



NEWS

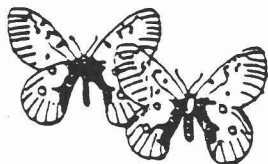
of the LEPIDOPTERISTS' SOCIETY

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BUTTERFLY DIVERSITY AND CONSERVATION IN THE RONDONIAN RAIN FOREST OF BRAZIL: A PROGRESS REPORT ON THE NEW RESERVE

The state of Rondonia in west central Brazil apparently has the highest butterfly diversity per square kilometer in the world, with an estimated 1,500 to 1,600 species residing within several square kilometers in the central part of that state near Ariquemes. After a major March 1989 expedition to the Rondonian rain forest around the Fazenda Rancho Grande involving more than two dozen members of the Lepidopterists' Society, it was clear that this incredible diversity — first noted two years earlier in March 1987 — was about to disappear under the hand of man, through cutting and burning of the tropical rain forest to create temporary crop land and nutrient-poor pasture. Most of us despaired of seeing any rain forest surviving this onslaught (see T. C. Emmel, *News of the Lepidopterists' Society*, 1989[4]: 53-55).

A NEW RONDONIA RAIN FOREST RESERVE STARTS IN BRAZIL BECAUSE OF LEPIDOPTERISTS

During a November 1989 expedition to the same area, again with 26 lepidopterists and other entomologists, a Florida high-school student and lepidopterist, Leslie L. Groce, became so inspired by the apparent need to do something to save this rain forest before it disappeared that he told the group he was going to raise money via his high school student conservation club to contribute towards the purchase of land here. This positive thought stimulated other members of the group to start intensive discussion about the options that might exist to save this area, and an informal planning group, particularly B. G. Falk, T. C. Emmel, and L. L. Groce, continued intensive discussions and exchange of ideas with Harald Schmitz (the Brazilian owner of Fazenda Rancho Grande), upon their return to the United States that winter.

The readers of the *News of the Lepidopterists' Society* will be interested to learn that the outcome of the last twelve months of work has culminated (in December 1990) with the collection of more than \$14,000 in small to medium-sized contributions towards the purchase of a new rain forest preserve in Rondonia, and the first tract of land was to be purchased in January 1991 for this purpose. We expect to be able to purchase relatively large areas because the price of some of these uncut rain forest tracts is as low as \$4 per acre during the current economic situation in Brazil.

While the state of Rondonia occupies some 93,840 square miles (243,044 square kilometers) in the southwestern part of the Amazon Basin of South America, more than 21% of the original rain forest has already been cleared — mostly in the last several years! The initial discovery of the incredible biological diversity in this area has been further documented in a recent publication by T. C. Emmel and G. T. Austin (1990, "The Tropical Rain Forest Butterfly Fauna of Rondonia, Brazil: Species Diversity and Conservation," published in *Tropical Lepidoptera*, 1(1): 1-12), with a list of over 840 species identified as of October 1990. A subsequent expedition with

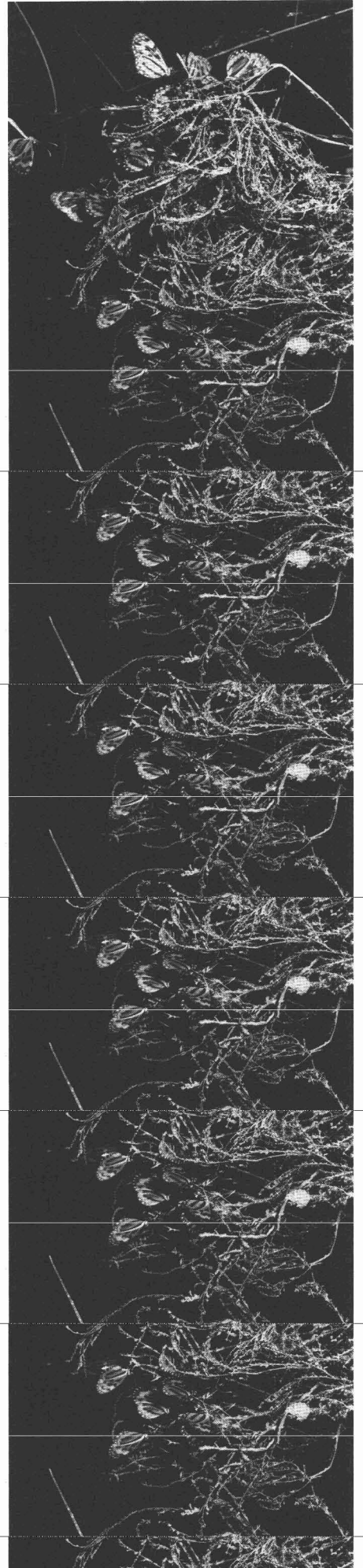
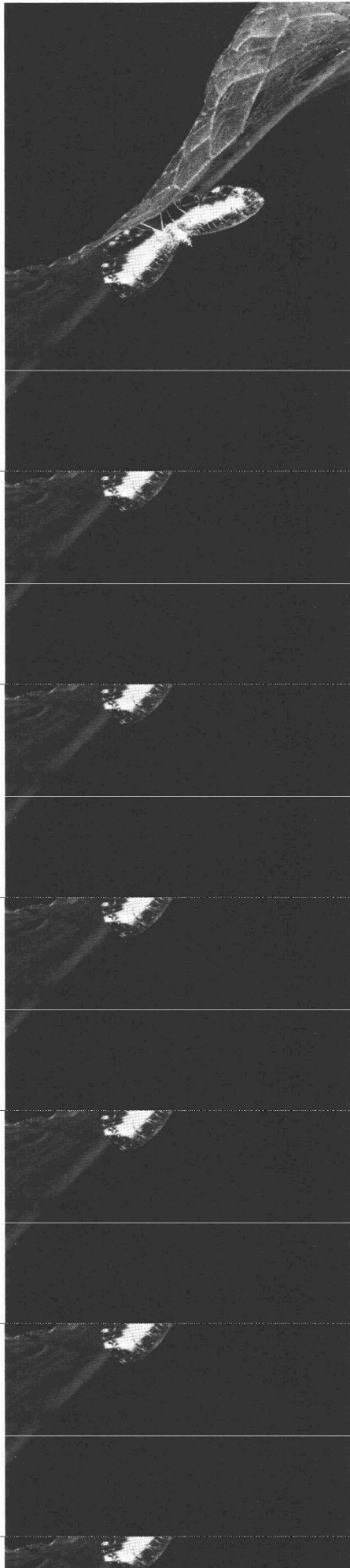
27 lepidopterists in November 1990 and another 26 lepidopterists in December 1990 has added more than 200 additional species in these two months to the identified list, raising the total to over 1,060 identified species inhabiting the area around the Fazenda Rancho Grande field station. We still project that the "final" list will amount to around 1,600 butterfly species!

As mentioned in Emmel (1989) and Emmel and Austin (1990), the sampling efforts have centered on the Fazenda Rancho Grande, a 750-hectare tract (1,875 acres) owned by the Harald Schmitz family. This family has been extremely helpful in providing accommodations and other logistical support for our Lepidoptera surveys. The area has been sampled for about 10 kilometers in all directions around the Fazenda, which at the central ranch house lies at latitude 10°18'S and longitude 62°60'W (corrected from 10°32' lat. and 62°42' long. stated in Emmel and Austin 1990). The terrain is typically low, rolling hills or flat plains covered with wet tropical rain forest, except in areas of human disturbance. The elevation in the area ranges from 160 to 350 meters.

In the last two months of 1990, a total of 17 kilometers (1,700 meters) of trails were constructed through the rain forest on the Fazenda, opening a wide range of habitats to exploration by interested naturalists. The trails are numbered and marked at each intersection so that remarkably precise records may be kept on locations of netted specimens or sightings.

