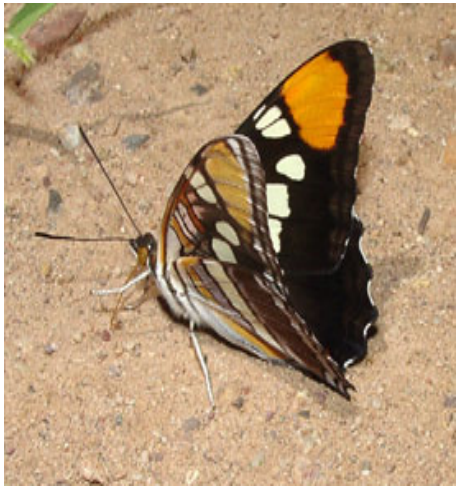
Lepidopterists' Society (56th)
Southeastern Arizona Chapter
of
North American Butterfly Association (SEABA)
2005 Combined Conference



Windemere Hotel & Conference Center
Sierra Vista, Arizona
August 2-7, 2005

Cover illustration of Arizona Sister (*Adelpha bredowii)*
Courtesy of Henry and Priscilla Brodkin ©, Hereford, Arizona

Program copy courtesy of Evi Buckner-Opler and Paul Opler, Department of Bioagricultural Sciences, Colorado State University, Fort Collins, Colorado 80539

Program

Joint Meeting of the Lepidopterists' Society (56th annual), Pacific Slope Section of the Lepidopterist Society, Southeastern Arizona Chapter of North American Butterfly Association (SEABA)

Windemere Conference Center and Hotel
Sierra Vista, Arizona, August 2-7, 2005

[Program, registration, and local arrangements: Hank Brodkin, Evi and Paul Opler]

Please wear your name tag to all times to gain access to different events.

Monday, August 1st

6:00-8:00 p.m.: Distribution of prepaid packages, field trip information, late registration. Façade, Windemere Conference Center & Hotel

Tuesday, August 2nd

7:30-8:30 a.m. Distribution of pre-paid registration packets. Façade, Windemere Conference Center & Hotel

8:15 a.m. Field trip assignments, prepaid lunch boxes (need ticket), and carpool arrangements, Parking Lot Windemere Conference Center & Hotel

8:30a.m. to 3:30 p.m.*

Field Trip 1—Photography and observation, Group 1,
Leaders Jim Brock and Fred Heath
Field Trip 2—Photography and observation, Group 2,
Leaders Hank and Priscilla Brodkin
Field Trip 3—Sampling, collecting, observation, Group 1,
Leader Paul Opler
Field Trip 4—Sampling, collecting, and observation, Group 2,
Leader Robert M. Pyle

***All field trips will depart from the parking lot of the Windemere Hotel. You must have your tickets (in your registration packet) to receive your pre-paid box lunches, or bring your own lunch. All participants will be asked to provide appropriate clothing, sun and insect protection. You should also bring plenty of drinking water. You cannot participate without a signed a liability release form on file. Assignment to field trip groups is based strictly on the order of registration. Transportation is by car-pooling of participants.**

6:00-8:00 p.m. Distribution of prepaid registration packages, late registration, Facade, Windemere Conference Center & Hotel

Wednesday, August 3rd

7:30-8:30 a.m. Distribution of pre-paid registration packets, Façade, Windemere Conference Center & Hotel

8:15 a.m. Field trip assignments, prepaid lunch boxes (need ticket), and carpool arrangements, front, Façade, Windemere Conference Center & Hotel

8:30a.m. to 3:30 p.m.*

Field Trip 5: Photography and observation, Group 1,
Leaders: Jim Brock and Fred Heath
Field Trip 6: Photography and observation, Group 2,
Leaders: Hank and Priscilla Brodkin
Field Trip 7: Sampling, collecting, observation, Group 1, Leader: Rich Bailowitz
Field Trip 8: Sampling, collecting, observation, Group 2, Leader: Paul Opler
Field Trip 9: Dragonfly study and observation, Leader Bob Behrstock

***All field trips will depart from the parking lot of the Windemere Hotel. You must have your tickets (in your registration packet) to receive your pre-paid box lunches, or bring your own lunch. All participants will be asked to provide appropriate clothing, sun and insect protection. You should also bring plenty of drinking water. You cannot participate without a signed a liability release form on file. Assignment to field trip groups is based strictly on the order of registration. Transportation is by car-pooling of participants.**

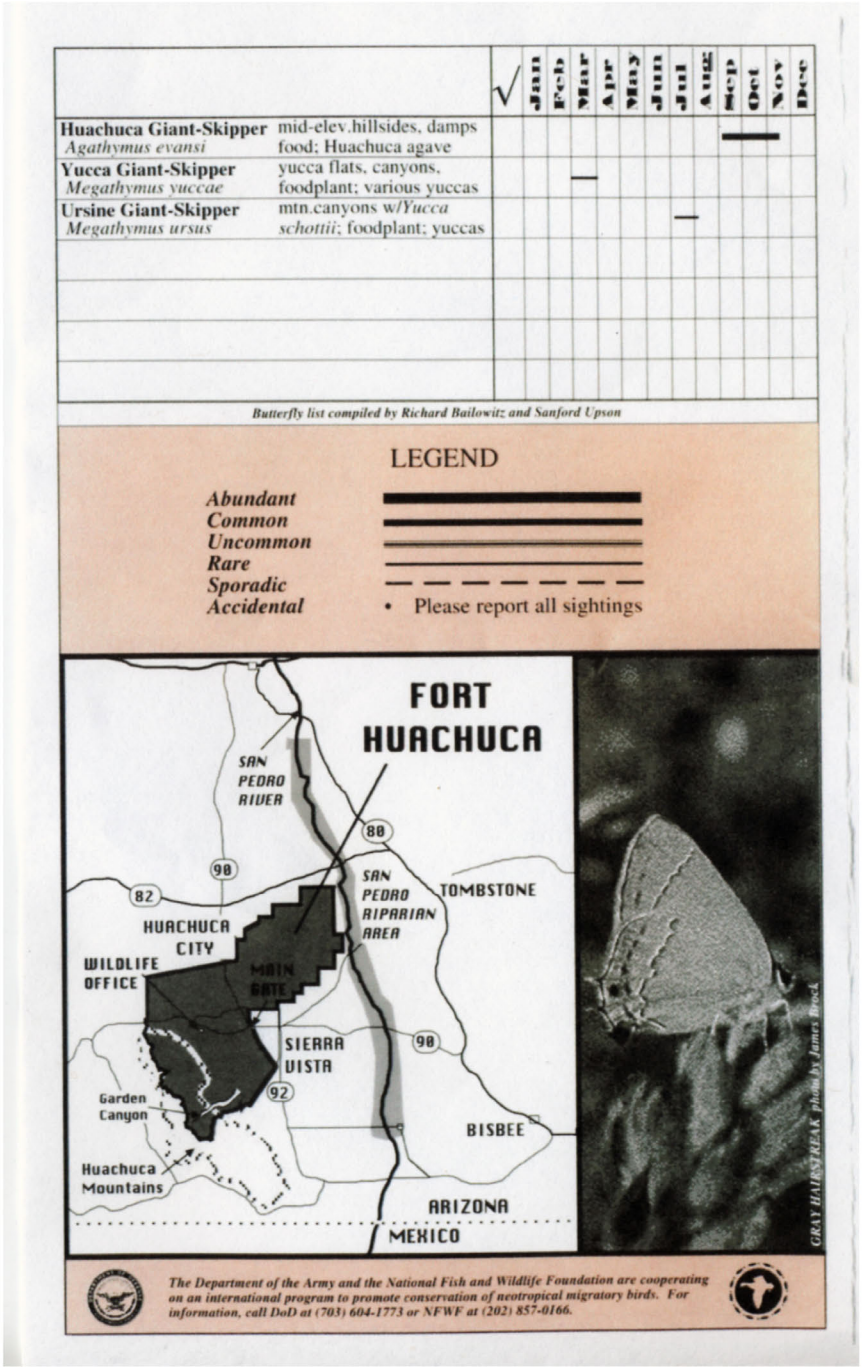
8:00-10:00 a.m.: Editorial board and other committees, Lepidopterists' Society, Buffalo Soldier Room, Windemere Conference Center & Hotel

10:00 a.m. to 4:00 p.m.: Lepidopterists' Society Executive Council Meeting, Buffalo Soldier Room, Windemere Conference Center & Hotel

5:00-8:00 p.m.: Distribution of prepaid packages, late registration, Façade, Windemere, Conference Center & Hotel

5:30-8:30 p.m.: Welcome reception and mixer (bring your drink ticket from your registration packet), cheese & crackers, fruit, and veggies, cash bar for all participants--Sponsored by BioQuip Products, Inc., Saguaro-Ocotillo Room, Windemere Conference Center & Hotel [1 ticket good for non-alcoholic beverage, domestic beer or house wine for paid registrants]

8:00-10:30 p.m.: Slidefest: Participants may show a series of slides on some topic related to Lepidoptera, all participants.
Buffalo Soldier Room, Windemere Conference Center & Hotel



Thursday, August 4th

8:00 a.m.-4:00 p.m.: Distribution of prepaid registration packages, late registration, Facade, Windemere Conference Center & Hotel

9:00 a.m.-4:00 p.m.: Poster displays, Executive Board Room, Windemere Conference Center & Hotel [see abstracts]

1. "How many Butterfly Species are in a Small Suburban Yard in the Eastern United States?
Barrows, Edward M., Laboratory of Entomology and Biodiversity, Dep. of Biology, Georgetown University, Washington, D.C. 20057-1229; barrowsed@georgetown.edu

2. "Developmental Plasticity: Effects of Dietary Pyrrolizidine Alkaloids on the Development of the Coremata of the Salt Marsh Moth (*Estigmene acrea*) (Lepidoptera: Arctiidae)."[student poster]
Jordan, Alex T., Department of Biology, Wake Forest University, Winston-Salem, N.C. 27109; jordnt1@wfu.edu

3. "A New Method for Mounting and Preserving Microlepidoptera for Molecular Research [student poster]."
Kawahara, Akito Y., Department of Entomology, University of Maryland, College Park 20742; kawahara@umd.edu

4. "Larval host plants and adult polyphenism in *Nemoria lixaria* (Guenée)" [student poster]
Gruber, John W. and Liz Parzych, Friends' Central School, 1101 City Avenue Wynnewood, PA 19096; JWGruber@msn.com

5. "The importance of color pattern in the speciation of *Heliconius heurippa* (Lepidoptera: Nymphalidae)." [student poster]
Salcedo, Christian, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, S.W. 34th Street and Hull Road, P.O. Box 112710, Gainesville, Fl 32611-8525; salcedo@ufl.edu

6. "Sound or Scent: Courtship Stimuli Produce Different Flight Patterns."
Sanderford, Mark V., 208 Mt. Vernon Ave., Danville, VA; oleander@gamewood.net

7. "Lepidoptera Inventory at Brooker Creek Preserve, Tarpon Springs, Florida"
Stillwaugh, Don M., Pinellas County Environmental Lands Division, Tarpon Springs, Florida; dstillwa@pinellascounty.org

8. "Total evidence phylogenetic analysis of the of the Moon Moths combining morphology, molecules, and mehavior (Lepidoptera: Saturniidae)."

Ylla, Josep, Richard S. Peigler, and Akito Y. Kawahara, Department of Entomology, University of Maryland, College Park 20742; kawahara@umd.edu

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Vendor Displays and Sales: Mesquite Room, Windemere Conference Center & Hotel
Thursday, Friday: 9:00 a.m.-4:00 p.m.

Vendors : BioQuip Products, Inc.; Brunton Optics; ButterflyBuzz/NABA Sales; Don Hahn/Natural History Books; El Cielo Butterfly Festival; LepTraps; Stevan Logsdon/Wildlife Artist; Swarovski Optik; Wildlife Computing; Wren Designs

Presentations: Ocotillo + Saguaro Room, Windemere Hotel and Conf. Center

8:30-9:10 a.m.: Welcome and opening announcements. James K. Adams, Elizabeth Sullivan, Paul Opler

Contributed papers: 9:10-9:54 a.m.

Morning Session, Moderator, Fred Heath

9:10-9:24 a.m.
Burns, John M., Department of Entomology, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560; burnsj@si.edu

"How well does DNA barcoding distinguish species of skipperbutterflies (Hesperiidae)?
[A question asked by Burns, Janzen, Hallwachs, Hajibabaei, and Hebert]"

9:25-9:39 a.m
Warren, Andrew D., Department of Zoology, Oregon State University, Corvallis, OR 97331 Hesperioidea@yahoo.com.

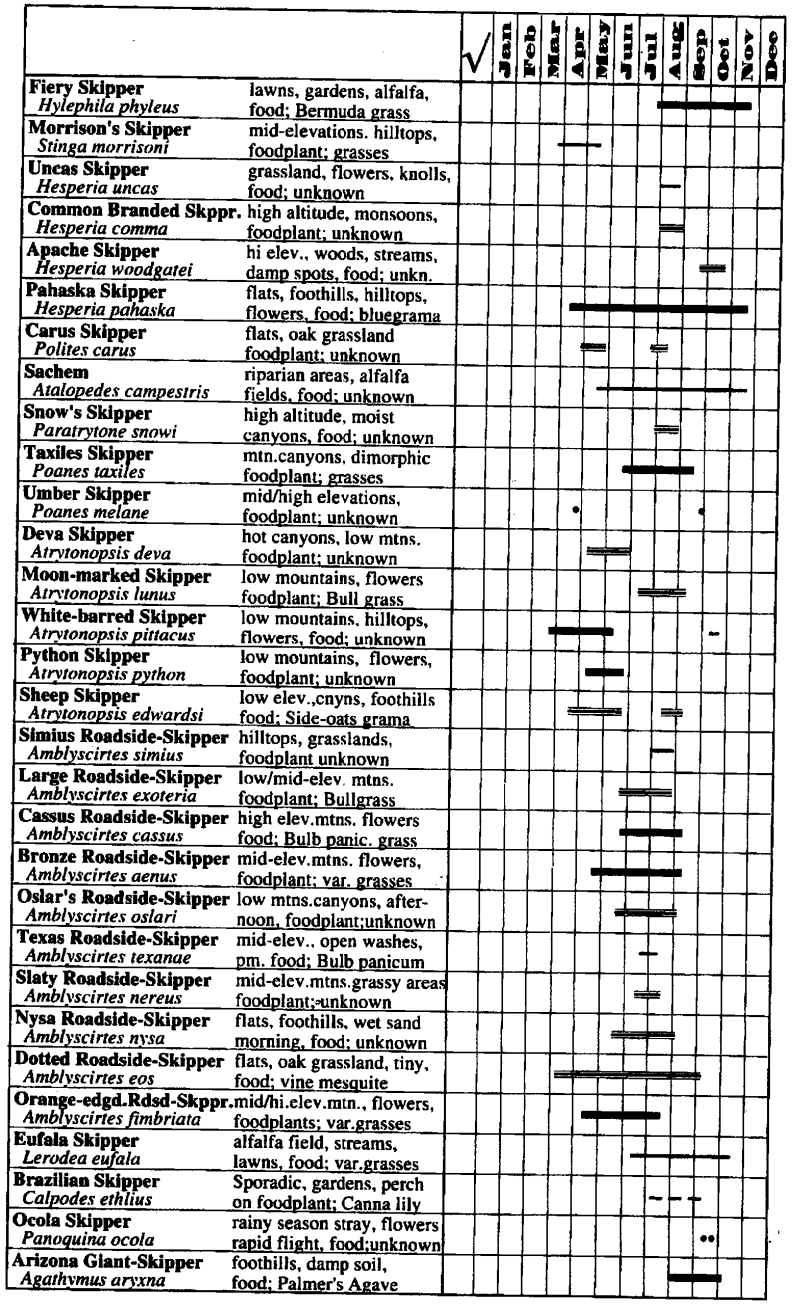
"Molecular Systematics of the Skipper Butterflies (Lepidoptera: Hesperiidae)." [student paper]

