jacqueline Miller, with review assistance from Lee Miller and Paul Opler. Now, at last, it is available for everyone.

The book lists the scientific names of all North American butterfly species and subspecies as given in the Miller/Brown checklist, updated by Memoir #3 and a bit beyond. Opposite each are all the common names that have been applied, with the name most frequently associated appearing first in boldface type. Many of the other names are spelling variants, errors or less descriptive names. A shorthand code by the name indicates the source of that name (H for Holland, S. for Scott, etc.) from the extensive bibliography at the end. Some names have no common name. These are mostly neotropical strays or recently named subspecies.

This is an important book for Lepidopterists, since we now have a standardized, stable base of common names. The birders have done this years ago: their checklist with its common names is now in its sixth edition. This book won't replace Latin binomials for taxonomy, but will be an excellent reference document for anyone who prefers common English names for whatever reason.

One final note from the Publication Coordinator: DO NOT try to order this book from me. It is available ONLY from Smithsonian Press at the address above, or from your local book dealer.

Ron Leuschner, Publications Coordinator

NEW BUTTERFLY HOSTPLANT PUBLICATION

Announcing **PAPILIO (New Series) #6**: nearly 3,000 new records of butterfly and skipper hostplants (including 1,423 ovipositions) mostly from Colorado, with numerous new life histories and extensive notes on overwintering stage, oviposition habits, larval habits, etc. The host specificity of most Colorado butterflies is elucidated.

New phenomena revealed include: "Dracula" caterpillars (larvae of *Amblyscirtes*) with unique fangs as well as ordinary mandibles; eggs of *Nathalis iole* mimicking glands of its host; a true "hay-feeding guild" of 6 Hesperinae species; a skipper (*Ancyloxypha*) with larval wax glands on four segments instead of the usual two; a glue window protecting some hairstreak eggs; polyphagy of bog butterflies; fragile eggs of *Letha*; a skipper eating spring-annual grass; a Hesperinae

Oarisma garita with "satyr envy", converging to Satyrinae in its polyphagy, unique lack of larval nest, and cryptic striped larval pattern. The highly host-specific Hesperinae are contrasted with rather polyphagous Satyrinae. *Celastrina argiolus* is divided into two species with different hostplants, flight times, habitats, and pupal color.

The publication also presents other findings: the convergence of *Hesperia ottoe* and *Polites origenes* in larval biology; 10 genera have underground larvae; three *Polites* lay eggs without glue which drop into the litter; *Cercyonis* often drops eggs; hostplant switching in *Euphydryas*; *Atrytone logan* is a very distinct genus from *Atrytone argos*. Two new subspecies are named from lowland W. Colorado - E. Utah. *Papilio* (new series) #6, 195 p., \$10 postpaid in U.S. (\$17 for complete series #1-6), Contact James Scott, 60 Estes Street, Lakewood, CO 80226.

NEW MAGAZINE

International Entomologic Advertising Magazine has been in publication since September 1991. It is issued on a monthly basis in a DIN A5 size. Please write for information to Jürgen Krüger, Danziger Str. 14, D-4020 Mettmann, Germany.

MEMOIRS -- Anyone? (and missing Memoirs?)

Thanks to all who ordered various Memoirs along with their 1992 dues payment. We are sorry that it took a long time, in some cases, to fill these orders. We are going to streamline operations for next year and try to do better. Meanwhile, more Memoirs are available and can be ordered from the Publications Coordinator, including paper-cover Memoir #2 for \$7 (vs. cloth at \$12) plus \$2 postage.

There are two people who ordered and paid for a Memoir #4 but did not get it since there was no name on the order form. If that was you, please send me a sample of your handwriting (Write: "7.20") and tell me when you made payment, and I'll send the book right away.