FIELD STATION DEVELOPMENTS

A new and reasonably complete field station complex has been planned and will be constructed starting early in 1991. For those who have been to the area already, it will be located between the present cluster of ranch buildings and the edge of the hill rain forest at Fazenda Rancho Grande. By March 1991, the first new cabin unit of four large double (or triple) occupancy rooms will be ready. An additional three housing units of similar construction will be finished by fall of 1991. Each cabin will have a wide, shaded veranda, adequate for protection from the sun and for outside sorting work on tables. All rooms will have desk and table space inside for working on Lepidoptera or other collections. Inside bathroom facilities will also be included in each cabin building. Construction will also start shortly (perhaps to be completed by March or April 1991) on a formal laboratory building for general visitor use. Facilities will be quite adequate for a variety of research needs, from table space for visiting groups of entomologists or botanists, to complete microcomputer facilities in an air-conditioned room, and will include a freezer, refrigerator, rearing cages, etc., for long-term scientific visitors such as students, retired (but very active!) individuals who want to pursue a research project,



← PHOTO CAPTIONS

1. The lush, rich, tropical rain forest at Fazenda Rancho Grande in central Rondonia, western Brazil, supports the highest biodiversity of butterflies (approximately 1,600 species) yet discovered in the world. 2. More than 220 species of metalmarks (family Riodinidae) have been recorded at Fazenda Rancho Grande through December 1990. Many rest under forest leaves in this typical posture. 3. *Hypothyris euclea* (Nymphalidae: Ithomiinae) are attracted in considerable numbers to the stems of a decaying *Heliotropium* plant (family Boraginaceae) where they drink sap containing pyrrolizidine alkaloids. These chemicals serve as precursors to male pheromone production and also serve to protect the adults against predator attack. Unlike danaine adults, ithomiines do not get their protective chemicals from their larvae. In the case of the ithomiines, the larvae are protected by a different set of alkaloids that they ingest while feeding on their Solanaceae hosts. 4. The Rondonian rain forests have been subjected to intensive clearing and burning for the past two decades, primarily made possible by an ill-considered road-building project financed in the 1970's by the World Bank. Besides kicking bulldozers, lepidopterists are now playing an important and ever-mounting catalytic role in arrangements to preserve huge tracts of the remaining forest areas. 5. Fazenda Rancho Grande, a privately owned ranch and rain forest preserve near Cacaupalla, central Rondonia, has been the focus of considerable field work and preservation efforts in the Rondonian rain forest. Shown here is one of the older main ranch buildings; collectively, these can house up to 32 visitors now, in a highly significant demonstration of the benefits of ecotourism derived from preserving the rain forest. 6. *Lycorea cleobaea*, one of two *Lycorea* species at Fazenda Rancho Grande, is a danaine and the males can extend two long brushes of scent-emitting hairlike scales from the top of their abdomen (next picture). 7. The same *Lycorea cleobaea* male, extending its hair pencils and splaying them outwards in a brush-like state. 8. The nine species of *Hamadryas* (Nymphalidae: Nymphalinae) recorded at Fazenda Rancho Grande can be most easily taken or photographed at sap flows or wounded tree trunks. Otherwise, they are fast and agile fliers, and apparently have keen eyesight on the wing or while perched (in their usual resting position, with their head downwards and wings flattened against the light gray tree trunk for concealment).

university scientists, museum curators, etc., from throughout Brazil and from elsewhere in the world. A separate dining hall, lecture room, and kitchen will be added later.

Again, of interest to the more than 100 lepidopterists who have visited the site in the last several years, several of the older (less adequate) housing facilities will be torn down, and a new shared bathroom/shower facility is under construction next to the nicest existing double cabins. The total capacity of the station will be approximately 32 people by the middle of 1991.

SURVEY OF BUTTERFLY FAUNA TO DATE

Through the end of December 1990, the diversity of the butterfly fauna in the central Rondonia area continues to amaze all observers. We now have recorded over 220 species of metalmarks (Riodinidae) from this site, 18 species of *Adelpha*, 9 or more (depending on taxonomic interpretation of three diverse sympatric "forms" for each of two "species") species of *Morpho*, over a dozen species of *Memphis* and other subgenera related to *Anaea*, at least 6 species of *Prepona* and *Archaeoprepona*, 9 species of *Marpesia*, 9 species of *Taygetis*, 8 species of *Eunica*, 46 species of ithomiines, etc. Still under-reported in sampling to date are the Papilionidae and Pieridae, at 18 species and 30 species, respectively. One possible explanation of this under-representation is that the region has only been opened up at ground level with highways and extensive cleared fields over the past two decades. Some weedy butterfly species from elsewhere in Brazil are beginning to show up in these areas, probably following these new dispersal routes. It is also possible that there is some natural explanation for this sampling phenomenon, such as being unable (at least, to date) to get into the canopy area. Part of the future plans for this field station include a canopy walkway and observation platforms from which the canopy-dwelling species may be better observed.

For those interested in planning visits to Rondonia, the annual dry season here extends from May to September, and at its severe peak (in June, July, and August), monthly rainfall may drop to 20 mm or less. At this time, the forest dries out enough to allow large-scale burning and smoke cover becomes quite intense throughout Rondonia. The wet season starts in October and continues to late April, with annual rainfall averaging around 2,200 mm. The rainiest months are in January, February, and March, when it rains almost daily. Lepidoptera activity as monitored to date is at the highest levels in October through December, and March to early June.

For persons interested in an introduction to the incredible diversity of this area, Holbrook Travel is organizing 1991 group trips led by Thomas C. Emmel and George T. Austin to the Fazenda Rancho Grande for the dates of March 13-24, April 17-28, and November 13-24. Individuals who would like to arrange longer stays may also contact Holbrook Travel (3540 NW 13th Street, Gainesville, Florida 32609) for additional information as to costs and rates.

The fact that this new reserve has been established through the interest and financial contributions of dozens of lepidopterists and other naturalists living across the United States is testimony to the strong commitment of members of

our Society towards conservation of natural habitats — the only reasonably certain way of preserving environments for butterflies and thus allowing future generations to enjoy what we have been able to experience in our lifetimes. The creation of a new Rondonia Rain Forest Reserve, with the first purchase of land starting in January 1991, is also being supported by the federal government of Brazil and the state government of Rondonia, and it is anticipated that one or more major foundations, as well as major international corporations, will be making substantial gifts to greatly increase the size of the Reserve — hopefully to as much as one million acres in the next two years.

Thus the project initiated by the interest of a few lepidopterists in the Lepidopterists' Society will have grown into a Reserve that preserves not only butterflies for future generations, but also the wealth of tropical rain forest mammals, birds, reptiles, amphibians, fish in the numerous streams and lakes, and insects and invertebrates of all groups, in perpetuity. High officials in the federal government of Brazil, as well as many other interested parties, hope also that this pilot project — the Rondonia Rain Forest Reserve started by outside donations — will lead to similar new projects occurring throughout the Amazon Basin. These projects would be supported by not only ecotourism but also the self-interest of the local people who are beginning to recognize that the poor rain forest soils of much of the Amazon Basin cannot support intensive agriculture, but instead that the natural forest products can provide five to six times the income of cleared forest lands converted into poor pasture.

Lepidopterists who would be interested in being on the mailing list for reprints of publications on this area and other information pertaining to the S.O.S. Rain Forest Preserve Project, establishing this Rondonia Rain Forest Reserve and Biological Field Station, may write to the author below with such requests.