9:40-9:54 a.m.
Nazari, Vazrick, Department of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA; vnazari@ualberta.ca

"Phylogeny of Parnassiinae: When molecules clash with morphology." [student paper]

9:55-10:15 a.m
Brodkin, Priscilla, 3050 East Carr Canyon Road, Hereford, AZ 85615; hbrodkin@cox.net

"Butterflies of the Manu." [Invited presentation]



		√	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Common Buckeye *Junonia coenia*	flats, foothills, riparian area foodplant; monkeyflower													
Tropical Buckeye *Junonia genoveva*	grassland, foothills,cyclical, food; monkyflr.& speedwell													
Red-spotted Purple *Limenitis arthemis*	mtn.streams, lowlands, food; willow, cottonwood													
Viceroy *Limenitis archippus*	willow-based riparian areas foodplant: willows													
Arizona Sister *Adelpha bredowii*	Mtn.oak zone, damp soil foodplants; various oaks													
Common Mestra *Mestra amymone*	influx sp., floating flight, damp spots, food; noseburn													
Tropical Leafwing *Anaea aidea*	influx species, damp spots, no nectar, food; unknown													
Goatweed Leafwing *Anaea andria*	sporadic; Garden Canyon; food; Texas croton													
Hackberry Emperor *Asterocampa celtis*	large rivers, perches in trees food; Netleaf hackberry													
Tawny Emperor *Asterocampa clyton*	San Pedro, perches in trees food: Netleaf hackberry													
Nabokov's Satyr *Cyllopsis pyracmon*	mid-elev.mtn. cyns, shade, food; Bull+various grasses													
Henshaw's Satyr *C. pyracmon henshawi*	bounds thru dappled shade, oak wdlnds, food;Bull grass													
Canyonland Satyr *Cyllopsis pertepida*	mid/high elevations, no nectar; fooplant unknown													
Red Satyr *Megisto rubricata*	oak grassland, damp spots; foodplant unknown													
Pine Satyr *Paramacera allyni*	high elev..cooler canyons, damp spots; food Bentgrass													
Red-bordered Satyr *Gyrocheilus patrobas*	moist cnyns.hillsides,nectar foodplant; Bull grass													
Monarch *Danaus plexippus*	influx species,showy, nectar foodplant; milkweeds													
Queen *Danaus gilippus*	flats, foothills, nectar, damp spots, foodplants;milkweeds													
Soldier *Danaus eresimus*	stray to San Pedro Valley foodplant unknown													
Dull Firetip *Pyrrhopyge araxes*	monsoon season, oak zone foodplant; oaks													
Silver-spotted Skipper *Epargyreus clarus*	mtn.canyons, several broods food: New Mexican locust													
Hammock Skipper *Polygonus leo*	influx species, avid nectarer foodplant; unknown													
White-striped Longtail *Chioides catillus*	dry canyons, flowers, gaudy foodplant; legumes													
Zilpa longtail *Chioides zilpa*	stray, wooded canyons, nectar, foodplant; unknown													
Short-tailed Skipper *Zestusa dorus*	oak zone, damp soil,hilltops foodplant; Arizona oak													
Arizona Skipper *Codatractus arizonensis*	foothills, south end range foodplant; Kidneywood													
Long-tailed Skipper *Urbanus proteus*	influx species, riparian areas, foodplant;Tick-clover													
Dorantes Longtail *Urbanus dorantes*	influx sp.nectar,dapld.sun food;Btrfly pea;tick clovr													
Two-barred Flasher *Astraptes fulgerator*	stray to Garden Canyon gaudy, food; unknown													
Golden-banded skipper *Autochton cellus*	well-watered canyon foodplant; legumes													

…… Break 10:16-10:31 a.m. ……

10:31-10:51 a.m.
Garwood, Kim M., Mission, TX 78572; kimgrwd@sbcglobal.net
"Butterflies of Northeastern Mexico." [Invited presentation]

Contributed papers, continuation

10:52-11:06 a.m
Lawrie, David D., Department of Physics, University of Alberta, Edmonton, Alberta, Canada; dlawrie@phys.ualberta.ca
"The Dominican Republic: Caribbean Hot Spot for Biodiversity."

11:05-11:19 a.m.
Williams, Ernest H., Department of Biology, Hamilton College, Clinton, New York 13323; ewilliam@hamilton.edu
"The conservation status of Gillett's Checkerspot, *Euphydryas gillettii*."

11:20-11:34 a.m.
Rudolph, D. Craig, Charles A. Ely, Richard A. Schaefer, and J. Howard Williamson, U. S. Forest Service, Southern Research Station, 506 Hayter St., Nacogdoches, TX, 75965; crudolph01@fs.fed.us
"Shortleaf pine, fire, and butterflies: effects of ecosystem restoration on butterfly abundance in the Ouachita Mountains, Arkansas."

11: 35-11:49 a.m.
Bowers, Deane, Department of Ecology and Evolutionary Biology, University of Colorado, Boulder; 80309 deane.bowers@colorado.edu
"Checkerspot Chemical Defense: Importance of Host Plant and Life Stage."

11:50 a.m.-12:04 p.m.
Koehn, Leroy C., 202 Redding Road, Georgetown, Kentucky, 40324; leptraps@aol.com
"Catocala Capers: Lepidoptera Humor."

……12:05-1:15 p.m.……LUNCH on your own

Afternoon Session, Moderator John Brown

Contributed papers, continuation

1:16-1:30 p.m.
Bagdonas, Karolis, Biology Dept., Sam Houston State University Huntsville, TX 77341-2116.
"Where have all the Lepidoptera gone? The strange summer of 2004 in northwestern Wyoming."

1:31-1:44 p.m.
Kral, Thomas, 6600 North Galaxy Road, Tucson, Arizona, 85741, phoebus@gainusa.com
"Biodiversity Discovered: Solving the Mystery of the Global Species Count and Exploding the Myth of the Sixth Extinction."

1:45-1:59 p.m.
McGuinness, Hugh D., The Ross School, Sag Harbor, New York, 11963; hmcguinness@ross.org
"Moths of a Maritime Grassland Restoration Project at Montauk, New York."

2:00-2:14 p.m.
Douglas, Matthew M., Grand Rapids Community College, 7131 Oran SE, Cascade Terrace, Grand Rapids, Michigan, 49546; mdouglas@grcc.edu
"A Review of the Migration Guidance System of the Monarch Butterfly (Danaus plexippus) and a Synthesis Hypothesis for Orientation and Migration Behavior."

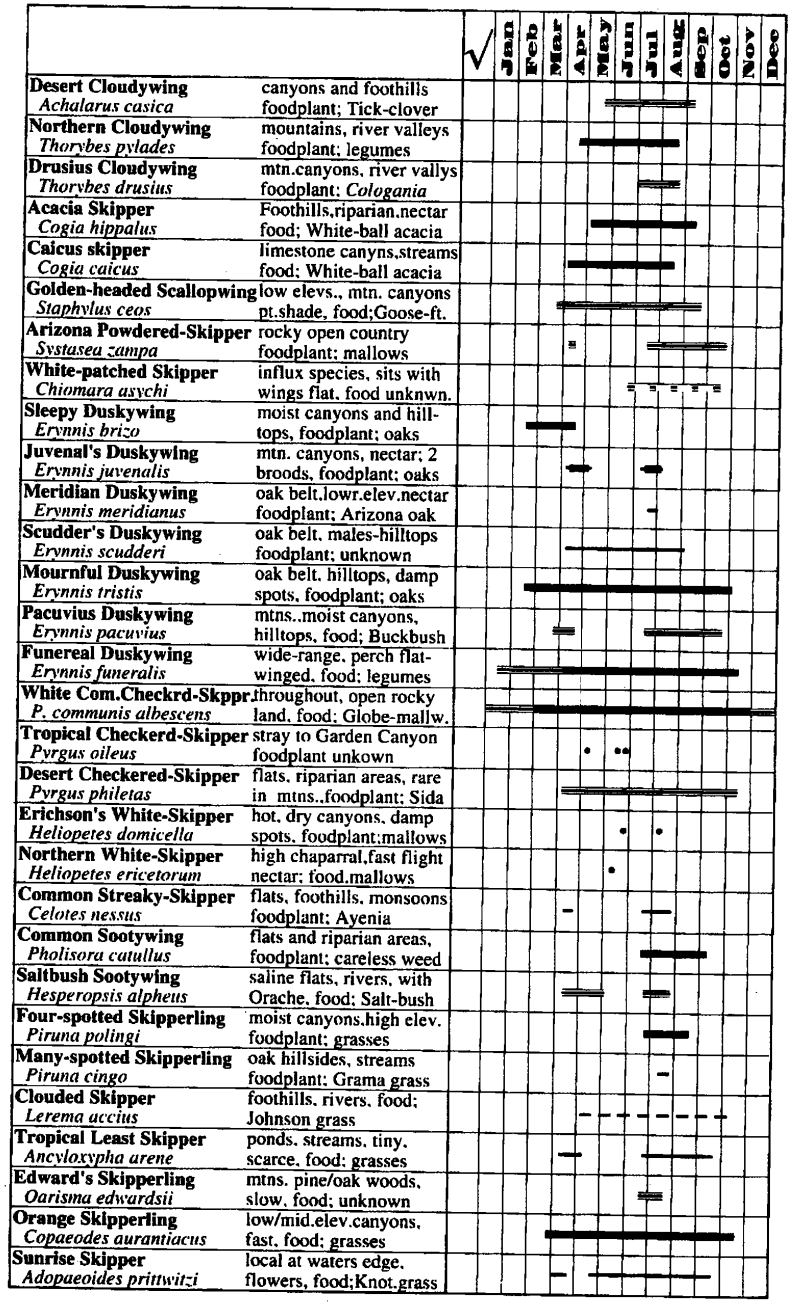
2:15-2:29 p.m.
Klein, Michael W., 4588 Wilson Ave, San Diego, CA 92116; keps2@flite-tours.com
"Thorne's Hairstreak *(Callophrys thornei)* where we have been, what happened, where we have gone and where we need to go."

…… Break 2:30-2:45 p.m. ……..
2:46-3:00 p.m.
Simonsen, Thomas J., Department of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA
"The wing vestiture of the non-diitrysian Lepidoptera: Evolutionary aspects and phylogenetic implications."

3:01-3:15 p.m.
Rota, Jadranka [student], **University of Connecticut, Storrs, CT 06269-3043; jadranka.rota@uconn.edu**
"Evolution of Complex Morphological Characters in Metalmark Moths (Lepidoptera: Choreutidae)." [student paper]

3:16-3:30 p.m
Gilligan, Todd M.[student], **Museum of Biological Diversity, The Ohio State University, Columbus, OH 43212; gilligan5@osu.edu**
"Species concepts and boundaries in *Hystricopora* (Lepidoptera: Tortricidae)." [student paper]

3:31-3:45 p.m.
Powell, Jerry A., Essig Museum of Entomology, Univerity of California, Berkeley, 94720; powellj@nature.berkeley.edu
"Don Meadows, almost forgotten as a lepidopterist."