Ron Leuschner, Publications Coordinator
1900 John St., Manh. Beach, CA 90266

Magazine

The May/June 1992 **Nature Conservancy Magazine** contains an eight-page article about butterfly conservation. Full color photographs of butterflies compliment the article as well as the cover of the magazine. Copies may be obtained by sending a written request accompanied by a 9" x 12" envelope with \$1.25 US postage to Paige Blankenship, Donor Support, the Nature Conservancy, 1815 N. Lynn Street, Arlington, VA 22209.

Research Notices



SILKMOTH REARING AND RESEARCH PROGRAM: I need pupae or ova of *Hyalophora gloveri* and *H. euryalus* for my 1992 rearing and research program. Contact: Ralph M. Clark, Department of Biological Sciences, State University of New York, Plattsburgh, NY 12901.

Forthcoming Meetings

TROPICAL BUTTERFLY RESEARCH. Graduate Research Assistantships available. MS Biology of Tropical Butterflies. To study the biology, evolution and conservation needs of a group of neotropical butterflies that aggregate in high elevation roosts during the dry season. Successful candidate will be expected to develop rearing protocols for 1-4 species of *Anetia* (Danainae), study characteristics of *A. briarea* and others at aggregation sites, run insect traps and collect specimens. The position will require greenhouse and rearing activities, foreign travel (Caribbean), backpacking and camping on mountain peaks under primitive conditions, working with horses and mules, extended periods without supervision or English-speaking companions. Ability to speak or learn Spanish is critical. Under field conditions, privacy, sanitation facilities and food variety cannot be expected. **Requirements:** Acceptance by the MSU College of Graduate Studies for the Masters of Science in Entomology. A bachelor's degree in an appropriate field with a GPA of 3.0 or better, GRE scores of 1100 or better, and if not a native English speaker, TOEFL scores of 525 or better. **Stipend:** \$10,000/year (12 month), + \$2,000 out-of-state allowance first year. Limited to 2 years of support. **Start Date:** 01 June 1992. **To Apply:** Contact Dr. Michael A. Ivie, Entomology Research Lab, Montana State University, Bozeman, MT 59717-0002. (406) 994-4610.

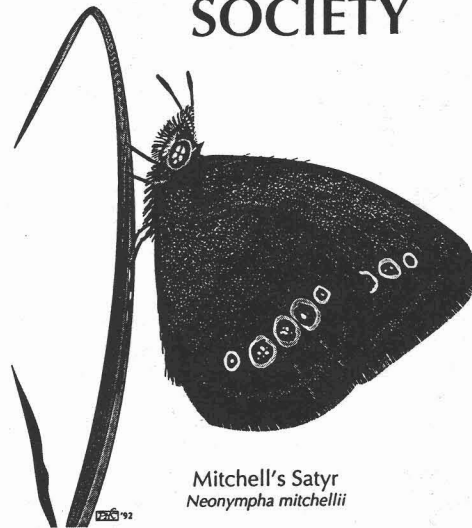
REVISION OF *Thessalia theona*. Wanted for revision of the *Thessalia theona* group with M.J. Smith: information of location or possible location of the types of the following names: *Melitaea theona* Ménériés (possibly in Leningrad), *Melitaea chinatiensis* E. R. Tinkham, and *Phyciodes hondana* Weymer. Contact: George T. Austin, Nevada State Museum and Historical Society, 700 Twin Lakes Drive, Las Vegas, Nevada 89158.

Lycaenid Studies. I should like to obtain North American Lycaenid material for my studies. I also need reprints, and most especially a book that illustrates the genitalic structures of the North American Plebejinae. I can offer Palaearctic, mainly Central European, East European Phopalocera for exchange. Please contact ZSolt Bálint, Lepidoptera Collection, Zoological Department, Hungarian Natural History Museum, H - 1088 Budapest, Baross u. 13.

Papilio RESEARCH: I am studying the influence of plant chemistry on host shifts by members of the *Papilio machaon* group. I would like to obtain live pupae of *Papilio machaon oregonius*, *Papilio machaon aliaska*, and *Papilio polyxenes*. Please write to Kim Woodbury, Ecology and Systematics, Corson Hall, Cornell University, Ithaca, NY 14853.