Thomas C. Emmel, Dept. of Zoology
Univ. of Florida, Gainesville, FL 32611



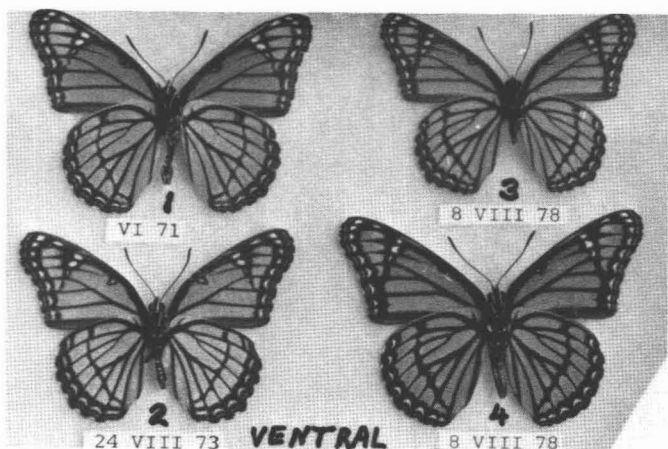
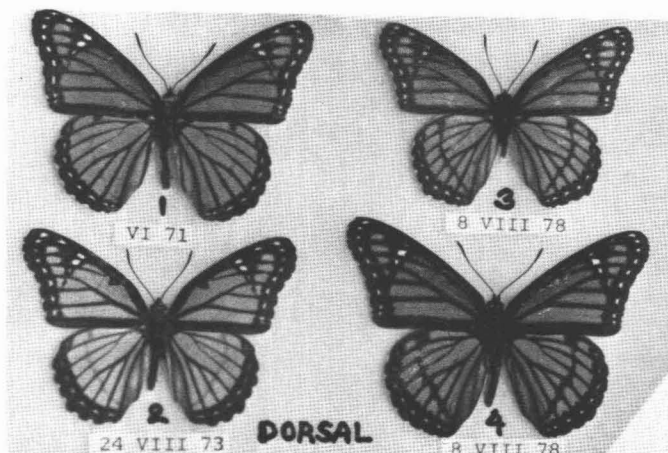
POOR BUTTERFLY

We want to smile; we find we cry
For beauty of poor butterfly.
Her life is short, her beauty great
Collectors' zeal to satiate.
For she who lives and sure feels pain
Let's see her death's not spent in vain.
So show her off though she be dead
Descendants may live in her stead.
For we must work that others sane
Ultimately will save the forests of rain.

Joy Cohen

THE NEW AND IMPROVED VICEROY

In the 1970s, in Thetford, VT and also in Ithaca, NY, I began to find specimens of *Basilarchia archippus* with obsolescence of the black median band on the secondaries. The photograph of material from Thetford shows this trait in specimens 1 and 2, but only on the dorsal surface. This development gives an improved mimicry of the monarch, as does a similar trait in the Great Basin subspecies *lahontani*. In the latter case the band grows progressively fainter toward the inner margin (see the illustration in Howe's *Butterflies of North America*), whereas in the present case the attenuation is fairly uniform.



Basilarchia archippus Thetford, VT

One could speculate that we are seeing parallel trends toward improved mimicry. My impression was that in Thetford in 1971-1978 about one specimen in four showed weakening of the band as illustrated here, but I observed far too few specimens to estimate how local or temporary this phenomenon might be.

Roderick K. Clayton
Los Angeles, California

MALATHION AND BUTTERFLIES

In late August, 1990, because an above-average number of mosquitoes were demonstrated to be carrying the virus of Eastern Equine Encephalitis (EEE), a disease with a high mortality in humans, all of Bristol and Plymouth Counties and part of Norfolk County, Massachusetts, were subjected to aerial spraying with malathion, in an effort to minimize transmission of EEE to humans.

Brian Cassie, Director of the Massachusetts Butterfly Atlas Project, did a butterfly count beneath a power line in the town of Easton, Bristol County, the day before the spraying and recorded 109 individuals in a total of 21

species.

Two days after the spraying, under similar conditions, he was able to observe a not-so-grand total of three species, four individuals. *Res ipse loquitur*. (On the first trip there were a few thousands of various insects seen, in flight and on flowers. On the second trip he saw 23 insects: 3 ambush bugs, 3 tiger beetles, 1 wasp, 8 grasshoppers, 1 bee, 2 dragon-flies, 1 moth, and the 4 butterflies.)

We look forward to a follow-up count in August 1991.

Dave Winter

LEPIDOPTEROUS LOGIC

1. A certain meadow contains five different species of butterflies. Each species has a different, uniform color and nectars on a different plant. At the end of the meadow, are five different trees in a row. Each butterfly species roosts in a different, specific tree and shares its tree with a different insect.
2. The swallowtails roost in the oak tree.
3. The fritillaries roost in the tree with the grasshoppers.
4. The butterflies from the pine tree nectar on milkweed.
5. The coppers nectar on lantana.
6. The pine tree is immediately to the right of the elm.
7. The green butterflies roost in the tree with the cicadas.
8. The yellow butterflies roost in the birch.
9. The butterflies from the tree in the middle nectar on clover.
10. The hairstreaks roost in the first tree on the left.
11. The blue butterflies roost in the tree next to the tree which has the wasps.
12. The yellow butterflies roost in the tree next to the tree which has the dragonflies.
13. The red butterflies nectar on daisies.
14. The skippers are white.
15. The hairstreaks roost in the tree next to the maple.

NOTE: The species, color, nectar plants, etc., have been selected completely at random without regard to actual facts in order to avoid divulging additional information.

WHICH BUTTERFLY NECTARS ON THISTLE AND WHICH BUTTERFLY ROOSTS IN THE TREE WITH THE BEETLES?

Answer on pg. 55

John M. Snider
San Pedro, California

INTERESTED IN NEPAL HIMALAYAN BUTTERFLIES?

By way of the Xerces Society, a request has come to the NEWS from a lepidopterist in Nepal who is looking for lepidopterological contacts throughout the world. Bhaiya Khanal is in charge of the butterfly section of the Natural History Museum of Nepal, where he has done research for the past 14 years. His address is: Anandkuti, Manjushree Bazar, Swoyambhu, Kathmandu, Nepal. He has published about a dozen papers and has a manuscript on "Butterflies of Kathmandu Valley" in the process of being published. He reports that there are over 600 species of butterflies in Nepal, including both oriental and palearctic taxa. He wishes correspondence with anyone interested in the butterflies of Nepal and would like to exchange publications with interested individuals.

PAPILLON PARK NOW OPEN

New England now has its first butterfly house. Papillon Park, in Westford, Massachusetts, was opened to the public September 6, 1990 by owner and designer George C. Leslie, Jr., a Lepidopterists' Society member from Waltham, MA.

The main flight area is housed in a 3000+ square foot atrium which is a half-round glassed structure 75 feet across. The side walls are about 12 feet high and taper to a peak at the rear of the atrium about 27 feet high. The structure is supported by six laminated beams with natural redwood framing.

The flight area is laid out with a winding walkway, a small waterfall, and a pond with a small sand beach as a watering place. The plantings are generally quite low and

include a small area for natural field grasses and weeds. In addition to the many nectaring plants, the larval foodplants of most of the exhibited butterflies are spotted throughout the atrium. Most of the newly hatched larvae are removed for rearing in separate enclosures, but some are left in the atrium for the visitors to observe and enjoy. These food plants are replaced as necessary.

Directly connected to the flight area is a 3-sided emergence area, where chrysalids can be viewed through glass windows. The fourth side is open to the atrium, so the newly eclosed lepidoptera may enter it as soon as they are ready to fly and feed.

For people who may not wish to be in among the butterflies (or who like to watch kids reacting to the experience of being among them), there are large observation windows at the rear of the atrium.