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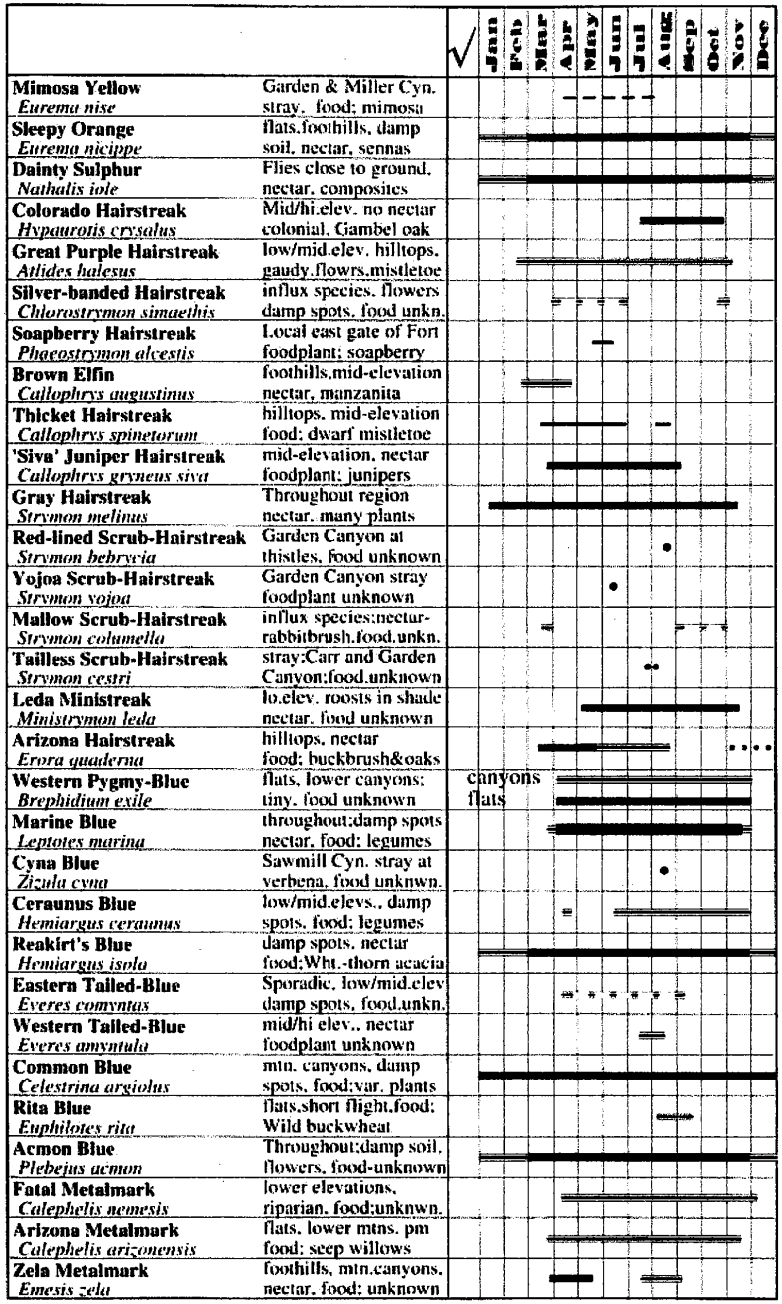
Desert Cloudywing *Achalarus casica*	canyons and foothills foodplant; Tick-clover													
Northern Cloudywing *Thorybes pylades*	mountains, river valleys foodplant; legumes													
Drusius Cloudywing *Thorybes drusius*	mtn.canyons, river vallys foodplant; *Cologania*													
Acacia Skipper *Cogia hippalus*	Foothills,riparian,nectar food; White-ball acacia													
Caicus skipper *Cogia caicus*	limestone canyns,streams food; White-ball acacia													
Golden-headed Scallopwing *Staphylus ceos*	low elevs., mtn. canyons pt.shade, food;Goose-ft.													
Arizona Powdered-Skipper *Systasea zampa*	rocky open country foodplant; mallows													
White-patched Skipper *Chiomara asychi*	influx species, sits with wings flat, food unknwn.													
Sleepy Duskywing *Erynnis brizo*	moist canyons and hill-tops, foodplant; oaks													
Juvenal's Duskywing *Erynnis juvenalis*	mtn. canyons, nectar; 2 broods, foodplant; oaks													
Meridian Duskywing *Erynnis meridianus*	oak belt,lowr.elev.nectar foodplant; Arizona oak													
Scudder's Duskywing *Erynnis scudderi*	oak belt, males-hilltops foodplant; unknown													
Mournful Duskywing *Erynnis tristis*	oak belt, hilltops, damp spots, foodplant; oaks													
Pacuvius Duskywing *Erynnis pacuvius*	mtns..moist canyons, hilltops, food; Buckbush													
Funereal Duskywing *Erynnis funeralis*	wide-range, perch flat-winged, food; legumes													
White Com.Checkrd-Skppr. *P. communis albescens*	throughout, open rocky land, food; Globe-mallw.													
Tropical Checkerd-Skipper *Pyrgus oileus*	stray to Garden Canyon foodplant unkown													
Desert Checkered-Skipper *Pyrgus philetas*	flats, riparian areas, rare in mtns.,foodplant; Sida													
Erichson's White-Skipper *Heliopetes domicella*	hot, dry canyons, damp spots, foodplant;mallows													
Northern White-Skipper *Heliopetes ericetorum*	high chaparral,fast flight nectar; food,mallows													
Common Streaky-Skipper *Celotes nessus*	flats, foothills, monsoons foodplant; Ayenia													
Common Sootywing *Pholisora catullus*	flats and riparian areas, foodplant; careless weed													
Saltbush Sootywing *Hesperopsis alpheus*	saline flats, rivers, with Orache, food; Salt-bush													
Four-spotted Skipperling *Piruna polingi*	moist canyons,high elev. foodplant; grasses													
Many-spotted Skipperling *Piruna cingo*	oak hillsides, streams foodplant; Grama grass													
Clouded Skipper *Lerema accius*	foothills, rivers, food; Johnson grass													
Tropical Least Skipper *Ancyloxypha arene*	ponds, streams, tiny, scarce, food; grasses													
Edward's Skipperling *Oarisma edwardsii*	mtns. pine/oak woods, slow, food; unknown													
Orange Skipperling *Copaeodes aurantiacus*	low/mid.elev.canyons, fast, food; grasses													
Sunrise Skipper *Adopaeoides prittwitzi*	local at waters edge, flowers, food;Knot.grass													



3:46-4:00 p.m.

Richers, Kelly M., 3417 Carvalho Court, Bakersfield, CA 93311-1486; kerichers@wuesd.org

"The California, Arizona, and Nevada County Moth Lists, Making Progress and Expanding Horizons."

4:01-4:15 p.m.

Snyder, John A., Dept. of Biology, Furman University, Greenville, SC 29613; john.snyder@furman.edu

"A Database and Checklist for South Carolina Moth Species."

4:16-4:30 p.m.

Weiss, Martha R., Georgetown University, Washington D.C., 20057

"Learning by lepidopterans."

********** **Dinner is on your own** **********

5:30-11:00 p.m.

Field trips 10 and 11: Moth collecting and observation. Leaders incolude Dr. Bruce Walsh, University of Arizona, locations to be determined, possibly Carr Canyon or Copper Canyon, car-pooling, these trips are only for those who are pre-registered, and have turned in signed liability release forms. Remember to bring your own flashlight, appropriate clothing and footwear. Meet in front of the Windemere. [several co-leaders needed]. So many people have signed up for this trip that we will have to have not only separate locations for observers and collectors but at least several trips for each type. Locations and leaders to be determined at time of meeting. Leaders are desperately needed!!

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Friday, August 5th

9:00 a.m.-4:00 p.m.: Poster displays, Executive Board Room, Windemere Conf. Center & Hotel [see abstracts]

9:00 a.m.-4:00 p.m.: Vendor displays and sales:
Mesquite Room, Windemere Conference Center & Hotel,
Vendors : BioQuip Products, Inc.; Brunton Optics; ButterflyBuzz/NABA Sales; Don Hahn/Natural History Books; El Cielo Butterfly Festival; LepTraps; Stevan Logsdon/Wildlife Artist; Swarovski Optik; Wildlife Computing; Wren Designs

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Presentations: **Ocotillo + Saguaro Room, Windemere Hotel and Conf. Center**

8:00-8:10 a.m.: Daily announcements. Paul Opler

8:11-10:55 a.m. Invited Symposium on Mexican Lepidoptera,
Moderator Carmen Pozo

8:11-8:20 a.m. Introductory Comments, Carmen Pozo

8:21-8:41 a.m.
Balcázar Lara, Manuel A. Facultad de Biológicas y Agropecuarias, U. de Colima, Campus Tecomán, Km. 40 Autopista Colima-Manzanillo, CP 28100, Colima, México. E-mail: mabl@cgic.ucol.mx.

"Status of the knowledge of bombycoid moths in México (Lepidoptera: Mimallonoidea, Lasiocampoidea and Bombycoidea)."

8:42-9:02 a.m.
Pozo, Carmen[1] and Armando Luis-Martínez[2], McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, SW 34th. Street and Hull Road, Gainesville FL, PO Box 112710, 2 Museo de Zoología "Alfonso L. Herrera", Departamento de Biología Evolutiva, Fac. de Ciencias, UNAM. cpozo@flmnh.ufl.edu

"Butterfly Phenology of Calakmul and Comparison between two Dry Tropical Forests in Mexico"

9:03-9:23 a.m.
Prado-Cuellar, Blanca, R., Noemí Salas-Suárez , and Carmen Pozo, Avenida Centenario km 5.5, CP 77900, Apdo. Postal 424, Chetumal, Quintana Roo, México, MEXICO; bprado@ecosur-qroo.mx

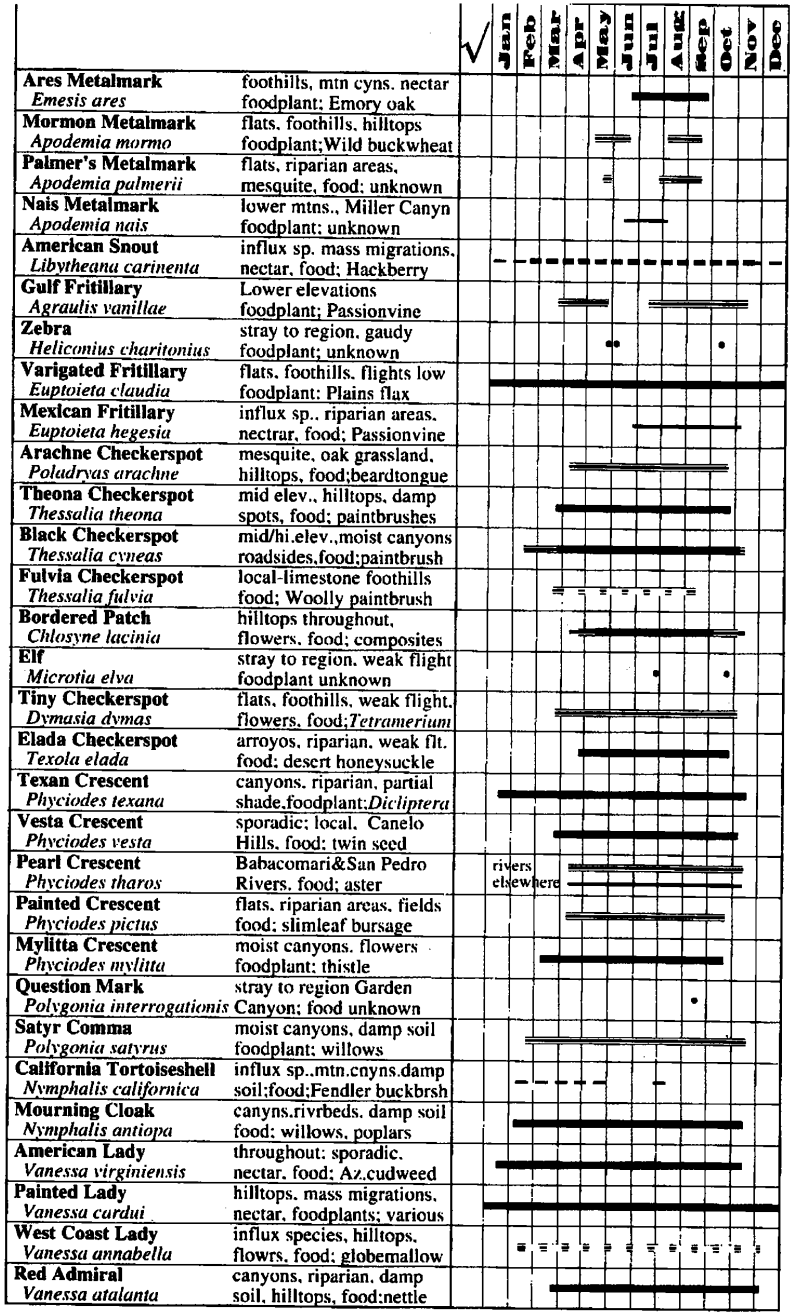
"The Butterfly (Papilionoidea and Hesperioidea) Collection of the Zoology Museum of ECOSUR"

9:24-9:44 a.m.
Salinas-Gutiérrez, José Luis [student] **& Aixchel Maya M.** [student] **, Avenida Centenario km 5.5, CP 77900, Apdo. Postal 424, Chetumal, Quintana Roo, México, MEXICO**

"Butterflies (Papilionidae, Pieridae and Nymphalidae) of the Evergreen Tropical Forests of México." [student paper]

9:45-10:05 a.m.
Trujano-Ortega, Marysol [student]**, and M.A. Luis-Martínez, Cumbres de Maltrata 648. Col. Américas Unidas C.P. 03610, Mexico; marysol_trujano@yahoo.com.mx**

"Panbiogeographic analysis of Papilionidae and Pieridae (Lepidoptera: Papilionoidea) in Mexico" [student paper]



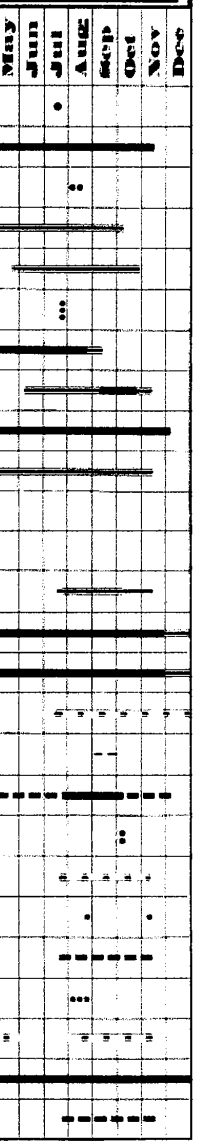
Ares Metalmark *Emesis ares*	foothills, mtn cyns. nectar foodplant: Emory oak
Mormon Metalmark *Apodemia mormo*	flats, foothills, hilltops foodplant;Wild buckwheat
Palmer's Metalmark *Apodemia palmerii*	flats, riparian areas, mesquite, food: unknown
Nais Metalmark *Apodemia nais*	lower mtns., Miller Canyn foodplant: unknown
American Snout *Libytheana carinenta*	influx sp. mass migrations, nectar, food: Hackberry
Gulf Fritillary *Agraulis vanillae*	Lower elevations foodplant; Passionvine
Zebra *Heliconius charitonius*	stray to region, gaudy foodplant; unknown
Varigated Fritillary *Euptoieta claudia*	flats, foothills, flights low foodplant: Plains flax
Mexican Fritillary *Euptoieta hegesia*	influx sp., riparian areas, nectrar, food; Passionvine
Arachne Checkerspot *Poladryas arachne*	mesquite, oak grassland, hilltops, food;beardtongue
Theona Checkerspot *Thessalia theona*	mid elev., hilltops, damp spots, food; paintbrushes
Black Checkerspot *Thessalia cyneas*	mid/hi.elev.,moist canyons roadsides,food;paintbrush
Fulvia Checkerspot *Thessalia fulvia*	local-limestone foothills food; Woolly paintbrush
Bordered Patch *Chlosyne lacinia*	hilltops throughout, flowers, food; composites
Elf *Microtia elva*	stray to region, weak flight foodplant unknown
Tiny Checkerspot *Dymasia dymas*	flats, foothills, weak flight, flowers, food;*Tetramerium*
Elada Checkerspot *Texola elada*	arroyos, riparian, weak flt. food: desert honeysuckle
Texan Crescent *Phyciodes texana*	canyons, riparian, partial shade,foodplant:*Dicliptera*
Vesta Crescent *Phyciodes vesta*	sporadic; local, Canelo Hills, food: twin seed
Pearl Crescent *Phyciodes tharos*	Babacomari&San Pedro Rivers, food; aster
Painted Crescent *Phyciodes pictus*	flats, riparian areas, fields food: slimleaf bursage
Mylitta Crescent *Phyciodes mylitta*	moist canyons, flowers foodplant: thistle
Question Mark *Polygonia interrogationis*	stray to region Garden Canyon; food unknown
Satyr Comma *Polygonia satyrus*	moist canyons, damp soil foodplant: willows
California Tortoiseshell *Nymphalis californica*	influx sp..mtn.cnyns.damp soil;food;Fendler buckbrsh
Mourning Cloak *Nymphalis antiopa*	canyns.rivrbeds, damp soil food: willows, poplars
American Lady *Vanessa virginiensis*	throughout: sporadic, nectar, food: Az.cudweed
Painted Lady *Vanessa cardui*	hilltops, mass migrations, nectar, foodplants; various
West Coast Lady *Vanessa annabella*	influx species, hilltops, flowrs, food: globemallow
Red Admiral *Vanessa atalanta*	canyons, riparian, damp soil, hilltops, food:nettle