RESEARCH ON THE CHEMICAL ECOLOGY OF THE CATALPA SPHINX: As part of a larger study on caterpillar chemical defense, I would like to continue my research on larvae of the Catalpa Sphinx (*Ceratonia catalpae*, Sphingidae). I would like to obtain egg masses of this species for research this summer. I will reimburse postage. If you have questions, please call or write. Thank you. Contact Deane Bowers, Department of E.P.O. Biology, Campus Box 334, University of Colorado, Boulder, CO 80309. phone: (303) 492-5530 (you can leave a message).

The LEPIDOPTERISTS' SOCIETY



Mitchell's Satyr
Neonympha mitchellii

43rd Annual Meeting

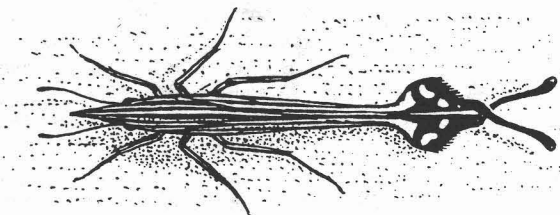
EAST LANSING, MICHIGAN

Lepidopterists' Society - 43rd Annual Meeting will be held Thursday through Sunday, 25-28 June 1992 at Michigan State University in East Lansing, Michigan. It is being hosted by the Department of Entomology, Michigan State University and the Michigan Entomological Society. The annual meeting of the Michigan Entomological Society will be held in conjunction with it on Thursday, 25 June. The preregistration form and additional information is in NEWS #1, 1992. The only change that has been made is that breakfast and lunch will not be required if you stay in the dorm.

As in the past, there will be no general mailing of registration forms or a call for papers. If you are interested in attending the meeting, please fill out and return the preregistration form IMMEDIATELY. Your packet will then be mailed to you. For more information contact Fred Stehr (517) 353-8739 or Mo Nielsen (517) 355-1803, Department of Entomology, Michigan State University, E. Lansing, MI 48824-1115.

The logo (above) was provided, courtesy of the Annual Meeting Committee. The full color illustration of *Neonympha mitchellii* was created by Peter Carrington, staff artist for the Department of Entomology at Michigan State University. *Neonympha mitchellii* is now included on state and federal endangered species lists. The species is found in alkaline fen (tamarack/poison sumac swamp) habitat and is restricted to southwestern Michigan, though it may still occur in two small populations in northern Indiana and one disjunct population in New Jersey. T-shirts with the full color logo will be available at the meeting.

6th Annual Insect Fair will be held 16-17 May 1992 at the Los Angeles State & County Arboretum, 301 N. Baldwin Ave., Arcadia, CA 91006. Sales, displays, exhibits, information on insects. Entrance to fair is free with paid Arboretum admission. Admission: \$3/adults, \$1.50/students & seniors, 75¢/children 5-12. For more information contact the Arboretum at the above address or phone (818) 821-3222 or Dr. Arthur V. Evans (213) 744-3558.



The Conservation of Invertebrates of New England symposium will be held Saturday, 16 May, 1992, 8:45am to 5:00pm in Room 519 of the Hogan Center at College of the Holy Cross. The symposium's theme is the interaction of science and applied conservation and will include a broad variety of talks that address topics ranging from natural history through contributions of systematics to legal implications of invertebrate protection. A symposium volume composed of abstracts from the invited talks will be published. Talks will be interspersed with brief open forums for roundtable discussion. Contact: Phil Robakiewicz, Massachusetts Audubon Society, South Great road, Lincoln, Massachusetts 01773, phone: (617) 259-9500.