A spacious room behind these windows contains eight 3-sided glassed display areas, wherein are living exhibits of the life cycles of various species. These are determined by the season. They allow easy viewing for discussion of metamorphosis cycles with groups of visiting children. Photographs fill out the parts of the cycle not currently visible.

Papillon Park does not endeavor to duplicate the rain forest spectacle, the theme in many butterfly houses. Rather than display the exotic beauties, George Leslie has elected to feature only North American butterflies, and primarily those which can be encountered in New England or in the eastern part of the U.S. He hopes that visitors to the atrium will not be merely fascinated spectators, but will be starting to learn the nature and behavior of the species they can meet out of doors at their own homes, in local wanderings, and on vacation explorations. The importance of the butterflies' environment — our environment — will become a matter of personal importance.

The number of species represented varies from 15 to 30, depending on the time of year. Total numbers run from 300 to 500. The word "papillon" signifying, as it does, both moths and butterflies, is quite appropriate that moths are also prominently featured.

Making the connection with the local, real world more apparent, butterfly gardens are being laid out on the adjacent grounds to give visitors ideas for enhancing their own gardens. Evolving plans for the five-acre site include a nature trail, a man-made pond planted especially for attracting native butterfly species, and soon a hedge maze to be called the "Metamorphosis Maze." Each wrong turn will lead the visitor to a butterfly enemy; at turns in the correct path the stages of metamorphosis will be illustrated. Breeding and rearing enclosures, largely open to the visitors, will be completing the outdoor scene. Two 25' x 50' screen houses are already in place.

A gift shop in the main building offers only butterfly-oriented items, as well as hatching kits which contain larvae or pupae of many of the species flying in the atrium. They also retail plants, attractive to butterflies as nectar sources or larval hosts, which are not ordinarily available in garden centers and nurseries.

Papillon Park is open seasonally from 15 April through Columbus Day weekend in mid-October. Hours are at least 10:00 a.m. to 4:00 p.m., and longer in the long days of summer.



Interior view of the atrium at Papillon Park.

Admission is \$5.00 for adults, \$4.00 for children 3 to 11 years old and for seniors 65 and older. Group rates are also available.

During the operating season, information can be obtained by calling (508) 392-0955, and during the closed season, at (617) 893-7875. Correspondence may be directed to Papillon Distributors, Inc., P.O. Box 1463, Waltham, MA 02254.

A WINTER SOJOURN

One of my favorite pastimes in the Winter when the snow is up to here, the wind even higher, and the temperature way down there, is to dash off to a more Southerly exposure. No Winter collecting here in Utah for a sane person. So on January 24 of this year (1991) I mini-vaned to Ajo, in the most Southern part of Arizona to search for the wily and beautiful *Eupackardia calleta* (Cockerel) caterpillars. The Sonoran Desert is relatively mild at this time of the year.

It takes a great deal of searching in the *Sapium biloculare* bushes to find these colorful larvae, but it's usually worthwhile. The search extends through hills and ravines among the giant organ pipe cactus, the saguaros, and the smaller but rather malicious Cholla cactus. The temperature reaches 75 degrees and the solitude is absolute! While hiking in this area it is wise to be on the lookout for holes dug by the Indians in search for turquoise. These holes are often quite deep and are sometimes hidden by brush.

I collected 19 fourth and fifth instar *calleta* larvae which I brought back home, along with *Sapium* branches for them to feed on. The larvae grew rapidly at house temperature and all of them had spun cocoons within 12 days of capture.

Calleta larvae found in other areas of Arizona feed on Ocotillo and other vegetation. They have not been collected on Ocotillo in the Ajo quadrangle. No Summer population has been found at Ajo.

I gathered several old *calleta* cocoons on *Sapium* and brittlebush. Four of them had contained parasites, probably Braconids. The other two cocoons had produced moths. I've found Braconids and Tachinids in cocoons of *calleta* in the past.

The fact that one of these cocoons (empty) was found in an area far from *Sapium* host plants or Ocotillo was of particular interest to me. The cocoon was on a brittlebush directly beneath a Palo Verde tree (*Cercidium*), some 250 yards from any known host plant of Ajo *calleta*. Could it be possible that there could be a Summer population at Ajo that uses Palo Verde as a host? The tree was not in leaf at this time of the year.

I have tried black-lighting at Locomotive Rock several times during the past decade in January, attempting to capture the nocturnal *calleta* females, with no success. Nothing came to the light but several Noctuids and Geometrids. Nights are often quite cold here in January. Perhaps the females fly here in the daylight as the males do in all areas where *calleta* are found.

Calleta ova were found on the *Sapium* in groups of two to six. Most had hatched, but I found a group of three and one of two ova which were unhatched. These were brought home in large vials, still attached to the leaves. They did not hatch, but on February 15 tiny wasps emerged from all of the eggs, one wasp from each egg. They are a species of Scellionidae. The trim, black wasps are 3 mm in length and 1 mm in width. The cooler weather at Ajo, with some nights below freezing is apparently no deterrent to egg parasites. Freezing temperatures are, however, fatal to many of the *calleta* larvae and quite damaging to *Sapium* leaves.

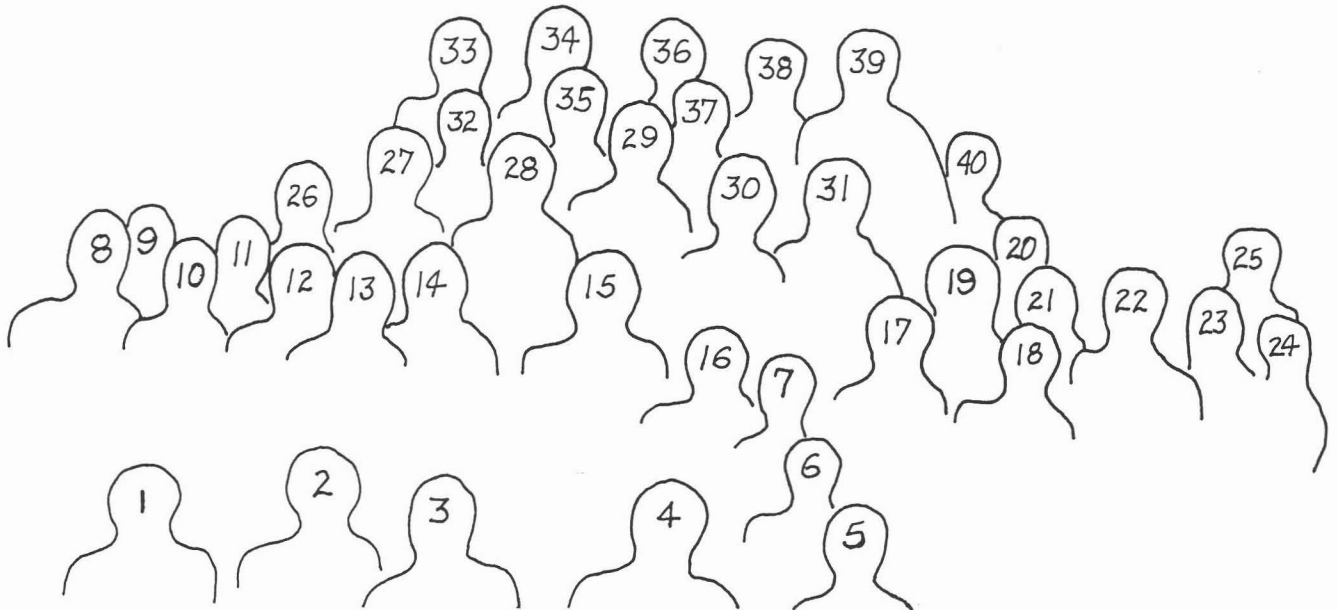
I wish that I lived closer to the Ajo area and could look for answers to some of the perplexing questions about this unique Winter population of *calleta*. If anyone else has blacklighted in January at Ajo, I would like to hear from them.