BUTTERFLIES OF FORT HUACHUCA

DATE: _____

NOTES: _____

_____



BUTTERFLIES_____		√	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
White-dotted Cattleheart *Parides alopius*	Mexican stray;1 US record Garden Canyon								•					
Pipevine Swallowtail *Battus philenor*	low elevations, damp spots nectar, food: Indian-root													
Polydamas Swallowtail *Battus polydamas*	Garden Canyon stray, foodplant: unknown								••					
Black Swallowtail *Papilio polyxenes*	low/mid-elev., damp spots hilltops, food: umbels													
Giant Swallowtail *Papilio cresphontes*	lower canyons and flats. nectar, food; rues,esp.citrus													
Broad-banded Swllwtail. *Papilio astyalus*	Lyle and Garden Canyons foodplant: unknown								:					
Two-tailed Swallowtail *Papilio multicaudatus*	moist mtn.canyons, gaudy nectar, wild cherry & ash													
Chiricahua White *Neophasia terlootii*	mid/high-elev., pines foodplant:pines													
Checkered White *Pontia protodice*	lower elevations. nectar; foodplant; mustards													
Cabbage White *Pieris rapae*	residential; riparian; alien foodplant; mustards													
Pearly Marble *Euchloe hyantis*	foothills,grassland,hilltops 1 brood, food: mustards													
Desert Orangetip *Anthocharis cethura*	low elevations foodplant: mustards													
Clouded Sulphur *Colias philodice*	low elevations, alfalfa foodplant; legumes													
Orange Sulphur *Colias eurytheme*	cultivated fields, flowers flies all year, food; legumes													
Southern Dogface *Colias cesonia*	flowers, damp soil. foodplant; daleas													
White Angled-Sulphur *Anteos chlorinde*	Garden Cyn.influx species foodplant unknown								-	-	-	-	-	-
Yellow Angled-Sulphur *Anteos maerula*	Garden Cyn.influx species foodplant unknown									-	-			
Cloudless Sulphur *Phoebis sennae*	influx species, monsoons puddle parties. food:sennas					-	-	-	-	-	-	-	-	-
Orange-barred Sulphur *Phoebis philea*	Garden Cyn. stray to region food; Senna leptocarpa										:			
Large Orange Sulphur *Phoebis agarithe*	influx species with sennae flights, food unknown								-	-	-	-	-	
Tailed Sulphur *Phoebis neocypris*	Gardn&Sawmill Cyn.stray, foodplant unknown									•		•		
Lyside Sulphur *Kricogonia lyside*	unidirectional flight, influx species; food unknown								-	-	-	-	-	
Barred Yellow *Eurema daira*	stray to region, low/middle elevation; food unknown									•••				
Boisduval's Yellow *Eurema boisduvalianum*	influx sp. flies under cover food; Senna leptocarpa				-	-	-				-	-	-	-
Mexican Yellow *Eurema mexicanum*	nectar, puddle parties foodplant;White-ball acacia													
Tailed Orange *Eurema proterpia*	influx species, dimorphic. foodplant; Senna leptadenia								-	-	-	-	-	-

…….. **Break 10:06-10:21 a.m.** ……

10:22-10:42 a.m.
Miller, Jacqueline Y and: Lee D. Miller, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611-2170; jmiller@flmnh.ufl.edu

"Distributional ranges of selected Mexican Lepidoptera."

10:43-11:03 a.m.
Miller, Lee D. and Jacqueline Y. Miller, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611-2170; lmiller@flmnh.ufl.edu

"Lepidoptera Biodiversity in Mexico: A Case for Sympatric Speciation."

11:04-11:24
Warren, Andrew D., Department of Zoology, Oregon State University., Corvallis, OR 97331; Hesperioidea@yahoo.com

"Biodiversity Studies on Mexican Hesperioidea." [student paper]

…… **11:24-12:59 p.m. Lunch on your own** ……

1:00 – 3:00 p.m. Special joint authors' book-signing sponsored by BioQuip, Inc.

3:15-5:00 p.m. Special plenary session of invited presentations

3:15-3:40 p.m.

Brower, Andrew V.Z., Department of Zoology, Oregon State University, Corvallis, OR 97331; browera@science.oregonstate.edu

"Molecular Systematics of Butterflies"

3:41-4:05 p.m.
Heath, Fred, 5443 Camino Compadre, Camarillo, CA 93012; fred.heath@earthlink.net

"Those Unique Butterflies of Southern California."

4:06-4:30 p.m.
Pyle, Robert M., 369 Loop Road, Gray's River, WA 98621; tlpyle@willapabay.org

"Nabokov's Ecstasy: Butterfliesas Bota nists."

4:31-5:00 p.m.
Kaufman, Kenn, Rocky Ridge, OH; kenn.kaufman@worldnet.att.net

"The Pros and Cons of Promoting Butterfly Appreciation."

Friday Evening

5:30 -10:00 p.m. Barbecue, Apache Point Ranch

[Directions (car pool) --From the Windemere go south on SR92 4.4 miles to Ramsey Canyon Road. Turn west and go 0.9 miles to Richards Road on the left. There is a sign here for Apache Point Ranch. Turn left, south, on Richards Road drive to the end of the road, app 0.4 mile, to the Ranch.]

Introductory program of musings and tunes by the inestimable John Acorn.

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Saturday, August 6th

9:00 a.m.-Noon: Poster displays, Executive Board Room, Windemere Conference Center & Hotel [see abstracts]

9:00 a.m.-1 p.m.: Vendor Displays and Sales: Mesquite Room, Windemere Conference Center & Hotel,
Vendors : BioQuip Products, Inc.; Brunton Optics; ButterflyBuzz/NABA Sales; Don Hahn/Natural History Books; El Cielo Butterfly Festival; LepTraps; Stevan Logsdon/Wildlife Artist; Swarovski Optik; Wildlife Computing; Wren Designs

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Presentations: Ocotillo + Saguaro Room, Windemere Hotel and Conf. Center

8:10-8:20 a.m.: Daily announcements. Paul Opler

Contributed papers, Morning Session, Moderator, Susan Weller

8:21-8:35 a.m.
Arnold, Sarah E.[1] [student], Frank C. Schroeder[2], and Scott R. Smedley[1]
[1]Department of Biology, Trinity College, Hartford, CT 06106, USA and [2]Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY 14853, USA; sarah.arnold@trincoll.edu
"An Ecological and Chemical Examination of Glandular Hairs in Two Pierid Butterfly Caterpillars (*Pieris virginiensis* and *Anthocharis midea*)." [student paper]

8:36-8:50 a.m.
Barber, Jesse R., Wake Forest University, Winston-Salem, NC
"Acoustic signal complexity and timing in tiger moths' responses to simulated bat attack." [student paper]

FORT HUACHUCA, ARIZONA BUTTERFLY LIST

Welcome to Fort Huachuca! Established in 1877 as a cavalry outpost, the post now comprises 73,272 acres. The Fort houses the Army Intelligence Center, Army Signal Command, and Joint Interoperability Test Command. Several specialized units, including the 111th Military Intelligence and 11th Signal Brigades are also on post. About 10,000 military and civilian employees and 5,000 dependents work and live on Fort Huachuca.

The Military Reservation is in the San Pedro Valley and the Huachuca Mountains. This rugged and diverse range of forested ridges and well watered canyons is surrounded by grassland and desert scrub. Garden, Sawmill and Scheelite Canyons are widely known for butterflies, birds and wildflowers. Montane, pine/oak woodland and grassland habitats provide an amazing variety of vegetation and wildlife.

Fort Huachuca Wildlife Office provides professional natural resource management to maintain high-quality training lands that support the military mission. Resources on Fort lands are managed to protect native plant and animal populations and to provide public recreation and education. **No material may be removed from the installation.** For information call 520-533-7084.

Wiley, Bruce, 4 Maplewood Drive, Kennebunkport, ME 04046; bcllsk@gwi.net
"Peculiar Behavior in Newly-eclosed Danaus plexippus Larvae."

ABSTRACT: In about 2/3 of observed newly eclosed Danaus plexippus (monarch) larvae, a peculiar behavior has been documented. Shortly after returning to its empty eggshell and eating part of it, the larva will lie at rest, then stiffen, and form itself into a "U" configuration. Bringing its anterior and posterior ends together in this posture, it will then anoint the dorsum of its posterior head capsule, or of its proximal segments, with a droplet of clear fluid which has appeared at its anal cleft. Color videomicroscopic documentation of this behavior will be shown in several larvae, in hopes of stimulating discussion of its significance.

Williams, Ernest H., Department of Biology, Hamilton College, Clinton, New York 13323 ewilliam@hamilton.edu
"The conservation status of Gillett's Checkerspot, *Euphydryas gillettii*"
ABSTRACT: Gillett's checkerspot, *Euphydryas gillettii,* is found from western Wyoming through Idaho and Montana into Alberta and British Columbia. Most often, only dispersers or small colonies are seen, although larger populations are occasionally encountered in montane meadows. In 2002 and 2003, I repeated the distributional survey I had made during 1982-1984 (J. Lep. Soc. 42:37-45) and found that several former populations had died out. At each of these sites, the vegetation had changed through succession, lowering habitat quality for the butterflies. At four southern and lower latitude sites, the habitat had dried noticeably, implicating global warming in the change. The known range of *E. gillettii* has been shifting with the discovery of northern sites and the loss of southern ones.

Zaspel, Jennifer M., Emily V. Saarinen, and Alejandro Barro [students] Department of Entomology and Nematology University of Florida, McGuire Center for Lepidoptera and Biodiversity University of Florida, La Universidad de La Habana
"The *Virbia* of Cuba including a list of the specimens in the Instituto de Ecología y Systemática and Fernando de Zayas Collections (Lepidoptera: Arctiidae)." [poster]

ABSTRACT: The tiger moth genus *Virbia* Walker (Arctiinae: Arctiini) can be found across the New World. While many *Virbia* species are broadly distributed throughout the Americas, some species have highly restricted distributions and are only known from very specific localities. In this study, we catalogued the *Virbia* species only known to occur in Cuba. Locality information from specimens of *Virbia disparalis, V. heros*, *latus*, *V.* and *V. pallicornis* from the Instituto de Ecología y Systemática and Fernando de Zayas collections were databased and overlain with existing map layers of Cuba. GIS analytical methods allowed us to measure species' distributions in Cuba and corresponding habitat types. The resulting database and maps will be combined with a preexisting *Virbia* database consisting of over 12,000 specimens from collections in the United States and Canada.

Ylla, Josep, Richard S. Peigler, and Akito Y. Kawahara, Department of Entomology, University of Maryland, College Park 20742; kawahara@umd.edu
"Total evidence phylogenetic analysis of the of the Moon Moths combining morphology, molecules, and mehavior (Lepidoptera: Saturniidae)."

ABSTRACT: A phylogenetic analysis of sixteen moon moth species was conducted using morphology, behavior, and molecules. Morphological and behavioral data were comprised of 93 characters from the larva, pupa, cocoon, and adult of all ingroup species and two outgroups. We also included 2,662 nucleotides from elongation factor 1-alpha (EF1-α) and dopa decarboxylase (DDC) protein coding nuclear genes of six ingroups and the two outgroups. Both data types were analyzed separately, compared, and combined. The total evidence analysis including all characters reveals the following generic relationships: (outgroups (*Argema* (*Graellsia* + *Actias*))). Character evolution indicates that the short hindwing tail evolved once and lengthened multiple times in different lineages of moon moths.

8:51-9:05 a.m.
Blackiston, Douglas J., Martha R. Weiss[1], and Elena M. Silva Casey[1], Georgetown Univ., Washington, DC 20057.
"Can a caterpillar learn something a moth will remember?" [student paper]

9:06-9:20 a.m.
Douglas, Jonathan M. , 7131 Oran SE, Cascade Terrace, Grand Rapids, Michigan, 49546
"Light Habitats and the Functional Sensory Ecology of Polarized Iridescence in Neotropical Butterflies." [student paper]

9:21-9:35 a.m.
Garrett, Sarah, Biology Department, Wake Forest University, Winston-Salem, NC; garrsee3@wfu.edu
"Shifts in the usage of ultrasound by three tiger moths: *Cycnia tenera, Empyreuma affinis*, and *Syntomedia epilais* (Lepidoptera: Noctuoidea: Arctiidae)." [student paper]

9:36-9:50 a.m.
Kunte, Krushnamegh [student], Section of Integretive Biology, University of Texas at Austin, Austin, TX 78712-0253; krushnamegh@mail.utexa.edu
"Evolution of Proboscis Length in Butterflies: Allometric Growth, Flower Handling Time, and Contraints on Proboscis Length." [student paper]

9:51-10:05 a.m.
Snell-Rood, Emilie C.[student], **and Daniel R. Papaj, University of Arizona, Department of Ecology and Evolutionary Biology, 1041 East Lowell St. BSW Rm. 310, Tucson AZ 85721, emilies@email.arizona.edu**
"Learning signals within sensory environments: Does host cue learning in butterflies depend on background?" [student paper]

…….. 10:06-10:21 a.m. Break …….
10:22-10:36 a.m.
Oliver, Jeffrey C., Department of Entomology, University of Arizona, Tucson, AZ 85721; jcoliver@email.arizona.edu
"Molecular systematics of the *Lycaena xanthoides* species complex (Lepidoptera: Lycaenidae)." [student paper]

10:37-10:51 a.m
Rendell, Douglas M. [1], Jennifer R. Tetreault[1], Frank C. Schroeder[2], and Scott R. Smedley[1], [1]Department of Biology, Trinity College, Hartford, CT 06106, USA and [2]Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY 14853, USA. (douglas.rendell@trincoll.edu)
"A Chemical, Ecological, and Taxonomic Study of Glandular Hairs in Pierid Butterfly Caterpillars ." [student paper]

10:52-11:06 a.m.
Roe, Amanda, Dept. of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA; aroe@ualberta.ca
"The effects of time and preservation techniques on DNA quality in Lepidoptera." [student paper]

11:07-11:21 a.m.
Saarinen, Emily [student**], Jaret Daniels, and Andrei Sourakov, Department of Entomology and Nematology, University of Florida and McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville.**
"The Miami Blue Butterfly: a year in review and look at future research." [student paper]

11:22-11:36 a.m.
Schmidt, Chris and Felix Sperling, Dept. of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA; bjorn@ualberta.ca
"Phylogeny of *Grammia* Tiger Moths: ecological and biogeographical implications." [student paper]

11:37-11:51 a.m.
Prudic, Katy, Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ 85721; klprudic@email.arizona.edu
"The Viceroy is not a Batesian Mimic: a Chemical Mechanism." [student paper]

11:52-12:06 a.m.
Ritland, David B., Department of Biology, Erskine College, Due West, SC 29639; dritland@erskine.edu
"Mimic to Co-Model: Evolutionary Role-Switching by Viceroy Butterflies (*Limenitis archippus*)."