Insect Diversity & Natural History in the Sierra Nevada, a five-week intensive field course will be held 21 June through 26 July 1992 at Sagehen Creek Field Station. This is Entomology 109, a credit course through the University of California at Davis. Learn insect collecting techniques, identification, curation, and gain familiarity with 300 families of insects in habitats as diverse as Great Basin desert and alpine meadows. Fees: No tuition fee for UC students currently registered for spring quarter or semester. Others should inquire. Food and accommodation: approximately \$450. Equipment: \$120. Inquiries may be directed to Dr. Philip Ward, Entomology Department, University of California, Davis, CA 95616-8584. Phone: (916) 752-0486, or leave message at (916) 752-1475.

Xerces Society - 19th Annual Meeting in conjunction with **The Sixth Annual Meeting of the Society of Conservation Biology** will be held 27 June - 1 July 1992 at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. Registration cost: US \$75/person and US \$35/student if received at the Xerces Society office by or on 1 May 1992; \$20 additional per person if received after 1 May 1992, does not include transportation, meals or lodging. Preliminary agenda: business meeting, invertebrate conservation symposium, presentation of papers/posters, social and barbeque, wine and cheese reception, field trips. For more information write the Xerces Society, 10 SW Ash Street, Portland, OR 97204. More information regarding the meeting of the Society of Conservation Biology can be obtained from: Dr. Gerald Cross, Department of Fisheries and Wildlife, VPI & SU, Blacksburg, VA 24061-0321. Or call (703) 231-8844.

International Symposium on "Biodiversity in Managed Landscapes: Theory and Practice," to document case examples of theory & concepts applied at differing scales (from sites to continents) in planning, assessment, management, & monitoring, is scheduled for 13 - 17 July, 1992 at the Capitol Plaza Holiday Inn, Sacramento, CA. Contact: Dr. Robert C. Szaro, USDA Forest Service, Forest Environ. Research, P.O. Box 96090, Washington, DC 20090-6090. (202) 205-1524.

Management for Biotic Diversity Workshop will be held 13 - 17 July 1992, at Colorado State University, Fort Collins, CO. For more information contact: Dr. Luke George, Dept. Wildl., Humboldt State U., Arcata CA 95521. (707) 826-3430. or Dr. Richard L. Knight, Dept. Fish and Wildl. Biol., CO State U., Ft. Collins, CO 80523 (303) 491-6714.

1992 Pacific Slope Section Meeting of The Lepidopterists' Society will be held from Friday to Sunday 24-26 July 1992 in San Diego, California, at the Waring Road Howard Johnson near San Diego State University. Field trips are being planned, and the

collection of San Diego Natural History Museum will be available for your perusal. Western members of the society will be contacted. Others interested in attending should contact David Faulkner, Entomology Department, San Diego Natural History Museum, P.O. box 1390, San Diego, CA 92112, or phone (619) 232-3825 (ext. 223) for more information. If you are unable to reach Dave at the museum, try John or Poody Brown in the evenings at (619) 422-1846.

High Country Lepidopterists - 3rd Annual Meeting will be held at the Denver Museum of Natural History on Friday and Saturday, September 11-12, 1992. The meeting and the High Country Lepidopterists' Society are open to anyone interested in Lepidoptera. Those who attended one or both of the two previous meetings know that this get-together is an excellent opportunity to meet and interact socially and scientifically with other lepidopterists in this rich faunal region.

The meeting will be organized and hosted by Richard S. Peigler, Collections Manager of the Department of Zoology. Assisting Ric will be Boyce Drummond and Ray Stanford, the two entomological Research Associates of the Department. Boyce will organize and chair the session of scientific papers on Saturday. Ray will host the opening reception Friday evening at his home in Denver (near the Museum), and his large personal collection will be open for viewing and study. Registrants to the meeting will have free access to the Museum on Saturday, 9AM to 5PM. The banquet will be catered in the Museum Saturday evening and will feature an outstanding speaker, following by a drawing for door prizes.