So much for my Winter interlude. Arriving back home I found that Winter was still in effect, and there had been no melt-down of the glacier in my front yard.

Bruce Duncan
10132 Buttercup Dr.
Sandy, Utah 84092

PACIFIC SLOPE MEETING, 1990

This photograph of part of the group of avid lepidopterists who attended the 1990 Pacific Slope meeting was taken by Jim Anderson with Ray Stanford's camera. Unfortunately not everyone is identified, but we did the best we could. Any additional identifications would be welcomed by the NEWS editor.



1. Dave McCorkle; 2. John Richards; 3. Vicki Runquist; 4. Paul Runquist; 5. Erik Runquist; 6. ??; 7. ??; 8. Paul Hammond; 9. Bob Kirk; 10. Ray Albright; 11. Ann Albright; 12. Ray Stanford; 13. Bob Mower; 14. Joel Johnson; 15. Uri Caspi; 16. Caspi's youngest son; 17. ??; 18. ??; 19. Bob Pyle; 20. Vern Covlin; 21. John Vernon; 22. John DeBenedictis; 23. Sue Anderson; 24. Anderson's daughter; 25. ??; 26. Ron Leuschner; 27. Hide Chiba; 28. John Hinchliff; 29. Laurence Crabtree; 30. Stephanie McKown; 31. Bob Langston; 32. June Preston; 33. Floyd Preston; 34. Julian Donahue; 35. Maurita Smyth; 36. ??; 37. Kathi Myron; 38. ??; 39. Ron Robertson; 40. ??.

A NOTE ON THE CLARKE/SHEPPARD/TURNER COLLECTION

The Clarke/Sheppard/Turner Genetic Collection of butterflies is housed at the Natural History Museum, Department of Entomology, Cromwell Road, London SW7 5BD, England. Telephone 071 938 9123. The collection consists of 132 drawers and it was accepted in 1982 and is ongoing. The work deals with the genetics of a number of species and of particular importance has been a study of mimicry in Swallowtail butterflies.

Among the species investigated are (so far) those of the Papilio machaon group, the P. glaucus group, P. polytes, P. dardanus, P. memnon, P. aegaeus and Hypolimnys bolina. There is also an appendix in which special aspects of the moths Biston betularia, Lymantria dispar and Panaxia dominula are considered. The butterflies in the drawers are the original families on which the actual work was done and with them are explanations and maps — and alongside the cabinets are copies of the relevant reprints. In addition there is the early correspondence between C. A. Clarke and P. M. Sheppard when the work was originally started in the 1950s.

The collection can be visited by application to Mr. R. I. Vane-Wright (direct line 071 938 9341) or Mr. Phillip Ackery (direct line 071 938 9346) both in the Department of Entomology at the Natural History Museum, and I (C. A. Clark) am often in London and could probably meet anyone interested there. My home address is 43 Caldy Road, West Kirby, Wirral, Merseyside L48 2HF, England, telephone 051 625 8811. Mrs. Alison Gill frequently goes to act as curator and she lives nearer London, her address being Tideway, The Warren, Mapledurham, Near Reading, RG4 7TQ, England (telephone 0734 479 126).

From The Editor's Desk

June Prestan



The calendar says it's spring and here in Kansas that can be a very unpredictable season. I saw a couple of butterflies flitting through our yard the other day, with spring less than a week old, but before the day was over the temperature plummeted from the balmy 80's to the 50's, the sky darkened gradually, and I hurried to the house as the rain began pelting down. Soon I heard the sounds of hail on the roof and looked out to see golfball size globules of ice nestled among the daffodils, and covering the lawn. So it was with a cozy fire in the fireplace that I set about getting this issue of The NEWS ready for the typist, and left the butterfly net in the closet for a more opportune moment.

Last fall in NEWS #5, 1990 I published a letter from Monica Miller detailing the problems she had had in rearing Promethea moths. She has had answers from several members in response to that letter and excerpts from two of them are included here as we thought they would be of interest to the Society membership in general. Also included is further comment from Monica.

From Jack Holliday ...I have raised Cecropias for about 20 years and on some occasions have experienced problems...with the moths trying to exit from the wrong end of the cocoon. Cecropias leave one end of the cocoon open, somewhat like the entrance to a lobster pot. The other end has no opening. The emerging moth exudes a liquid which seems to partially melt any interfering silk threads. If the pupa is "pointed" in the wrong direction, the liquid partially melts the silk but not enough for the moth to escape. From my observations and experience, I have concluded that:

1. The larva, while making the cocoon, must reverse its position within it several times in order to properly construct it, but the cocoon has an exit at only one end.
2. The larva probably orients itself by light or magnetic forces.
3. Not all larvae make their cocoons at the same time and the larva should not be disturbed once it has begun making its cocoon or the cocoon may be damaged or incomplete.

4. By making certain that the orientation of the larvae with respect to a given direction (if they must be moved for any reason) is always the same, I have solved my problem of reversed or wrongly "pointed" cocoons.
5. Monica's experience with the 1989 brood which all died after having emerged and were trapped inside the cocoons may have been caused by the disorientation of the pupae at some critical point when they were moved, and they ended up "pointing" the wrong way in their cocoons, thus could not emerge.

From Tom Carr ...In my opinion, storage in a modern refrigerator is not a good option. These refrigerators are usually either automatic defrost or frost free. They therefore virtually suck the moisture from any material stored beyond a brief period. If storing in a refrigerator is necessary, keeping a damp cloth or paper towel with the material is preferable to periodic spraying. That also has its danger, however, since mold can easily develop. Also, rearing stock on cut food commonly results in stunted and sometimes weak material. In my experience, this is especially true with Saturniidae.

From Monica Miller ...I didn't think I had changed anything in my formerly successful rearing procedure, but unknowingly, I had. I had moved in June of 1988. The apartment I had formerly rented had a great refrigerator! Once every six months one had to defrost it, but I didn't mind because it kept frozen food seemingly forever without any freezer burn. There was undoubtedly a lot of moisture circulating in the unit! When I moved, I encountered my first frost-free refrigerator, and found I had to change how I managed my freezer. Food cannot be kept beyond two months without incurring severe freezer burn. It never occurred to me that, if it was doing that to the meat, it was also stealing moisture from livestock in the vegetable bin!... My refrigerator (in conjunction with cut food) is the culprit!... I am back to rearing promethea (utilizing my newfound knowledge) this spring.... I just hope that when I buy a house I can get one of the old style fridges!

Metamorphosis

S. N. A. JACOBS.....

Word has recently been received of the death on Sept 14, 1989 of S. N. A. (Stanley) Jacobs of Bromley, Kent, England. Mr. Jacobs was a Society member for 35 years and attended a number of Annual Meetings of the Society throughout the years, for he greatly enjoyed these. Until his death he maintained gardens at his home full of rare, and endangered native wildflowers. He was primarily interested in Micros.

ERICH CARL WALTER.....

Erich Carl Walter died on Dec. 22, 1990 at age 87. Although not a member of the Society, he was well known by Lepidopterists in the Southern California area, and especially to me, since he was my uncle.

Erich was a life-long collector, as was his father. They were both honored with the patronym Saturnia walterorum. Erich had a keen sense of humor which made every visit a pleasure, and a great love for nature and the outdoors. His amazing talents for rearing Lepidoptera were directed toward his specialties: Papilio catocala, and the Saturniidae. He caught the first specimens of Saturnia albofasciata, and joined with his friend and fellow collector, John Johnson, in naming Coloradia velda after his wife Velda, who survives him. Catocala erichi was also named for him by A. E. Brower.