…… 12:07-1:30 p.m. Lunch on your own …….

Afternoon session, Moderator, Felix Sperling

1:31-1:41 p.m. "Homology in Lepidoptera"
Invited papers organized by SyblBuchelli and Jennifer Zaspel
Introduction and moderated by Felix Sperling, Department of Biology, University of Alberta,

1:42-2:02 p.m.
Goldstein, Paul Z., Florida Museum of Natural History, McGuire Center for Lepidoptera and Biodiversity, University of Florida, Gainesville
"Phylogenetic Systematics and the Future of Homology."

Warren, Andrew D., Department of Zoology, Oregon State University., Corvallis, OR 97331
Hesperioidea@yahoo.com

" Molecular Systematics of the Skipper Butterflies (Lepidoptera: Hesperiidae)."

ABSTRACT: Skipper butterflies comprise over 4000 species, in about 660 genera, which are usually grouped into seven subfamilies. The higher-level relationships between the subfamilies and tribes (or the generic groupings of Evans 1937, 1949, 1951, 1952, 1953, 1955) within the family have not been well studied at the global-level, since most systematic works have focused exclusively on certain faunal regions. I will discuss recent progress to improve our understanding of the phylogeny of the Hesperiidae of the world, based on analyses of three gene regions (COI, *wingless*, and *Ef-1a*), from over 230 genera of Hesperiidae representing all subfamilies, tribes, and other major generic groupings. The very latest results will be discussed, including the placement of several enigmatic lineages.

Watanabe, Michihito, Kawaguchiko Field Center, 6603 Funatsu, Fujikawaguchiko-machi, Yamanashi-ken, 401-0301 Japan and Yasuo HAGIWARA; Showa University, 4562 Kamiyoshida, Fujiyoshida-shi, Yamanashi-ken, 403-0005 sizen@mfi.or.jp

"On the new type of symbiosis between Reverdin's Blue and *Camponotus* ant."

ABSTRACT: We have found a new type of symbiosis between 'facultative' Reverdin's Blue (Licaeides argyrognomon) and the tending ant Camponotus japonicus. A virtual 'One on One' system has been disclosed; a specific individual of Reverdin's Blue is tended by one or few Primary Tending Ants (PTAs) and some Secondary Tending Ants (STAs) in the same colony of C. japonicus in all stages through 2nd instar larva to adult. This ant species *C. japonicus*, well known for tending to obligate *Niphanda fusca* in Japan, does not carry a larva of Reverdin's Blue to its nest. A Reverdin's Blue larva enters the ant's nest hole by itself with PTA and STAs in order to pupate there and to receive tending by the ants until emergence, without being fed by the ants.

Weiss, Martha R., Georgetown University, Washington D.C., 20057
"Learning by lepidopterans."

ABSTRACT: Cognitive ability isn't necessarily the first thing that comes to mind when we think of Lepidoptera; however, moths, butterflies, and even caterpillars readily learn a variety of cues in a range of behavioral contexts. A recent explosion of research on lepidopteran learning has revealed, among other things, that moths can learn colors and recognize patterns, that butterflies can learn odors, and that caterpillars can respond to both positive and negative associative training. Taken together with their ability to learn shapes and spatial locations, these recent results suggest that the learning abilities of lepidopterans rival (or perhaps exceed!) those of bees.

Weller, Susan J., Dept of Entomology and Bell Museum of Natural History, University of Minnesota, St. Paul, MN 55108. welle008@umn.edu
"What's in a name? Would a bursa, by any other name, still be a bursa?"

ABSTRACT: Many morphological studies focus on the complex ornamentation and difficult homologies of male genitalia. Typically overlooked are the equally diverse genital modifications occurring in many ditrysian females, particularly Noctuoidea. Female genitalia may not exhibit the numerous variations found in males, yet they can provide phylogenetic characters diagnostic at the species or generic level or above. Homology issues need to be addressed in females just as urgently as in males. In this talk, I will illustrate the various conundrums that face the morphologist attempting to code ditrysian female genitalia for phylogenetic analysis, and explain our approach to testing these primary homology statements through modified transformation series analysis. This talk will provide a springboard for the community to begin work on our annotated glossary of Lepidopteran morphology.

easy to tell whether you are looking at the same gene or a duplicated copy. But then the problem of sequence "saturation" rears its ugly head, where multiple substitutions of bases can obscure an original phylogenetic pattern. I will describe some of the analytical tricks that are used to try (with varying success) to compensate for saturation and other problems with homology assessment of DNA data in a phylogenetic context. In addition, I will describe "molecular morphology", a very promising way to wring new kinds of homologies from DNA sequence data.

Stillwaugh, Don M., Pinellas County Environmental Lands Division, Tarpon Springs, Florida; dstillwa@pinellascounty.org

"Lepidoptera Inventory at Brooker Creek Preserve, Tarpon Springs, Florida." [poster]

ABSTRACT: Located in west central Florida, Brooker Creek Preserve is an 8,300-acre natural area managed by Pinellas County Department of Environmental Management's Environmental Lands Division (ELD). Since 1998, a volunteer-based butterfly inventory and monitoring program, developed by the ELD's Pinellas County Biological Field Research Station, has provided information on 68 butterfly species found on the Preserve. In 2005 ELD researchers began a macro-moth inventory project. A variety of ecosystems including pine flatwoods, oak hammocks, cypress domes, maple swamps, freshwater marshes and old fields are being surveyed. Methods include blacklight traps, blacklighting using sheets, bait traps and sugar bait trails. Increased knowledge relating to the presence/absence and distribution of our Lepidopteran fauna will enable us to incorporate this taxon into our ongoing management-oriented research.

Trujano-Ortega, Marysol [student], and M.A. Luis-Martínez, Cumbres de Maltrata 648. Col. Américas Unidas C.P. 03610 marysol_trujano@yahoo.com.mx

"Panbiogeographic analysis of Papilionidae and Pieridae (Lepidoptera: Papilionoidea) in Mexico."

ABSTRACT: Butterflies are a model group for use in studies of conservation priority. We compared different patterns of distribution of 140 species and subspecies of swallowtail, white and sulphur butterflies in Mexico, using a panbiogeographic method and parsimony analysis of endemicity (PAE). We obtained 20 generalized tracks in three patterns: Neotropical, Californian and Nuevo León-Tamaulipan. These patterns overlap in order to obtain Sierra Madre Oriental node. This node represents a very diverse area and contact zone of different taxonomic elements and origins, indicating a complex origin. The Sierra Madre Oriental node coincides with nodes for other taxa. Sharing of this information with ANP (Priority Natural Area) suggests that more studies on the butterflies of northern Mexico are needed.

Warren, Andrew D., Department of Zoology, Oregon State University., Corvallis, OR 97331 Hesperioidea@yahoo.com

"Biodiversity Studies on Mexican Hesperioidea."

ABSTRACT: Ten years of biodiversity surveys on the Hesperioidea of Mexico are summarized. Since 1994, field and museum research has resulted in the discovery of over 30 undescribed species of skippers in Mexico, and has confirmed over 750 total species of Hesperiidae in the country. In this presentation, about 20 undescribed (or recently described) Mexican skipper species are discussed and illustrated, including species of *Phocides*, *Codatractus*, *Zestusa*, *Celotes*, *Dalla*, *Piruna*, *Stinga*, *Atalopedes*, *Paratrytone*, *Euphyes*, *Atrytonopsis*, *Amblyscirtes*, *Vacerra* and *Aides*. Additionally, discussion and illustrations of two mega-Mexican genera, *Piruna* and *Paratrytone*, are provided, and some recent taxonomic changes in the Mexican Hesperioidea are discussed.

2:03-2:23 p.m

Sperling, Felix, Dept. of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA felix.sperling@ualberta.ca

"Homology assessment in Lepidoptera DNA characters."

……. 2:24-2:39 Break ……

2:40-3:00 p.m.

Weller, Susan J., Department of Entomology and Bell Museum of Natural History, University of Minnesota, St. Paul, MN 55108; welle008@umn.edu

"What's in a name? Would a bursa, by any other name, still be a bursa?"

3:01-3:21 p.m.

Solis, M. Alma, Systematic Entomology Laboratory, ARS, USDA, National Museum of Natural History, Washington, D.C.

"Reaping the Benefits of Homology Studies in the Pyraloidea."

Contributed papers:

3:22-3:36 p.m.

Masters, John, 26503 Hillsfall Ct., Newhall, CA 91321; quest4tvl@aol.com

"The Chiricahua White: Is it *Neophasia epyaxa* Strecker or *Neophasia terlooi*?"

3:37-3:51 p.m.

Simmons, R. B. and S. J. Weller, University of North Dakota, Dept. of Biology, Box 9019, Grand Forks, ND 58202, rebecca.simmons@und.nodak.edu

"The origin and evolution of mimetic type in tiger moths: More species & more data (Arctiidae: Arctiinae: Ctenuchini and Euchromiini)"

3:52-4:06 p.m.

Singer, Michael S., Biology Department, Wesleyan University, Middletown, CT 06459; msinger@wesleyan.edu

"Evidence for self-medication by an arctiid caterpillar."

4:07-4:21 p.m.

Smedley, Scott R. [1] (presenter), Frank C. Schroeder[2], Amy E. Schoenfeld[1], Sarah E. Arnold[1], and Rachael L. Currao[1, 1]Department of Biology, Trinity College, Hartford, CT 06106, USA and [2]Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY 14853, USA; scott.smedley@trincoll.edu

"Anointment of Cuticular Hairs with Tobacco Metabolites Protects a Larval Moth (*Heliothis virescens*) from Predation."

Saturday Evening
Joint All-Society Banquet
Grand Ballroom, Windemere Hotel and Conference Center

5:00-6:00 p.m. No-host/ Cash bar.
6:00-10:15 p.m. Banquet

***Recognitions**
Field trip leaders, Windemere staff, SEABA president Libby Sullivan, Hank Brodkin, Jim Brock, Mark Pretti, John Acorn, Moderators, Projectionists,.….
2006 Gainesville meeting, Tom Emmel
Awards: Becky Simmons
John Adams Comstock Award, Introduction by Ron Leuschner
William D. Winter Service Award
AlexanderKlots Award for best student poster
Clench Award for best student paper

Elizabeth "Libby" Sullivan, SEABA President, Acknowledgements: Where do we go from here?

Speaker, Lepidoperists' Society President, James Adams, "Why we do what we do."

Door Prize Drawing, Charles V. Covell

Sunday, August 7th

8:00-8:15 a.m. Break, Rolls and coffee

Contributed papers, Moderator, Jerry A. Powell

8:16-8:30 a.m
Brehm, Gunnar, Department of Animal Ecology I, University of Bayreuth, Universitaetsstrasse 30, 95447 Bayreuth, Germany, Gunnar_Brehm@yahoo.com
"Montane Andean rain forests are a global diversity hotspot of geometrid moths."

8:31 -8:45 a.m.
Papaj, Daniel R., and V. Newsom, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ 85721; papaj@email.arizona.edu
"Use of a larva's aposematic signal in larval recognition by oviposition pipevine swallowtail butterflies."

that the droplets serve a defensive role: contact with droplet-bearing caterpillars increased ant cleaning behavior and reduced subsequent ant-caterpillar interaction relative to contact with caterpillars lacking droplets. The droplets contain a mixture of duvane diterpenes, and further bioassays showed that these compounds account for the droplets' anti-predator activity.

Snell-Rood, Emilie C.[student], and Daniel R. Papaj, University of Arizona, Department of Ecology and Evolutionary Biology, 1041 East Lowell St. BSW Rm. 310, Tucson AZ 85721, emilies@email.arizona.edu
"Learning signals within sensory environments: Does host cue learning in butterflies depend on background?"

ABSTRACT: Insects must detect stimuli embedded in a sensory environment of competing stimuli. Do host-searching butterflies 1) learn cues dependent on the sensory environment, and 2) learn characteristics of the background, such that performance on novel tasks in the same sensory environment is facilitated? Females of *Battus philenor* (Papilionidae: Lepidoptera) were trained to different colored and shaped oviposition targets, against different background colors. Individuals trained to colors on a brown background but tested on a green background performed significantly worse than control individuals (trained to the same colors, against a green background) in both color memory (green and red) and shape learning. This suggests that cue learning depends on an insect?s sensory environment.

Snyder, John A., Dept. of Biology, Furman University, Greenville, SC 29613 john.snyder@furman.edu
"A Database and Checklist for South Carolina Moth Species."

ABSTRACT: A web-searchable database/checklist has been constructed to provide documentation of the moth species that have been collected or reliably observed in South Carolina (USA). Initial information was gathered by visits to the appropriate local and regional collections and the collection at the U. S. National Museum of Natural History. A continuously updated resource, the database currently contains records from over 10,200 specimens chosen on the basis of taxon, county of collection, and date of collection. A total of 1,620 species has been documented. Seventy one percent of the species that literature sources indicate likely to occupy this region have actually been identified in the state. However, over 250 species were found that were not anticipated from literature sources. The database can be accessed at ht://facweb.furman.edu/~snyderjohn/sc-moths/.

Solis, M. Alma, Systematic Entomology Laboratory, ARS, USDA, National Museum of Natural History, Washington, D.C.
"Reaping the Benefits of Homology Studies in the Pyraloidea."

ABSTRACT: Early studies in the Pyraloidea based on external similarities resulted in taxa that were misplaced: pyraloids in other superfamilies and species of other superfamilies in the Pyraloidea. It was not until the 20th century that pyraloidologists started to look beyond external similarities and explore internal structures. Due to the large number of pyraloid taxa, species identities and relationships worldwide based on a concept of morphology have far to go. Basic comparative morphological work in the genitalic and tympanic structures has brought greater clarity to higher-level taxa in the Pyraloidea. This presentation will address questions of homology based on morphological research by recent authors in Pyraloidea, and also touch on future areas of research based on morphology of immatures and molecular characters.

Sperling, Felix, Dept. of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA; felix.sperling@ualberta.ca
"Homology assessment in Lepidoptera DNA characters."

ABSTRACT: One positive aspect of using DNA sequence data is that we don't have some of the problems that are encountered with homology assessment in morphological characters. In fact, it may be relatively

Simmons, R. B. Simmons and S. J. Weller, University of North Dakota, Dept. of Biology, Box 9019, Grand Forks, ND 58202, rebecca.simmons@und.nodak.edu

"The origin and evolution of mimetic type in tiger moths: More species & more data (Arctiidae: Arctiinae: Ctenuchini and Euchromiini)"

ABSTRACT: Tiger moths in the ctenuchine-euchromiine clade (C-E clade) display a wide variety of coloration types, ranging from cryptic to mimetic. Early workers (i.e. Hampson, Draudt) placed non-mimetic ctenuchines as ancestral to the remaining members of the C-E clade. More recently, Simmons and Weller (2001) found evidence that these non-mimics are neither ancestral nor basal to the C-E clade, indicating that mimetic coloration may have evolved several times independently within this lineage. Here, we revisit these issues with an expanded data set from Simmons and Weller (2001). Using mitochondrial DNA, we will discuss the generic relationships, the monophyly of the Ctenuchini and Euchromiini, and the origin and evolution of mimetic type.