Several special events will highlight the meeting. The group will honor the many accomplishments of Dr. F. Martin Brown, one of the nation's leading lepidopterists and well-known for his significant contributions to our knowledge of Rocky Mountain Lepidoptera. We hope that Brownie's health will permit him to attend the meeting. The collection at the Museum contains the John T. Mason historical collection (described in the Journal of the Lepidopterists' Society, Vol. 44, pp. 194-198, 1990). Also on display will be two art collections: butterfly paintings by William Howe and prints of moth paintings by Dr. John Cody (both artists live in neighboring Kansas). On public display in the Museum is an exhibit of Colorado butterflies that was installed in August 1990.

Many areas in the Front Range offer excellent collecting of fall species of butterflies and moths in early September, and, of course, there are many other interesting attractions in the region, including the turning of the aspens in the surrounding high country. For more information, registration materials, or other assistance, please contact: Richard S. Peigler, Department of Zoology, Denver Museum of Natural History, 2001 Colorado Boulevard, Denver, Colorado 80205-5798.

The 19th Annual Natural Areas Conference and the 14th Annual Meeting of the Natural Areas Association, Rediscovering America: Natural Areas in the 1990's, is scheduled for 27-30 October 1992 at Indiana University in Bloomington, Indiana. Please contact: Natural Areas Conference Registration, Div. of Nature Preserves, 402 W. Washington St., Room W267, Indianapolis, IN 46204. (317) 232-4052.

1992 Annual Meeting of the Entomological Collections Network will be hosted by USDA-ARS Systematic Entomology Lab and Maryland Center for Systematic Entomology in cooperation with the Entomological Society of America on 5 and 6 December 1992 at the USDA Beltsville Agricultural Research Center in Beltsville, Maryland. Planned sessions include: Materials Conservation in Entomological Collections; Biodiversity sampling methods; Data security and ownership; Demonstrations of collections- & systematics-related software. For early arrivals, a tour of the Beltsville Agricultural Research Center (BARC) is expected to be available the afternoon of 4

Planned sessions include: Materials Conservation in Entomological Collections; Biodiversity sampling methods; Data security and ownership; Demonstrations of collections- & systematics-related software. For early arrivals, a tour of the Beltsville Agricultural Research Center (BARC) is expected to be available the afternoon of 4 December. A block of rooms has been reserved at the College Park Holiday Inn, near BARC. The meeting will run Saturday morning through Sunday morning, allowing midday departure to Baltimore (25 miles away) for those attending the ESA meetings. For additional program information contact: Richard L. Brown, Dept of Entomology, Drawer EM, Mississippi State University, Mississippi State, MS 39762, USA. Phone (601) 325-2085; FAX (601) 325-8837.



Corrections

The editor apologizes for all misspellings and omissions in the previous issue. The following corrections apply to information that would be substantially different from that which appeared in the previous issue of the NEWS. The portion that was omitted or corrected is in *italics*.

Page 3, line 52 should read: normal haunts, creating higher than normal species counts; there were 97 species on the pre-(Lep Soc) meeting XERCES Count, Garden Cn, Cochise Co, 31 Jul (JPB).

Page 5, line 60 should read: 9 mi marker, both HUMBOLDT Co, 12 May (K.Hansen, SN). *Agriades rusticus podarce* common at 6000' on North Trinity Mtn, HUMBOLDT Co, 13 July, with ♀♀ ovipositing on *Dodecatheon jeffreyi* (Primulaceae) (K. Hansen, SN).

Page 14, line 8: *Enodia anthedon* not *portlandia*. *Portlandia* is strictly southern.

page 17, line 12: GRANT not GRANY

under Oklahoma: *Pushmataha*, not Pushtamaha

page 18, apologies to HC who became CH a couple of times in TX.



New Members

ACORN, JOHN H.: 15714 86 Avenue, Edmonton, Alberta T5R 4C4, CANADA.

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ALFARO VELAZQUEZ, JOSE A.: c/Rey Francisco 29, 4 C, 28008 Madrid, SPAIN.

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CHANSELME, JEAN-LUC: 11, Avenue des Enjouvenes, F-13330 Pelissanne, FRANCE [Address in Africa: P.O. Box 764, N'djamene, REPUBLIC OF CHAD.]