Disposition of his excellent collection has not been made at this time, but it was Erich's wish that it could be preserved intact in some western institution. He certainly will be missed by all who came in contact with him.

Ron Leuschner

* * * * *



NEEDED! A VOLUNTEER FOR A FASCINATING AND REWARDING TASK

Get to know your Society and active Lepidopterists through correspondence and personal contact. Be in on the decision making processes of the Society as a participant on The Executive Board. Help your Society prosper and grow. The Society is searching for a new editor of the NEWS of the Lepidopterists' Society. The task involves editing articles and a small amount of original writing plus preparation of photo-ready copy for the printer. If you have a flair for editing and would like to help the Society reach out to amateurs and professionals alike, please contact Paul Opler, Editorial Committee Chairman, Office of Information Transfer, US Fish and Wildlife Service, 1025 Pennock Place, Suite 212, Fort Collins, Colorado 80524. Also, after Sept 1, 1991, you may contact June Preston, NEWS Editor, 832 Sunset Dr, Lawrence, Kansas 66044. Further details and the job description are available from both above named individuals.

KENTUCKY LEPIDOPTERISTS

The Society of Kentucky Lepidopterists invites you to become a member. Dues, \$5.00 per year. Quarterly newsletter sent by first class mail. Field trips plus annual meeting each November. Membership includes people of all ages from many states and several foreign nations. Contact Dr. Charles V. Covell Sr, Dept of Biology, University of Louisville, Louisville, Kentucky 40292 USA.

UTAHENSIS PUBLISHES LEPIDOPTERA OF UTAH CHECKLIST

The Lepidoptera Journal UTAHENSIS has recently published the first comprehensive "Checklist of the Lepidoptera of Utah" by Gillette, Stanford, and Johnson. Species presently covered include 153 butterflies, 47 skippers, and 499 moths. The single issue cost is \$4.00. A subscription of Vol 10 of four issues of Utahensis (which includes Issue 1 — the Checklist) is \$10.00. If interested write to: Col. Clyde F. Gillette, Editor, UTAHENSIS, 3419 El Serrito Dr., Salt Lake City, UT 84109

SMITHSONIAN ARCHIVES ANNOUNCEMENT

The Smithsonian Institution Archives announces that a collection of biographies and photographs of entomologists, entitled Systematic Entomology Laboratory, United States Department of Agriculture, Photographs of and Biographical Information on Entomologists, 1797-1988 and undated, has been processed and is now available to scholars as record unit 7323 (2.73 linear meters). A finding aid to the collection is available upon request from the Archives.

Biographical material is varied, and includes obituaries, magazine and newspaper articles, correspondence, bibliographies, photographs, handwriting samples, book

reviews, and biographical sketches. Information on a number of entomological societies such as the Cambridge Entomological Club, the Entomological Society of America, and the Royal Entomological Society of London, is also included.

In addition, the collection contains photographs of entomologists collected for the most part by Eugene Amandus Schwarz and Herbert Spencer Barber, United States Department of Agriculture entomologists associated with the United States National Museum. Included are formal portraits, casual shots, photographs taken during field work, and group photographs. There are also photographs of field work sites from around the world.

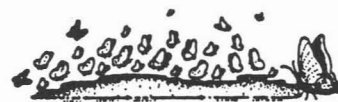
The Archives are located in room 2135 of the Arts and Industries Building of the Smithsonian Institution, 900 Jefferson Dr. S.W., Washington, D.C. 20560 and are open between 9:00 a.m. and 5:00 pm. Monday through Friday. Written and telephone [(202) 357-1420] inquiries are welcome.

NOTICE OF PROPOSAL FOR ENDANGERED SPECIES STATUS

On March 22, 1991, the U.S. Fish and Wildlife Service, under authority of the Endangered Species Act of 1973, as amended, proposed to add Speyeria zerene myrtleae (Myrtle's silverspot) to the list of endangered animals. S. z. myrtleae is restricted to central California within the foredunes and dune scrub communities and adjacent sandy habitats occupied by coastal scrub or coastal prairie. It occurs only in 3 dune systems: 1) near Portuguese Beach, 2) on the peninsula west of Bodega Bay (both Sonoma County), and 3) Point Reyes, Marin County. Based on scientific and commercial information, various scientific papers and unpublished reports and information gathered from knowledgeable entomologists, the animal is threatened by the following actions: commercial and residential development, off-road vehicle use, loss of the larval foodplant and adult nectar resources due to replacement of the native plants by alien plants and inappropriate levels of grazing, and perhaps stochastic (e.g., random) extinction of the remaining isolated populations. As a result of these actions, S. z. myrtleae has been proposed for endangered species status. Comments from the public regarding the accuracy of this proposed rule are sought, especially regarding:

- 1) biological, commercial trade or other relevant data concerning any threat (or lack thereof) to the butterfly;
- 2) the location of any additional populations of this subspecies and the reasons why any habitat should or should not be determined to be critical habitat as provided by Section 4 of the Endangered Species Act of 1973, amended;
- 3) additional information concerning the range, distribution and population size of the butterfly; and
- 4) current or planned activities in the subject area and their possible impacts on this subspecies.

Comments from all interested persons or organizations must be received by May 21, 1991. Public hearing requests must be received in writing by May 6, 1991. Please send all comments and materials to the Field Supervisor, Sacramento, Field Office, U.S. Fish and Wildlife Service, 2800 Cottage Way, Room E-1823, Sacramento, California 95825. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address. For further information please phone Chris Nagano at (916) 978-4866 or FTS 460-4866.



Forthcoming Meetings

XERCES SOCIETY 18TH ANNUAL MEETING

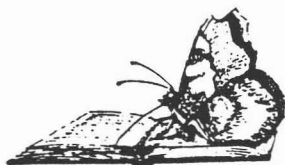
The 18th Annual Meeting of the Xerces Society will be held June 18-22, 1991 in conjunction with the annual meeting of the Society for Conservation Biology at the University of Wisconsin, Madison, Wisconsin. Registration

cost is US \$60/person and US \$30/student if received at the Xerces Society office by May 1, 1991; \$20/person additional after May 1, 1991; does not include transportation, meals or lodging. Registration deadline is May 28, 1991. The deadline for abstracts for oral or poster presentations for consideration must reach Xerces Society offices by May 20, 1991. The preliminary agenda includes a business meeting, presentation of papers/posters, joint fish boil and social, symposium and banquet. For more information write: Xerces Society, 10 SW Ash Street, Portland, OR 97204.

LEPIDOPTERISTS' SOCIETY 42ND ANNUAL MEETING

Sonoran Arthropod Studies, Inc and the University of Arizona's Department of Entomology will host the 42nd Annual Meeting of the Society at the Quality Inn University in Tucson, Arizona from Thursday, August 1 thru Sunday, August 4, 1991. The preregistration form and more detailed information appear on page 11 of NEWS #1, 1991. There will be no general mailing of registration forms or call for papers. If you are interested in attending the meeting, please fill out and return the preregistration form IMMEDIATELY. Your registration packet can then be mailed to you. For more information contact Steve Prchal, Sonoran Arthropod Studies, Inc, P.O. Box 5624, Tucson, Arizona 85703, USA, or phone (602) 883-3945.