Simonsen, Thomas J., Department of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA

"The wing vestiture of the non-diitrysian Lepidoptera: Evolutionary aspects and phylogenetic implications."

ABSTRACT: Though more than 20 lepidopteran autapomorphies are known today, the most striking and immediately recognizable is the presence of tiny, flattened scales that cover the wings. Despite the facts that the non-distysian grade comprises only 1% of all known Lepidoptera, the wing vestiture and scale morphology show considerable variation within this grade. Based on electron microscopic studies of the 25 non-ditrysian families, I give a short I give a short introduction to the considerable variation there is in wing vestiture and scale ultrastructure and illustrate the most important evolutionary and phylogenetic aspects in early Lepidoptera evolution.

Singer, Mike, Biology Department, Wesleyan University, Middletown, CT 06459; msinger@wesleyan.edu

"Evidence for self-medication by an arctiid caterpillar."

ABSTRACT: Caterpillars of the arctiid, *Grammia geneura*, gain resistance against parasitoids by feeding on host-plants containing pyrrolizidine alkaloids (PAs) or iridoid glycosides. Here we present evidence that parasitism increases the feeding response by *G. geneura* to these putative medicines. Parasitism increased caterpillar consumption of PA-impregnated filter paper, but not of sucrose-impregnated filter paper. Support for self-medication was strengthened by electrophysiological measures of the rate of action potential firing by taste neurons. Parasitism increased the firing rates of taste neurons in response to feeding stimulants (PAs and iridoid glycosides) characteristic of defensive host-plants. By contrast, parasitism was associated with reduced rates of firing in response to the representative deterrent plant chemical, caffeine. Parasitism did not change the gustatory responsiveness to the nutritional feeding stimulant, sucrose.

Smedley, Scott R. [1] (presenter), Frank C. Schroeder[2], Amy E. Schoenfeld[1], Sarah E. Arnold[1], and Rachael L. Currao[1]. [1]Department of Biology, Trinity College, Hartford, CT 06106, USA and [2]Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY 14853, USA. (scott.smedley@trincoll.edu)

"Anointment of Cuticular Hairs With Tobacco Metabolites Protects A Larval Moth (*Heliothis virescens*) From Predation."

ABSTRACT: Lepidopterans are renowned for their ability to sequester chemical defenses through larval ingestion of host plant compounds. We here report an apparently novel means of larval defense: anointment of the cuticle with host-derived secondary metabolites. Cuticular hairs on larvae of the noctuid moth *Heliothis virescens* acquire droplets of fluid when they brush against the glandular trichomes of their host tobacco (*Nicotiana tobacum*). Bioassays with predatory ants (*Crematogaster lineolata*) demonstrated

8:46-9:00 a.m

Lill, John T., Department of Biology, George Washington University, Washington, D.C. 20052; lillj@gwu.edu

"Ecological consequences of shelter-sharing by leaftying caterpillars."

9:01-9:15 a.m.

Watanabe, Michihito, Kawaguchiko Field Center, 6603 Funatsu, Fujikawaguchiko-machi, Yamanashi-ken, 401-0301 Japan and Yasuo HAGIWARA; Showa University, 4562 Kamiyoshida, Fujiyoshida-shi, Yamanashi-ken, 403-0005, Japan; sizen@mfi.or.jp

"On the new type of symbiosis between Reverdin's Blue and *Camponotus* ant."

9:16-9:31 a.m

Wiley, Bruce, 4 Maplewood Drive, Kennebunkport, ME 04046; bcllsk@gwi.net

"Peculiar Behavior in Newly-eclosed *Danaus plexippus* Larvae."

9:32-9:46 a.m.

Covell, Charles V., Jr., McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, Gainesville, Fl 32611-4378

"The Society Archives: some images of old friends and past meetings."

9:47-10:30 a.m.

Business meeting, Lepidopterists' Society

10:31-11:00 a.m.

Business meeting, 2006 Site selection, Pacific Slope Section, Lepidopterists' Society

Program Abstracts

Arnold, Sarah E.[1] (presenter), Frank C. Schroeder[2], and Scott R. Smedley[1]
[1]Department of Biology, Trinity College, Hartford, CT 06106, USA and [2]Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY 14853, USA. (sarah.arnold@trincoll.edu)

"An Ecological and Chemical Examination of Glandular Hairs in Two Pierid Butterfly Caterpillars (*Pieris virginiensis* and *Anthocharis midea*)."

ABSTRACT: Caterpillars of certain pierid butterfly species possess glandular hairs. In *Pieris rapae* and *Pieris napi*, these cuticular structures produce droplets containing mixtures of previously unknown lipids, and in *P. rapae* these compounds serve a defensive role against predatory ants. We have discovered that two additional species possess secretory hairs — *Pieris virginiensis*, a congener of the two previously studied species, and the more distantly related *Anthocharis midea*. We are currently determining whether the larval secretions of these two species play a defensive role and are characterizing their chemical composition.

Bagdonas, Karolis, Biology Dept., Sam Houston State University Huntsville, TX 77341-2116.

"Where have all the Lepidoptera gone? The strange summer of 2004 in northwestern Wyoming."

ABSTRACT: In spring and summer of 2004, the numbers of both butterflies and moths were greatly reduced from numbers seen in previous years in northwestern Wyoming. Many species were completely absent. Those species, which did fly, were greatly reduced in size, many about half normal size. Every family, genus, and species was affected. It appears that the extreme temperature changes and oscillating weather patterns of the previous several years affected every group of Lepidoptera in the Greater Yellowstone Ecosystem. The summer of 2004 was very moderate with frequent rains, so the landscapes were plush, green, and full of flowers throughout the summer. Perhaps during the summer of 2005 Lepidoptera will rebound.

Balcázar Lara, Manuel A.. Facultad de Biológicas y Agropecuarias, U. de Colima, Campus Tecomán, Km. 40 Autopista Colima-Manzanillo, CP 28100, Colima, México. E-mail: mabl@cgic.ucol.mx.

"Status of the knowledge of bombycoid moths in Mexico (Lepidoptera: Mimallonoidea, Lasiocampoidea and Bombycoidea)."

ABSTRACT. The so called "Bombycoid Complex" is a monophyletic lineage of three superfamilies (Mimallonoidea, Lasiocampidea and Bombycoidea) defined by five synapomorphies. The information associated with these taxa has never been compiled for Mexico. Updated checklists are available only for two of the six families present in the country. We summarize the information gathered towards the publication of catalogues for these groups. The number of species present in Mexico totals 656. This number is about 13% of the world's fauna for the bombycoids. This figure is surpassed by the families Bombycidae (27%), Sphingidae (18%) and Saturniidae (14%). On the other hand, taxa with richer faunas in the Old World tropics have lower percentages in our area (*i. e.* Eupterotidae 1%, Lasiocampidae 7%). Our knowledge about these groups is very uneven. For Saturniidae and Sphingidae there is a very high number of publications, revisions and checklists, and are among the best know insects in the Neotropics. On the other hand, besides descriptions of new taxa, general checklists and the information in classical books, there is almost no information for the reminder of the taxa in Mexico.

Salcedo, Christian, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, S.W. 34th Street and Hull Road, P.O. Box 112710, Gainesville, Fl 32611-8525 salcedo@ufl.edu

"The importance of color pattern in the speciation of *Heliconius heurippa* (Lepidoptera: Nymphalidae)." [student poster]

ABSTRACT: *Heliconius heurippa* represents a possible case of speciation associated to introgressive hybridization. This particular species presents a wing color pattern that combines genetic elements from its possible parental species: *H. melpomene* and *H. cydno*. Butterfly models were used in approach and courtship experiments to test if sexual selection associated to wing color pattern has influenced the speciation of *H. heurippa*. A total of five models were used built from real and paper wings that resembled *H. cydno*, *H. melpomene,* *H. heurippa*, *H. heurippa* modified, showing only red color, and *H. heurippa* modified, showing only yellow color. The results confirm that wing color pattern is very important in mate choice within these three species and in particular the "mixed" color pattern "cydno-melpomene" that posses *H. heurippa*. *H. melpomene* and *H. cydno* males showed preference towards its own color pattern in all cases. Following the same fashion, *H. heurippa* males preferred its own color pattern. This suggests that there is positive assortative mating leaded by wing color pattern for the three species under study and that the combination of colors that *H. heurippa* presents constitutes a mate choice signal. In conclusion, mate choice associated to wing color pattern is not only important to the precigotic reproductive isolation but also possibly played a keyrole in the origin of *H. heurippa* through hybridization between *H. melpomene* and *H. cydno*.

Sanderford, Mark V., 208 Mt. Vernon Ave., Danville, VA; oleander@gamewood.net

"Sound or Scent: courtship stimuli produce different flight patterns." [poster]

ABSTRACT. The courtship flight patterns of two unpalatable ctenuchine arctiid moths from Florida were videotaped and analyzed for differences. *Empyreuma affinis* males rely on scent in locating the females, and therefore would be expected to approach calling females from downwind. Males and females of *Syntomeida epilais*, on the other hand, employ an extended series of acoustic signals of the call-and-response type, which should enable males to approach from any direction, or even circle the female. Analysis of 22 *Empyreuma* and 24 *Syntomeida* videotaped (IR or backlit) male courtship flights with the Rayleigh test showed ($p < 0.05$) random directionality in the syntomeidan approaches, and a tightly-focused downwind directional bias in the empyreuman flight paths.

Schmidt, Chris and Felix Sperling, Dept. of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA bjorn@ualberta.ca

"Phylogeny of *Grammia* Tiger Moths: ecological and biogeographical implications." [student paper]

ABSTRACT: Members of the genus *Grammia* (Arctiidae) occur throughout North America, with notable species radiations in grassland and steppe habitats. *Grammia* and closely related genera appear to be basal groups within the large and ecologically diverse subfamily Arctiinae; a clearer picture of *Grammia* phylogeny in light of ecology and biogeography should therefore provide insight into the evolution of the complex acoustic and phytochemical ecology exhibited by tiger moths. A preliminary phylogeny of *Grammia* based on molecular data will be presented and discussed.

Rudolph, D. Craig, Charles A. Ely, Richard A. Schaefer, and J. Howard Williamson, U. S. Forest Service, Southern Research Station, 506 Hayter St., Nacogdoches, TX, 75965, crudolph01@fs.fed.us

"Shortleaf pine, fire, and butterflies: effects of ecosystem restoration on butterfly abundance in the Ouachita Mountains, Arkansas"

ABSTRACT: Managers of the Ouachita National Forest in west-central Arkansas are restoring the shortleaf pine-bluestem ecosystem on a landscape scale. Thinning of canopy trees and removal of most midstory stems followed by prescribed fire on a three year rotation results in an approximation of pre-European vegetation structure. We used linear transects to quantify butterfly abundance and diversity in treatment sites throughout the fire cycle, and in untreated control sites degraded by decades of fire suppression. Butterfly abundances were higher on treatment sites, especially in the first growing season following fire, than on control sites. The availability of nectar resources correlated with butterfly abundance, suggesting that recovery of the herbaceous understory following restoration leads to increased abundance of adult butterflies.

Saarinen, Emily, Jaret Daniels, and Andrei Sourakov, Department of Entomology and Nematology, University of Florida and McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville.

"The Miami Blue Butterfly: a year in review and look at future research." [student paper]

ABSTRACT: The Miami blue butterfly, *Cyclargus thomasi bethunebakeri*, is a state-endangered lycaenid endemic to Florida. A captive colony of Miami blues is currently under propagation at the University of Florida to provide individuals for reintroduction and to effectively safeguard the last naturally occurring population in South Florida. Since May 2004, over 2,500 individuals have been released into suitable habitat within Everglades and Biscayne National Parks with populations monitored on a monthly basis. Current field work has led to the discovery of new symbiotic ant partners while additional research has recently begun to examine the effects of mosquito control applications on butterflies and larvae. Future research will include an analysis of inbreeding depression and the development of molecular markers to evaluate genetic diversity in captive and field populations.

Salinas-Gutiérrez, José Luis [student] & Aixchel Maya M. [student] , Avenida Centenario km 5.5, CP 77900, Apdo. Postal 424, Chetumal, Quintana Roo, México, MEXICO

"Butterflies (Papilionidae, Pieridae and Nymphalidae) of the Evergreen Tropical Forests of México."

ABSTRACT: We evaluate the faunistic composition of three families of butterflies, Papilionidae, Pieridae and Nymphalidae in the high tropical evergreen forest of Mexico. Today this type of forest is distributed at the Lacandon forest in Chiapas, some fragments in Tabasco and Campeche, in los Tuxtlas, Veracruz, and in an area between the limits of the states of Chiapas, Oaxaca and Veracruz. We analyzed 12 areas using the parsimony algorithm, and we discuss the distribution using precipitation maps and biogeographic provinces. Thus far 392 species, representing about 51.8% of Mexico fauna of Papilionidae, Pieridae and Nymphalidae have been registered. Los Tuxtlas, Sierra de Juarez, Oaxaca, and Chajul, Chiapas, represented 44.6% of all the species reported for evergreen tropical forest in Mexico and constituted a group based on the algorithm for species richness.

Barber, Jesse R., Wake Forest University, Winston-Salem NC

"Acoustic signal complexity and timing in tiger moths' responses to simulated bat attack."

ABSTRACT: Tiger moths are attacked less than similar-sized eared moths in the night sky. Their good fortune rests upon a pair of sound-producing structures, the tymbals, allowing these moths to produce sound when pursued by bats. The jamming hypothesis for these sounds states that a jamming moth should respond late in the echolocation attack to maximize angular errors, while a moth warning of its nasty taste should call early to give the bat time to respond. Other laboratory work has shown that the more complex a moth's call, the larger the jamming effect. Therefore, the more complex the call, the later in the echolocation attack the moth should click. Here we present evidence from a tropical tiger moth assemblage that regardless of call structure, tiger moths respond at the same point in the bat attack.