CHAVES, HUGO ARMANDO: Felix de Azara 174 - 7 F, Posadas, Misiones 3350, ARGENTINA.

COLLINS, RAYMOND: 4048 South 2nd, Milwaukee, WI 53207.

DALTON, BRUCE: Tropical Insects & Butterflies Suppliers, Calcutta Road #2, Post Office, Freeport, TRINIDAD, W.I.

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TAMMINEN, JOANNA: 72 East Main Street, Yarmouth, ME 04096.

TAYLOR, TERRY W.: Combined Scientific Supplies, P.O. Box 1446, Fort Davis, TX 79734-1446.

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YAP, KOK WAH: 9/65 Forsyth Street, Kingsford, NSW 2032, AUSTRALIA.

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TRIAL, LINDEN: Missouri Department of Conservation, 1110 South College Avenue, Columbia, MO 65201-5204.

The Market Place

Buy • Sell • Exchange • Wants



Items submitted for inclusion in this section are dealt with in the manner set forth on page 9 of the Jan/Feb 1992 NEWS. Please note that in keeping with the guidelines of the Society, henceforth no mention of any species on any threatened or endangered species list will be accepted in these items. This will include all Ornithopterans now and for the foreseeable future. Items will be accepted from members only and will be printed only once unless entry in the maximum of two successive issues is requested. Please keep items short. A maximum of 100 words is allowed. SASE in an addressed self addressed stamped envelope.

The Society, as always, expects all notices to be offered in good faith and takes no responsibility for the integrity of any advertiser. Any disputes arising from such notices must be resolved by the parties involved outside of the structure of the Society.

FOR SALE: light traps for use with 12-volt batteries or 120-volt AC, or both. Portable and light weight with 8, 15, or 22 watt bulbs. Beetle screen and flow-through rain drain. Excellent design and construction. For more information and pricing contact: Leroy C. Koehn, 2946 N.W. 91st Ave., Coral Springs, FL 33065 USA. (305) 344-3873.

WANTED: Used envelopes with butterfly stamps on them. Will purchase or exchange. Contact: Charles V. Covell, Jr., Department of Biology, University of Louisville, Louisville, KY 40292.

WANTED: Any livestock (ovae, pupae, cocoons) of Saturniid moths and butterflies, particularly Papilio, Heliconius, Morpho, Caligo, and Speyeria. Please send offers to: David Stewart, P.O. Box 1206, Laytonville, CA 95454 USA. Phone (707) 984-8829.

WANTED: Assistance requested in placing value on butterflies (still papered, identified, dated, located) collected by Porter of Decorah, Iowa in Ecuador, Peru, Brazil in 1919 through 1927. Excellent specimens. Computer printout of specimens available. Contact Barbara Nicholson, 889 Walker, Dubuque, IA 52001, (319) 556-5797.

FOR SALE: Dickson & Kroon (eds), *Pennington's Butterflies of Southern Africa* (1978) \$125; Van Son, *The Butterflies of Southern Africa*, 4 vols (1949-1979) \$500; Corbet & Pendlebury, *Butterflies of the Malay Peninsula* (3d ed 1978) \$85; Fleming, *Butterflies of West Malaysia & Singapore*, 2 vols (1975) \$75; Elliot, *New Information on the Butterflies of the Malay Peninsula* (1980) \$10; Morrell, *Common Malayan Butterflies* (1972 reprint) \$15; Holloway, *Moths of Borneo, with Special Reference to Mt. Kinabalu* (1976) \$30; Lewis, *Butterflies of the World* (1st ed 1973) \$30; Smart, *Illustrated Encyclopedia of the Butterfly World* (1st ed 1981) \$25; Watson & Whalley, *Dictionary of Butterflies and Moths in Color* (1975) \$35; d'Entrevs, Passari & Zunino, *Secret Life of Insects* (1976) \$25. Contact: John Wall, 19 Tisdale Road, Scarsdale, New York 10583.