Books



NEW PUBLICATION

The Association for Tropical Lepidoptera has begun publication of a new full color Journal for popular and scientific articles on tropical and subtropical Lepidoptera of the world. The first two issues of Tropical Lepidoptera were published in December 1990. In 1991 the publication should be on a regular schedule with issues in May and November. A newsletter entitled TROPICAL LEPIDOPTERA NEWS is also published 4 times a year. Editor is John B. Heppner and Associated Editor is Thomas C. Emmel. This beautifully illustrated Journal is available only through membership in the Association for Tropical Lepidoptera at \$25.00 per year. The quality of color photography in the first issue, however, makes it worth every bit of that for people who enjoy the beauties of Lepidoptera. The articles are short and well illustrated with black and white and/or color photos and line drawings. The 48 pages of the first issue contain 9 articles, both popular and scientific plus an editorial and some advertising, and include almost 12 pages of color, not counting the full color front and back covers. I cannot speak to the accuracy of the strictly scientific articles, but I found that the more popular articles were well written, well illustrated, easy to read and understand and made very worthwhile reading. If the high overall quality of this first issue can be maintained, the future of Tropical Lepidoptera should be rosy.

June Preston

Y.E.S. RESOURCE GUIDE

INTERNATIONAL ENTOMOLOGY RESOURCE GUIDE (Third Edition) AVAILABLE: Completely revised and updated, this resource guide includes over 550 businesses and organizations offering collecting equipment and supplies, insect traps, insect pins, collection storage equipment, rearing equipment and supplies, microscopes, laboratory equipment and supplies, insect displays, gifts and novelty items, consultants, tours and vacations for insect collectors, illustrators and photographers, preserved arthropod specimens, insect livestock, books and

publications, audio-visuals, software and all types of educational materials. It also includes worldwide listing of insect zoos, butterfly houses, and entomological organizations. Send US \$7.95 (foreign orders add \$2.95 for airmail delivery) to the Young Entomologists' Society, 1915 Peggy Place, Lansing, MI 48910-2553.

NEW BOOK

Atlas of Insects on Stamps of the World, published 1 Jan 1991. 426 pages in three parts, illustrated, soft-bound. To order, send a check for \$39.95 payable to Dennis R. Hamel, mailed to: Tico Press, 6638 Fisher Ave., Falls Church, VA 22046-1819, USA. The Atlas is a compilation of all insect stamps of the world. Part 1 (192 pages) covers the stamps by country of origin, illustrated by actual stamp reproductions. Part 2 (127 pages) provides a systematic checklist of insects on stamps by order, genus and species with scientific names. Part 3 (107 pages) lists common names and cross-references to country of origin and scientific names.

Ron Leuschner

New Members



- BELIK, ALEXEI: c/o Harry Pavulaan, P.O. Box 2494, Rockville, MD 20847.
 BERGSON, CHARLES: 2206 Mt. Vernon Street, Philadelphia, PA 19130.
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 SANTINI, J. G.: 1886 Mulberry Street, Yountville, CA 94599.
 SHEPARD, JON H.: R.R. #2, Sproule Creek Road, Nelson, British Columbia V1L 5P5, CANADA.
 SMITH, HELEN: World Conservation Monitoring Centre, 219 Huntingdon Road, Cambridge CB3 0DL, ENGLAND.
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Address Changes



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 WIDAGDO, JALAN: Anas Karim No. 35, Pedang Panjang 27116, West Sumatra, INDONESIA.

CORRECTIONS AND MINOR CHANGES TO THE 1990 MEMBERSHIP DIRECTORY

BROWN, IRENE (Ph.D.): new ZIP code is "94024".
 CHONG L., LUIS M.: correct name to read this way.
 HARDWICK, DAVID F. (Dr.): correct postal code is "K7H 3C8".
 HEDGES, FRANK W. (M.D.): new ZIP code is "34744".
 SAVAGE, PATRICK J.: new ZIP code is "84771".

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 1991 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 ad stands for 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: A large collection of tropical butterflies, moths and beetles. A select collection, all set in glass topped drawers. Cabinets are 5' high, drawers are 18" x 18" x 3". 12 cabinets total, most in mahogany. Contact Elmer Griepentrog, Elsie Rt, Box 740, Seaside, Oregon 97138. Phone (503) 755-2259.

FOR SALE OR EXCHANGE: Ova of *H. cecropia*, *A. luna*, *H. euryalis*, *C. promethea*, *A. io* and a few others. Reply with a SASE to Mark A. Howe, RR #1, Box 217, North Horeshoe Dr, Lake Village, Indiana 46349 USA.

FOR EXCHANGE: Montane and alpine Lepidoptera from France and neighboring countries for North American species of *Erebia*, *Oeneis*, *Colias*, and *Parnassius*. Especially desired are Alaskan and Canadian specimens. Pierre Willien, 9 rue du Belvédère, 05300 Laragne, France. For further information and desiderata list, contact Glenn A. Gorelick, Biology, Citrus College, 1000 W. Foothill Blvd., Glendora, California 91740.

WANTED: Carcasson, R. H. (1981), *Collins Handguide to the Butterflies of Africa* and any illustrated book dealing only with New Zealand butterflies and moths (e.g., Gibbs, Laidlaw, etc.). E. P. Sheskin, 2650 Ocean Parkway, 5E, Brooklyn, New York 11235 USA or phone (718) 981-8059.

TO SELL OR EXCHANGE: Autumn '91 cocoons of *Saturnia pyri* and *Antheraea mylitta*. Also winter pupae of *Papilio machaon gorganus*. For info please send \$1.00 US. J. P. Kazenbroot, Beethovengarde 77, 5344 CD, Oss, Holland.

FORTRADE: Butterfly species (limited number) from my area for USA butterfly species from other areas. Species from my locale include *Brephidium isophthalma*, *Heraclides crespontes*, *Pterourus troilus ilioneus*, *Ascia monuste*, *Basilarchia archippus watsoni* and *Anthanassa texana seminole*. Michael Lefort, Rt 1 Box 31A, Galliano, Louisiana 70354.

AVAILABLE FROM THE AUTHOR: A Field Guide to the Moths of Eastern North America (Peterson Field Guide No. 30, 1984), second printing, with most errors corrected and 10 overly dark plates improved. Casebound, \$19; paperback, \$14, postpaid (surface mail). Charles V. Covell Jr., Dept. of Biology, Univ. of Louisville, Louisville, KY 40292 USA.

FOR SALE: Two sets of Journal of the Lepidopterists' Society. One set is complete, Volumes 1-44, all original, excellent condition, for \$660.00 plus shipping (a 25% discount from publisher's price). Second set has some missing issues, I will negotiate about price for this set. EXCHANGE WANTED: I have on hand RHOP., and Spingidae from expeditions to South America and Africa; and U.S. RHOP., MACRO., and MICRO., which I wish to dispose of by exchanging for material of Odonata. Correspondence welcomed. Carl Cook, 469 Craillhope Rd., Center, KY 42214.

FOR SALE: Pupae and ova of H. cecropia and A. polyphemus. Sleeve reared. Pupae available until mid-May and ova until mid-June. Send a SASE to Russell Humphrey, 224 South Huron St, Cheboygan, Michigan 49721.

WANTED: A. polyphemus and S. cynthia cocoons now or ova in the spring. I have a few wild collected H. cecropia cocoons to trade, or will buy. I am going to Malaysia in 1991 on a buying trip for locally produced goods. I'd appreciate hearing from anyone familiar with travel in Malaysia or with Malaysian lepidoptera. James Romer, 7991 E. Hampden Circle, Denver, Colorado 80237-1405 USA.

WANTED: Will exchange or purchase specimens of North American Catocala. All inquiries welcome. Kenneth A. Neil, Agriculture Canada Research Station, Kentville, Nova Scotia B4N 1J5, Canada.

WILL EXCHANGE: Beetles and other insects from Spain for same from North America. Contact James C. Banks, Site 87, Box 82, RR #1 Bedford, Nova Scotia B4A 2W9, Canada.

FOR SALE OR EXCHANGE: Hybrid ova of Eacles oslari (Mexico) x imperialis (Florida) and/or E. imperialis x oslari. Available July/August. Please indicate quantity and preference. Daniel Sblendorio, 13 Highview Circle, Middletown, NJ 07748. Phone (908) 957-9679.