Barrows, Edward M., Laboratory of Entomology and Biodiversity, Department of Biology, Georgetown University, Washington, D.C. 20057-1229 barrowsed@georgetown.edu

"How many Butterfly Species are in a Small Suburban Yard in the Eastern United." States? [poster]

ABSTRACT: This study examines rhopaloceran diversity in my 1045 square meter Piedmont suburban yard in 3,942,000 square kilometer Washington, D.C. area (WDCA). I manage my yard to be plant-species rich and highly arthropod friendly. Forty-two (38%) of the 102 WDCA butterfly species (Washington AREA Butterfly Club, 2004) appeared in the yard during 12 flight seasons (2 rare, 12 uncommon, 19 common, and 9 abundant species). Twenty-four (57%) of the 42 yard species had the same abundances (either common or uncommon) as those from the entire WDCA. The yard had more WDCA common species that uncommon ones (Chi-Squre test, *P* less than or equal to .01). At least 8 species had larvae in the yard, including the WDCA-uncommon *Battus philenor*. A small butter-friendly yard can harbor a notable number of butterfly species.

Blackiston, Douglas J., Martha R. Weiss[1], and Elena M. Silva Casey[1], Georgetown Univ., Washington, DC 20057.

"Can a caterpillar learn something a moth will remember?"

ABSTRACT. During metamorphosis, insects undergo a drastic re-organization of the body, involving widespread cell death and the generation of entirely new tissue. The extent to which the larval brain integrates into that of the adult is not yet known. The present study examines the ability of memory to persist from the larval to adult stage in the tobacco hornworm, *Manduca sexta*. Fourth instar larvae conditioned to avoid the odor of ethyl acetate demonstrated a significant avoidance of the odor when assayed for learning in a Y-choice chamber. These same larvae were assayed again as adults to determine whether the aversive association persisted through metamorphosis. A second experiment uses cell labeling techniques to examine the possibility of neuronal cell survival through metamorphosis as a mechanism for memory retention.

Bowers, Deane, Department of Ecology and Evolutionary Biology, University of Colorado, Boulder; 80309 deane.bowers@colorado.edu

"Checkerspot Chemical Defense: Importance of Host Plant and Life Stage."

ABSTRACT. Many species of checkerspot butterflies (tribe Melitaeini) sequester certain chemical compounds, iridoid glycosides, from their hostplants, often in very large amounts. These compounds make both larvae and adults unpalatable to potential predators. The Baltimore Checkerspot, *Euphydryas phaeton* (Nymphalidae) commonly uses two hostplant species, *Chelone glabra* (Scrophulariaceae), the native host plant, and *Plantago lanceolata* (Plantaginaceae), an introduced host plant. Rearing Baltimore checkerspot larvae on these two plant species showed that iridoid glycosides are sequestered from both species, and that

the amounts and kinds of iridoids sequestered differs depending on the hostplant species. Both larvae and adults contain iridoid glycosides and adult females also put iridoid glycosides into the eggs.

Brehm, Gunnar, Department of Animal Ecology I, University of Bayreuth, Universitaetsstrasse 30, 95447 Bayreuth, Germany, Gunnar_Brehm@yahoo.com

"Montane Andean rain forests are a global diversity hotspot of geometrid moths."

ABSTRACT: We examined biodiversity of geometrid moths in montane rain forests in southern Ecuador (Province Zamora-Chinchipe, 79°W, 04°S). Moths were sampled quantitatively using fluorescent tubes in an area that covers ca. 40 km^2 with 39 collecting sites (1040-2677 m a.s.l.) in the years 1999 – 2003. In addition, diurnal moths were collected qualitatively. A total of 1266 species were recorded, 63% of which were identified to named species, whereas the remainder are likely to include many undescribed species. Quantitative samples at light towers collected 35238 specimens representing 1223 species. The extrapolated species number for these data is 1420 (incidence coverage estimator). Twenty-one additional nocturnal species and 22 exclusively diurnal species were sampled at elevations between 1040 and 3100 m. The diversity of Geometridae documented here is much higher than anywhere else in the world. The number of recorded species corresponds to more than six percent of the known world fauna of geometrid moths. Our study emphasises the importance to protect the remaining montane Andean rain forests.

Brodkin, Priscilla, 3050 East Carr Canyon Road, Hereford, AZ 85615; hbrodkin@cox.net

"Butterflies of the Manu."

ABSTRACT: The road from Cuzco over and down the east slope of the Andes to the village of Atalaya on the Rio Alto Madre de Dios in the Amazon Basin of southeastern Peru is arguably the most exciting transect in the neotropics. Last September we were privileged to do this route sampling many of the butterflies on the way. From Atalaya we crossed the river to spend four days at Amazonia lodge whose mix of many microhabitats produced a mind-numbing number of butterfly species. We then traveled down stream to the Manu Wildlife Center, another spot of much interest to the lepidopterist. Priscilla Brodkin will share some of the images that she and her husband, Hank, took of these interesting species. Most of the species are identified, thanks to many of our friends. A few were not - and hopefully some of the audience can fill in the gaps.

Brower, Andrew V.Z., Department of Zoology, Oregon State University, Corvallis, OR 97331; browera@science.oregonstate.edu

"Molecular Systematics of Butterflies."

ABSTRACT: The effort to develop a comprehensive evolutionary tree for butterflies based on DNA sequences has come a long way in the past ten years. We have evolved from individuals working largely in isolation into a global network of collaborators working on complementary aspect of the problem of butterfly phylogeny. This talk will provide an overview of the relatively short history of butterfly molecular systematics, and present some recent highlights from work done by various members of this collaborative group. Trees for ithomiines, danaines, heliconiines, satyrines, nymphalines, and an exemplar study of butterflies as a whole will be presented.

Burns, John M., Dept. of Entomology, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560, burnsj@si.edu

" How well does DNA barcoding distinguish species of skipper butterflies (Hesperiidae)? [A question asked by Burns, Janzen, Hallwachs, Hajibabaei, and Hebert]"

ABSTRACT: Macrolepidoptera of the Area de Conservacion Guanacaste (ACG),

ants (*Crematogaster lineolata*), after contacting the secretion, responded with intense cleaning behavior and reduced larval contact. These morphological, chemical, and ecological findings are interpreted in light of a recent phylogeny of the Pieridae.

Richers, Kelly M., 3417 Carvalho Court, Bakersfield, CA 93311-1486 kerichers@wuesd.org

"The California, Arizona, and Nevada County Moth Lists, Making Progress and Expanding Horizons."

ABSTRACT: The California County Moth List has reached the 33,000 entry level and work has begun on the Arizona and Nevada County Moth lists. Arizona is in the preliminary stages of a state list for macromoths and the Nevada list is just beginning. Photography has also begun to compare museum images from one institution to another to validate species names and range. The project is becoming more sophisticated with these additions.

Ritland, David, Department of Biology, Erskine College, Due West, SC 29639; dritland@erskine.edu

"Mimic to Co-Model: Evolutionary Role-Switching by Viceroy Butterflies (*Limenitis archippus*)."

ABSTRACT: Ritland and Brower's "provocatively" titled paper, "The Viceroy Is Not a Batesian Mimic," referred to predicted contemporary *ecological* mimicry roles of certain viceroy and danaine butterflies. Moderately unpalatable viceroys and their danaine models both contribute to predator aversive conditioning, thus creating a relationship more akin to mutualistic Müllerian than to parasitic Batesian mimicry. The timeframe for acquisition of unpalatability by viceroys is not known, but I speculate that the viceroy initially evolved as a Batesian mimic of danaine models, and I present three lines of evidence supporting this view. I propose that viceroys have enhanced their storage and/or synthesis of defensive chemicals relatively recently due to hostplant shifts and concomitant decreases in unpalatability of their long-time models, monarchs and queens.

Roe, Amanda, Dept. of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA; aroe@ualberta.ca

"The effects of time and preservation techniques on DNA quality in Lepidoptera." [student paper]

ABSTRACT: Molecular systematics has become increasingly prevalent in the study of Lepidoptera and obtaining specimens with intact DNA is of great importance. A variety of methods exist for killing and preserving specimens, although optimal conditions are not always available, particularly in field conditions. A large body of anecdotal evidence suggests these techniques vary in their ability to preserve DNA. A systematic examination of the effect of time and preservation technique on both mitochondrial and nuclear DNA quality was conducted. The results of this study will ultimately provide technical recommendations to researchers and collectors wishing to gather material for molecular studies.

Rota, Jadranka, University of Connecticut, Storrs, CT 06269-3043; jadranka.rota@uconn.edu

"Evolution of Complex Morphological Characters in Metalmark Moths (Lepidoptera: Choreutidae)." [student paper]

ABSTRACT: The Choreutidae are a small microlepidopteran family with about 409 described species. They are found in all zoogeographic regions, but most of their diversity is in the tropics. The phylogenetic relationships within the family are unknown. In this presentation I will use a molecular tree of choreutid genera based on mitochondrial (COI) and nuclear (EF-1 alpha) gene sequences to examine the evolution of complex morphological characters, such as larval chaetotaxy, globally unique dorsal lacunae found in the pupal stage, and the antennal types of choreutid adults. When mapped on the tree, these characters show various degrees of homoplasy. In this talk I will discuss potential reasons for that.

Prado-Cuellar, Blanca, R., Noemí Salas-Suárez , and Carmen Pozo, Avenida Centenario km 5.5, CP 77900, Apdo. Postal 424, Chetumal, Quintana Roo, México, MEXICO bprado@ecosur-qroo.mx

"The Butterfly (Papilionoidea and Hesperioidea) collection of the Zoology Museum of ECOSUR.,"

ABSTRACT: The Zoology museum of ECOSUR was founded in 1990. In Mexico there are only four scientific butterfly collections, and our collection is the only one specialized in a tropical area of the country, the Yucatan Peninsula. It has 65,000 specimens representing 427 species in the superfamilies Hesperioidea and Papilionoidea. All the specimens have full data, including date, collector and locality with GIS coordinates and habitat information. The data have been captured in a catalog and in a data base using the Biotica software. Here we present some of the distributions of the endemic species to this area, maps of localities represented in the collection and a comparison of the families represented in the collection for the states of Quintana Roo, Campeche and Yucatan.

Prudic, Katy, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ 85721 klprudic@email.arizona.edu [student]

"The Viceroy is not a Batesian Mimic: a Chemical Mechanism." [student paper]

ABSTRACT: The Viceroy (*Limenitis archippus*) and Queen (*Danaus gilippus*) mimicry association was originally classified as Batesian but later classified as Müllerian using predator bioassay experiments. This reclassification has receieved mixed acceptance since the experiments did not eliminate the possibility that the Viceroy could be a gustatory as well as a visual mimic of the Queen. Using Gas chromatography and Mass spectrography, I characterized and quantified the chemical profiles of the Viceroy and the Queen. The chemical profiles are quite different between species, thus the Viceroy does not reradily appear to be a gustatory mimic of the Queen. Also, the Viceory emits phenolic compounds with potential defensive capabilities. In light of these results, the Müllerian reclassification by Ritland and Brower is a more accurate depiction of the Viceroy-Queen relationship.

Pyle, Robert M., 369 Loop Road, Gray's River, WA 98621; tlpyle@willapabay.org

"Nabokov's Ecstasy: Butterflies as Botanists."

ABSTRACT: This talk, illustrated with slides and readings, will explore the inseparability of plant study with that of butterflies and moths. I will show how a knowledge of the flora not only facilitates discovery, understanding, and management of
Lepidoptera populations, but also deepens our pleasure in their pursuit and
study. Besides becoming botanists ourselves, we can fruitfully encourage our
botanically minded friends to pay attention to leps as more than mere
predators.

Rendell, Douglas M. [1] (presenter), Jennifer R. Tetreault[1], Frank C. Schroeder[2], and Scott R. Smedley[1] /[1]Department of Biology, Trinity College, Hartford, CT 06106, USA and [2]Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY 14853, USA. (douglas.rendell@trincoll.edu)

"A Chemical, Ecological, and Taxonomic Study of Glandular Hairs in Pierid Butterfly Caterpillars ."

ABSTRACT: The vulnerability of caterpillars to predation has led to the evolution of diverse defenses, including glandular hairs, setae that produce minute droplets of secretion at their tip. In this study we document larval glandular hairs in six of eight pierid butterfly species examined in the subfamilies, Pierinae and Coliadinae. All four pierine species had glandular hairs, while only two of four coliadine species possessed them. Chemical analysis of the larval secretion of *Pieris napi* revealed novel lipids, napolenes. Furthermore, a bioassay demonstrated that the secretion of *Ascia monuste* plays a defensive role: predatory

Costa Rica, are inventoried by rearing wild-caught caterpillars through to adults. Larval foodplants and color-patterns--in addition to adult morphology--may provide characters of use in distinguishing species. So, too, may DNA barcodes. We have barcoded about 2,350 reared specimens of some 360 species of ACG skippers. Barcodes cleanly separate about 95% of these species. Occasionally they fail to distinguish what we know on other
grounds are distinct species or, conversely, suggest two species where we are certain there is only one. In a few cases, barcodes clearly indicate the existence of unsuspected cryptic species. Moreover, barcodes corroborate cryptic species previously recognized on more conventional grounds. Overall, barcodes are extremely useful at and around the
species level.

Covell, Charles V., Jr., McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, Gainesville, Fl 32611-4378

"The Society Archives: some images of old friends and past meetings."

ABSTRACT: A photographic journey backwards with images of old friends taken by the author and via photographs of annual meetings, now in the Lepidopterists' Society's archives at the McGuire Center.

Douglas, Jonathan M. [student] , 7131 Oran SE, Cascade Terrace, Grand Rapids, Michigan, 49546

"Light Habitats and the Functional Sensory Ecology of Polarized Iridescence in Neotropical Butterflies."

ABSTRACT: The exploitation of polarized light to detect mates may have adaptive value in forest habitats, where illumination varies greatly in spectrum and intensity. Here we investigate the extent to which Neotropical butterflies exhibit polarized iridescence and evaluate the types of habitats in which the trait is commonly found. We examined the degree of polarized wing patterns in representative species belonging to the families Nymphalidae, Papilionidae, and Pieridae found with Costa Rica. Of the 178 species examined, 116 species exhibited moderate to prominent polarization. These species were significantly more likely to occupy forest habitats than open habitats.

Douglas, Matthew M., Grand Rapids Community College, 7131 Oran SE, Cascade Terrace, Grand Rapids, Michigan, 49546 mdouglas@grcc.edu

"A Review of the Migration Guidance System of the Monarch Butterfly (*Danaus plexippus*) and a Synthesis Hypothesis for Orientation and Migration Behavior"

ABSTRACT: A number of topographical, meteorological, solar, and electromagnetic parameters have been shown to provide sensory cues for an orientation and guidance system that allows Monarch butterflies in North America to migrate to their overwintering roosts in Mexico and California. These environmental parameters include geographic features such as rivers, oceans and mountains, the passage of seasonal cold fronts, the seasonal changes in temperature, the seasonal changes of the sun's angle in the sky, the diurnal passage of the sun from east to west, polarized light, and geomagnetism. This paper addresses the strengths and weaknesses of each environmental parameter as it pertains to a hypothetical guidance system and proposes a solution for how Monarch butterflies may integrate an array of environmental cues that (when used in concert) allows them to migrate to the same overwintering roosts every year.