FOR SALE: Ova of A. polyphemus, A. io, C. promethea, C. regalis, E. imperialis, H. cecropia, H. Gloveri, H. euryalis, S. cynthia, and S. pyri. Send SASE for price list to Mark Schmidt, 8780 Red Lion-Five Points Rd, Springboro, OH 45066.

FOR SALE or EXCHANGE: Catocala ova: C. cerogama, cara, amatrix, vidua, neogama, habilis, angusi, obscura, flebilis, and C. coccinata. Available thru mid-April. SASE to Darryl Willis, 145 Westfield Drive, Holliston, MA 01746

FOR SALE: Butterflies of the South and East. Livestock of many Papilio, Nymphalidae and Pieridae available in season. Send SASE to Micky Furr, 7925 Cross Pike, Germantown, TN 38138,

WANTED: Lepidoptera from the arctic, especially from the far north such as the Yukon. John Holoyda, 5407 N. Oketo Ave., Chicago, IL 60656 USA.

FOR SALE: Two volumes in separates unbound of *The Butterflies of North America* by Wm. H. Edwards, publication beginning in 1868 and with beautiful plates. Price including shipping \$210. Ralph W. Macy, 5611 SW 45th Avenue, Portland, OR 97221.

FOR SALE: Choice butterflies, moths, and beetles from the West Coast of South America (Peru, Ecuador, Chile, Argentina). List sent free on request. Ormond McGill, P.O. Box 1103, Palo Alto, CA 94302.

FOR SALE: Deadstock pupae of Manduca sexta and H. convolvuli - very small amount. Randy Robinette, 4528 Hatfield St., Ashland, KY 41102.

FOR SALE: 1992 Saturniid ovae. H. cecropia, A. polyphemus, A. pernyi, A. luna, C. angulifera, E. imperialis and others. Send SASE to Jeff Frey, 364 Oaklyn Rd., Lebanon, PA 17042. Phone: (717) 272-6597. ALSO FOR SALE: Rearing sleeves. Contact Jeff Frey at above address.

WANTED: Papilio glaucus, P. canadensis, P. turnus, P. rutulus, P. eurymedon, P. multicaudatus, and P. pilumnus from all areas of USA. Purchase or exchange for USA or exotic tropical material. David W. Bouton, Box 158, Davenport, NY 13750.

FOR SALE or EXCHANGE: Morpho diana augustini, Papilio amyntor, Papilio woodfordi laarchus, and more. David W. Bouton, Box 158, Davenport, NY 13750, USA.

WANTED: Contact with person(s) who can supply me with livestock (ova, cocoons) of Arizona and Mexican Saturniidae. Contact Lenny Hicks, Rt. 3, Box 758, Banner Elk, NC 28604.

WANTED: African Cetonidae Beetles, willing to exchange or purchase. A1 quality essential as well as full collecting data. Contact I.R. Willem, PO Box 1625, Margate 4275, South Africa.

WANTED TO BUY: *The Lepidopterists' NEWS*, Volumes 6-12 (1952-1958), all issues. Boyce A. Drummond, Natural Perspectives, P.O. Box 9061, Woodland Park, CO 80866-9061.



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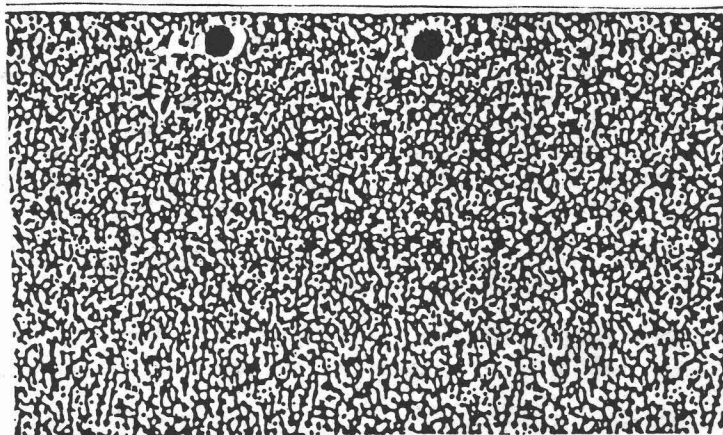
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Just For Fun