WANTED, COCOONS OF THE FOLLOWING USA SATURNIIDAE: C. securifera (both broods), Rothschildia forbesi, B. cincta cincta, B. orizaba, Anthera polyphemus olivae, Eupakardia calleta, Hyalophora gloverii reducta, H. gloverii nokomis, Agapema galbina, A. homogena, Any Saturnia ssp., Automeris randa, A. iris, A. cecrops pamina & A. zephyria. Also interested in papered specimens of the above. Will purchase or trade. Call Ira Nadborne, Collect (212) 942-5721 and identify yourself as a Lep. Soc. member (11 a.m. to 3 p.m. EST) or write to 1793 Riverside Drive, Apt. #2 I, New York, New York 10034.

FOR SALE: 12-drawer Cornell style insect storage cabinets, with drawers. Locking handle, door seal; olive green. Drawers 16 1/2 x 10 x 3"; tight, with hooks and knobs; clear lacquer finish. Well-used but good condition. Good price, quantity discount for all or large part of the 35 cabinets. For more information and prices phone (415) 723-5924 from 9 to 5 PST. Ask for Kathy Switky.

FOR SALE: Local and tropical bait traps available. Contact William G. Ward, 1474 Melbourne Dr. SE, Girard, Ohio 44420-1332 USA.

ATTENTION, THOSE INTERESTED IN REARING, PHOTOGRAPHY OF LIVING STAGES OF LEPIDOPTERA, LIFE CYCLES, CRYPIDS & MIMICRY, HABITAT DOCUMENTATION, PHENOLOGY, OR ADULT/LARVAL BEHAVIOR: A new book is now FOR SALE entitled PORTRAITS OF SOUTH AUSTRALIAN GEOMETRID MOTHS (see Covell's recent review in NEWS #5, 1989, pp. 72-73). M. S. Moulds, founder of the Australian Entomological Magazine, recently had the following to say about this book: "... I have no doubt that this is the most significant single work ever to appear on Australian moths. It must become one of the classics of Australian entomological literature." The limited 1st edition (500 copies) is already more than half sold; second edition unlikely. Send a 9" x 4" SASE if in the USA and I will forward a 5-page summary detailing the contents of this book. If not in the USA, just write. Noel McFarland, P.O. Box 1404, Sierra Vista, AZ 85636.

MEMBERS' COMMERCIAL NOTICES.....

I. R. WILLEM, P.O. Box 1625, Margate 4275, SOUTH AFRICA. FORSALE: Largest selection of South African beetles incl. Trichostetha, Hypselogenia geotropina, Eudicella euthalia natalensis, Amaurodes passerini rufotibialis, ANTHIA sp., MANTICHORA sp., Cerambycidae. Also multicolored rainbow grasshopper Maphyetus leprosus. Butterfly assortments. Charaxes ethalion, Papilio dardanus cenea plus rare material on special request.

EDUARDO C. WELLING M., Apartado Postal 701, Mérida, Yucatán, Mexico. Will exchange insects for the following publications: Cecile Hulse Matschat (J. A. Richards Inc., Random House, N.Y., 1942 by Artists and Writers Guild, Inc.), American Butterflies and Moths; Lillian D. Fazzini, Butterflies of North America; Kenneth J. Hayward, Catálogo Sinonímico de los Ropalóceros Argentinos, 1950; H. L. Lewis, Butterflies of the World, 1973; Alexander Heyne & Dr. Otto Taschenberg, Die Exotischen Käfer in Wort und Bild, Esslingen and München 1908; E. W. Rockburne & J. D. Lafontaine, The Cutworm Moths of Ontario and Quebec; Bernhard Klausnitzer, Beetles, 1983 English edition; Fernando do Zayas, Revisión de la Familia Cerambycidae, Laltabama, Cuba; Mohres-Reitter, Coleopteros. La Vida Enigmática de los Escarabajos, Ediciones Daimon, Manuel Tamayo, Madrid-Barcelona-Mexico-Buenos Aires, 1966, by Chr. Belsler Verlag, Stuttgart (either Spanish or English edition); D'Abbrera, Sphingidae mundi, new or used. Will accept any of these used if in good, clean condition. ALSO WANTED: Spade tipped forceps 5/8 inches long from Germany, that have the following data on them — SHOWGARD-SOLINGEN-GERMANY-909. Will purchase or exchange for these. Any information on a source would be greatly appreciated.

FLORA & FAUNA BOOKS: P.O. Box 15718, Gainesville, FL 32604. Curtis, BUTTERFLIES OF IDAHO is due May 1991 at \$34.95 (464 pp, 8x11; color pl) (NOTE: publisher delay after May is not our responsibility since May is their current official release date); DeVries, BUTTERFLIES OF COSTA RICA, \$22.50 paper; Shull, BUTTERFLIES OF INDIANA, \$25.00; Chang, ILLUSTRATED MOTHS OF TAIWAN, Pt. 1 (\$19.50), Pt. 2 (\$25.00) (in Chinese with Latin names; color plates); Chang, BUTTERFLIES OF TAIWAN, Pt. 1 (\$17.95), Pt. 2 (\$25.00) (Chinese with Latin names & English summary; color plates); Wang, SILKMOTHS OF TAIWAN, \$7.95 (Chinese with Latin names; color plates). All new books are discounted: take your total order and subtract 5%, then add \$2 shipping/handling for first book and 75¢ for each added book (Foreign orders add \$1.50 more each book).

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PUZZLE ANSWER

The Hairstreaks nectar on thistle and the Skippers roost in the pine tree with the beetles.

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DEADLINES: Material for the Jan/Feb issue should reach the NEWS EDITOR by Dec 1 of the previous year, and that for the Mar/Apr Issue by Feb 15, for the May/June issue by Apr 1 and for the July/Aug issue by May 1, the Sept/Oct issue by Aug 15 and the Nov/Dec issue by Oct 15. Reports for the SEASON SUMMARY must reach the ZONE COORDINATORS listed on the front cover no later than the 5th of January. NEWS EDITOR is June Preston, 832 Sunset Dr, Lawrence, Kansas 66044-2373, USA. Phone (913) 843-6212. RIPPLES EDITOR is Jo Brewer, 257 Common St, Dedham, Massachusetts 02026-4020, USA.

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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 the 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 02026-4020, USA. Home phone (617) 326-2634.

Requests for Missed Issues (i.e. those not delivered although dues have been paid on time) should be sent to the TREASURER, Fay H. Karpuleon, address above, or the PUBLICATIONS COORDINATOR, Ron Leuschner, address below. Defective issues will also be replaced by the TREASURER. Do not request these of the NEWS editor.

Manuscripts submitted for publication in the JOURNAL are to be sent to Dr. Boyce Drummond, EDITOR, JOURNAL of the Lepidopterists' Society, Natural Perspectives, P.O. Box 9061, Woodland Park, Colorado 80866-9061, USA. Phone (719) 687-6596. See the inside back cover of a recent issue of the JOURNAL for editorial policies.

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AVAILABLE PUBLICATIONS OF THE SOCIETY..... Order from the PUBLICATIONS COORDINATOR, Ron Leuschner, 1900 John St., Manhattan Beach, CA 90266-2608 USA.

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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: \$6.00 postpaid; \$7.50 first class in USA or \$9.00 airmail abroad. Non-members: \$10.00 postpaid; \$11.50 first class in USA or air post to Canada.

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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 postpaid.

BACK ISSUES of the JOURNAL and of the NEWS of the Lepidopterists' Society. For a list of the available issues and their cost, postpaid, send a SASE to the SECRETARY or to the PUBLICATIONS COORDINATOR.