"Seeing" is not easy! To see the objects; diverge your eyes as if looking at a faraway object. The two dots will fuse, forming a third central dot. When the divergence is correct, slight controlled variations in the placement of the random dots are perceived by the brain as depth cues. Shapes will appear to float above a textured background. Some see the image in seconds. Others find it more difficult. If you can't see it, let someone else try. If they succeed, perhaps they can help you.



I'm not sure of the species. It may be undescribed.

submitted by James H. Norwood

From: The Lepidopterists' Society
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1726

DEADLINES: Material for the Jan/Feb issue should reach the NEWS EDITOR by **1 Dec** of the previous year, and that for the Mar/Apr Issue by **15 Feb**, for the May/June issue by **15 Apr** and for the July/Aug issue by **1 June**, the Sept/Oct issue by **15 Aug** and the Nov/Dec issue by **15 Oct**. Reports for the Season Summary must reach the Zone Coordinators listed on the front cover no later than **5 January**. NEWS EDITOR is **Stephanie McKown**, 650 Cotterell Drive, Boise, Idaho 83709, USA. Phone (208) 323-9547. NEWS FROM EUROPE EDITOR is **W.O. De Prins**, Diksmuidelaan 176, B-2600 Antwerpen, Belgium. Phone 03/322.02.35 (from USA use 011/32.3.322.02.35).

INFORMATION ABOUT THE SOCIETY.....

Membership in the Lepidopterists' Society is open to all persons interested in any aspect of Lepidopterology. Prospective members should send the TREASURER, Fay H. Karpuleon, 1521 Blanchard, Mishawaka, Indiana 46544, USA, phone (219) 258-4893, the full dues for the current year, \$25.00 US, together with mailing address and a note about areas of interest in Lepidoptera; student membership (must be certified) \$15; sustaining membership \$35; life membership \$500. Remittances must be in US dollars, payable to the Lepidopterists' Society. All members will receive the JOURNAL (published quarterly) and the NEWS (published bimonthly). A biennial membership directory will comprise the last issue of the NEWS in even-numbered years.

Changes of address (permanent ones only), Additions or Changes in Telephone Numbers or Areas of Interest and Information about Mailing List Rental: Contact the ASSISTANT SECRETARY, Julian P. Donahue, Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California 90007-4057, USA.

Information on Membership and other aspects of the Society must be obtained from the SECRETARY, Dr. William D. Winter, Jr., 257 Common Street, Dedham, Massachusetts 023026-4020, USA. Home phone (617) 326-2634.

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Manuscripts submitted for publication in the JOURNAL are to be sent to Dr. John W. Brown, EDITOR, JOURNAL of the Lepidopterists' Society, San Diego Natural History Museum, P.O. Box 1390, San Diego, California 92112, USA. Work phone (619) 942-5147, home phone (619) 422-1846. See the inside back cover of a recent issue of the JOURNAL for editorial policies.

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SUPPLEMENT TO THE CATALOGUE/CHECKLIST OF THE BUTTERFLIES OF AMERICA NORTH OF MEXICO (Memoir #3), Clifford D. Ferris, editor. General notes, plus corrections and additions to the original Memoir #2. Members and subscribers: \$6; non-members \$10.

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COMMEMORATIVE VOLUME, 1947-1972: A 25-year review of the Society's organization, personnel, and activities; biographical sketches; JOURNAL 25-year cumulative index by author, subject, and taxon; clothbound. Members and subscribers, \$8; non-members, \$12.

1990 MEMBERSHIP DIRECTORY (current to October 1990). Biennial directory of members and their addresses, with geographic and interest indices. Not available for commercial use. (NEWS #6 for 1990). \$5.00.

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