Garrett, Sarah [student], Biology Department, Wake Forest University

"Shifts in the usage of ultrasound by three tiger moths: *Cycnia tenera, Empyreuma affinis*, and *Syntomedia epilais* (Lepidoptera: Noctuoidea: Arctiidae)."

ABSTRACT: Moths (Lepidoptera) evolved their hearing abilities in response to the selection pressures of echolocating bats and some have secondarily coopted sound detection for courtship. Since a moth's acoustic responses to a bat and to a conspecific are likely to represent very differnt selective regimes, the two responses may be mutually exclusive. If so, a moth especies that has a complex courtship system will use acoustic signals appropriate for intraspecific communication and will have terminated the use of acoustic signals for communication with bats. To test this hypothesis I used three moth species, Cycnia tenera, Empyreuma affinis, and Syntomeida epilais (Lepidoptera: Noctuoidea; Arctiidae), which all detect and produce sound but vary in the complexity of sound used during courtship. Individuals of each species were played two sets of ultrasonic pulses, one set of bat calls and another set of conspecific calls.

Garwood, Kim, Mission, Texas.
"Butterflies of Northeastern Mexico."

ABSTRACT: An illustrated talk based on the nicely illustrated book on butterflies of northwestern Mexico by Ms. Garwood and Richard Lehmann.

Gilligan, Todd M.[student], Museum of Biological Diversity, The Ohio State University, Columbus 43212 gilligan5@osu.edu
"Species concepts and boundaries in *Hystricopora* (Lepidoptera: Tortricidae)." [student paper]

ABSTRACT: The genus *Hystricophora* (Tortricidae: Olethreutinae) has been largely unstudied for the past 75 years. Roughly half of the currently of the eleven currently described species make up a complex whose members inhabit vast areas of the western United States. Recent studies of this complex have shown that variation between to individuals in the same population rivals interspecific variation in the genus. Such variation is evident in all morphological characters examined, including male and female genitalic characters. This poses significant problems when attempting to delimit species boundaries within the genus; application of recent phylogenetic species concepts would synonymize several of the current names.

Goldstein, Paul Z., Florida Museum of Natural History, McGuire Center for Lepidoptera and Biodiversity, University of Florida
"Phylogenetic Systematics and the Future of Homology ."

ABSTRACT: Homology assessment is the most fundamental component of comparative biology. Its relevance spans all forms of biological observations, whether they be morphological, molecular, behavioral or otherwise. With the advent of phylogenetic systematics, homology became inextricably linked to the notion of synapomorphy—shared, uniquely derived features. In the last few years, homology has withstood renewed treatment in the scientific literature from technical (e.g. software), applied (e.g. molecular versus morphological), theoretical, and philosophical perspectives. Of critical interest is the distinction of observed similarity (putative homology) from synapomorphy, and whether the two are synonymous and therefore treated identically in mechanics of phylogenetic analysis. These issues will be reviewed with emphasis on the coding of characters, sources of character data, and their combination,with particular reference to lepidopteran studies.

Gruber, John W. and Liz Parzych, Friends' Central School, 1101 City Avenue Wynnewood, PA 19096 JWGruber@msn.com
"Larval host plants and adult polyphenism in *Nemoria lixaria* (Guenée) " (Geometridae) [poster]

ABSTRACT: *Nemoria lixaria* is a widespread geometrine moth of the southeastern and mid-Atlantic states. Gravid adult females of *N. lixaria* were collected in Pocomoke River State Park, Worcester Co., MD. Larvae were reared to pupae on *Quercus coccinea* leaves, *Quercus palustris* catkins, *Rhus typhina*, *Juglans nigra*, and *Betula populifolia*. Newly emerged adults were contained in rearing cages and allowed

reciprocally monophyletic, and thus warrant species status. However, the relationships among the three taxa remain unclear, likely due to incomplete lineage sorting following fragmentation in *L. xanthoides*' geographic range.

Papaj, Daniel R., and V. Newsom, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ 85721 papaj@email.arizona.edu
"Use of a larva's aposematic signal in larval recognition by ovipositing pipevine swallowtail butterflies."

ABSTRACT: In a study of the Pipevine Swallowtail (*Battus philenor* L.), we show that the larva's aposematic signal has warning value for conspecific females. Specifically, a coloration pattern in the caterpillars that is considered aposematic in terms of attack by natural enemies is shown to be aposematic in terms of oviposition by females. In field and laboratory assays, females avoided oviposition on *Aristolochia watsoni* Woot. Standl. plants that bore live conspecific larvae. Females avoided plants bearing artificially- constructed models identical in larvae in shape, size and color pattern. Finally, oviposition on a plant bearing a model with the l;arval color pattern, but not on a plant that bore a putatively cryptic leaf-green model, was reduced relative to controls, suggesting that the larval color pattern was essential for avoidance.

Powell, Jerry A., Essig Museum of Entomology, Univerity of California, Berkeley, 94720 powellj@nature.berkeley.edu
"Don Meadows, almost forgotten as a lepidopterist."

ABSTRACT: Don Meadows was the first lepidopterist to collect extensively on any of the California Channel Islands, when he lived on Santa Catalina during 1927-1934. Later he published annotated lists of the butterflies, sphingids, and tiger moths of the island, and he collected more than 260 species from Catalina, the most comprehensive survey of Lepidoptera for any site in California at that time. Meadows is credited with having proposed the Channel Islands Biological Survey of the Los Angeles County Museum, and he helped organize and participated in the initial 1939-40 expeditions. He published several papers, including new taxa from the islands, and at least three patronyms were proposed in his honor. However, by the late 1940's his interest in insects had waned; in 1950 he sold his collection to the Smithsonian Institution, and he disappeared as a lepidopterist. I ws amazed to learn that during the subsequent 44 years Don Meadow became an acclaimed historian and bibliophile of southern Californiana, published several books and numerous articles in magazines and other periodicals, and was the subject of two published booklets of tributes from admirers, none of whom cared about his life as a lepidopterist.

Pozo, Carmen[1] and Armando Luis-Martínez[2,] McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, SW 34th. Street and Hull Road, Gainesville FL, PO Box 112710, 2 Museo de Zoología "Alfonso L. Herrera", Departamento de Biología Evolutiva, Fac. de Ciencias, UNAM. cpozo@flmnh.ufl.edu
"Butterfly Phenology of Calakmul and Comparison between two Dry Tropical Forests in Mexico."

Abstract: The phenology of the Rhopalocera was analyzed for the Calakmul Region (CR), in Mexico's Yucatan Peninsula. A total of 60,662 individuals of 359 species were recorded. Annual species richness was variable during the years 1997, 1998 and 1999, as a function of the season, with greatest diversity during the months of October and November. The Hesperiidae (135 species) and Nymphalidae (111 species) were the most diverse, and showed greater variation with respect to distribution of species richness throughout the year. A comparison was made between results of the present study and faunal studies with equivalent methodologies of Atoyac de Alvarez (Guerrero), and of Manantlan (Jalisco and Colima). Notable similarities were observed among phenology in the three regions, especially between CR and Manantlan.

Miller, Lee D. and Jacqueline Y. Miller, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611-2170; lmiller@flmnh.ufl.edu

"Lepidoptera Biodiversity in Mexico: A Case for Sympatric Speciation."

ABSTRACT: Mexico is recognized as one of the international hotspots of biodiversity with more than 2500 butterflies, including skippers, recorded. There has been much speculation concerning the reasons for this exceedingly diverse group in Mexico. Ernst Mayr (1942, 1963) articulated the biological species concept based on his theories and discussions with and publications by other scientists. These concepts and ideas were documented and refined further by Simpson (1944) and Mayr (1963, 1982) with a long list of potential isolating mechanisms. The current biodiversity in Mexican Lepidoptera will be discussed in light of the above concepts and examples will be presented that our assertion that there are far more undescribed taxa than previously believed.

Miller, Jacqueline Y and Lee D. Miller, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611-2170 (jmiller@flmnh.ufl.edu)

"Distributional ranges of selected Mexican Lepidoptera."

ABSTRACT: The lepidopteran fauna of Mexico is exceedingly diverse due in part to its unusual geological history and the orogeny of mountain ranges to produce a wide variety of habitats. As a result there are several relictual, insular patterns present among the tropical moist and intervening xeric areas in Mexico. Such differences are reflected in the geographic distributions of the Lepidoptera present with the furthest south distributions of Nearctic taxa and alternatively the furthest northern distribution of Neotropical species. As a result of this rich habitat diversity, Mexico possesses extraordinary lepidopteran species richness and ranks 10th worldwide in biodiversity. Based on current systematic studies, faunal surveys, and comparative analyses, we will examine representative examples of these segregates and discuss the potential for future
studies in Mexico.

Nazari, Vazrick, Department of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9 CANADA, vnazari@ualberta.ca

"Phylogeny of Parnassiinae: When molecules clash with morphology." [student paper]

ABSTRACT: The phylogeney of the swallowtail subfamily Parnassiinae (Lepidopera: Papilionidae) is investigated using 7 mitochondrial and nuclear genes (COI, COII, ND5, ND1, 16S, EF1a, and wingless). Morphological characters used by major previous workers are also re-evaluated and employed in a separate analysis. The results support the monophyly of Parnassiinae, and contradict several previous assumptions about the evolutionary history of the subfamily. Based on molecular evidence, a new classification for the subfamily is proposed.

Oliver, Jeffrey C., Department of Entomology, University of Arizona, Tucson, AZ 85721, jcoliver@email.arizona.edu [student]

"Molecular systematics of the *Lycaena xanthoides* species complex (Lepidoptera: Lycaenidae)."

ABSTRACT: Three closely related copper species, *Lycaena xanthoides* (Boisduval), *L. editha* (Mead), and *L. dione* (Scudder), comprise the *L. xanthoides* species complex. Various authors have treated these three taxa as one, two, or three different species. Extensive intraspecific morphological variation and morphologically intermediate populations, have prompted some authors to classify *L. xanthoides* and *L. editha* as one species. I used DNA sequencing and phylogenetic analyses to test the hypothesis that each member of the complex represents a monophyletic lineage. My results demonstrate that each taxon is

to mate. Second generation larvae were reared on oak and divided between two growth chambers under differing regimens of light and temperature. Reduced temperature and shortened diurnal photoperiod produced melanic adult moths in a range of varying forms. Warm temperatures and long diurnal photoperiod induced typical green summer forms. Additional experiments are planned to investigate at what point in larval or pupal development melanic forms are induced.

Heath, Fred, 5443 Camino Compadre, Camarillo. CA 93012 fred.heath@earthlink.net

"Those Unique Butterflies of Southern California ."

ABSTRACT: Although Arizona is a wonderful place (especially in August) to find many exciting species of butterfly which can be found nowhere else in the U.S., many of these species can be found a lot more commonly south of the border in Mexico. Certainly Arizona (not to mention Texas) has a larger list of butterflies than California. However, no state comes close to the number of endemics or near endemics which are found in California. If you want to see Hermes Copper, Avalon Scrub-Hairstreak, San Emigdio or Veined Blue, then a trip to Southern California is mandatory. Enjoy these and other unique butterflies through a virtual trip of Southern California with the beautiful photographs* of Herb Clarke.

Jordan, Alex T., Department of Biology, Wake Forest University, Winston-Salem, N.C. 27109 jordnt1@wfu.edu

"Developmental Plasticity: Effects of Dietary Pyrrolizidine Alkaloids on the Development of the Coremata of the Salt Marsh Moth (*Estigmene acrea*) (Lepidoptera: Arctiidae)."[student poster]

ABSTRACT: The androconial organs of male salt marsh moths are inflatable air-filled tubes, coremata, that arise from intersegmental intersegmental imaginal disks between the 8th and 9th abdominal segments. The larvae of the salt marsh moth are polyphagous but prefer to feed on plants containing pyrrolizidine alkaloids (PAs). PAs are toxic secondary plant substances based on a bicyclic nitrogen containing pyrrolizidine ring and are common in many plants, particularly in certain Asteraceae, Boraginaceae, and Fabaceae. Pas are thought to protect plants from herbivores. This study focuses on the role of Pas as dietary corematal morphogens and seeks to describe their effects on corematal development.

Kaufman, Kenn, Rocky Ridge, OH; kenn.kaufman@worldnet.att.net

"The Pros and Cons of Promoting Butterfly Appreciation."

ABSTRACT: There aren't any cons to the appreciation itself, so I'm goping to focus on the way that such appreciation has actually has been promoted – and in what effect that can have on conswervation, on sciencde, and on public perceptions of nature in general. Warning to you butterfly enthusiasts –I'm also going to going to talks about moths!

Kawahara, Akito Y., Department of Entomology, University of Maryland, College Park 20742; kawahara@umd.edu

"A new method for mounting and preserving microlepidoptera for molecular research [poster]."

ABSTRACT: Due to their small size, preserving microlepidoptera for molecular research can be challenging. While it may be convenient to place entire specimens in alcohol, many species remain undescribed, and it is therefore necessary to preserve dried, spread specimens. Collecting multiple specimens has been suggested, but only one specimen per species is frequently collected. Removing legs has also been proposed, but some taxa have microscopic legs, and nuclear genes may not be expressed in abundance in this body region. I propose removing the abdomen and three legs before spreading the specimen on a square, wooden mounting block secured in a Schmitt box. This method can be readily applied in the field, preserves nucleotides for molecular systematics, prevents damage, and secures a spread voucher specimen for identification.

Klein, Michael W., 4588 Wilson Ave, San Diego, CA 92116, keps2@flite-tours.com

"Thorne's Hairstreak (*Callophrys thornei*) where we have been, what happened, where we have gone and where we need to go."

ABSTRACT: The Thorne's Hairstreak is a butterfly restricted to the Otay Mountain region of San Diego County. Much discussion as to whether it is a separate species or a subspecies is ongoing. The fires of October 2003 appeared to have a significant impact on them. So much so it was presumed extinct. With limited populations being discovered in 2004 and 2005 we now have an opportunity to pursue further research on is taxonomy, relation with its hostplant, Tecate Cypress and dispersal behavior.

Koehn, Leroy C., 202 Redding Road, Georgetown, Kentucky, 40324 leptraps@aol.com

"Catocala Capers: Lepidoptera humor."

ABSTRACT: A cartoon which appeared in the News of Southern Lepidopterists Society during the 1980's. The humor was based in part on some rather well-known lepidopterists.

Kral, Thomas, 6600 North Galaxy Road, Tucson, Arizona, 85741, phoebus@gainusa.com

"Biodiversity Discovered: Solving the Mystery of the Global Species Count and Exploding the Myth of the Sixth Extinction."

ABSTRACT: Ecologists have long recognized butterflies as the best group of insects for examining patterns of total biodiversity. By fixing global insect diversity using "The Butterfly Index", the total number of living species on earth, as well as actual extinction rates, have been calculated from reliable data. At most, there are 3.63 million species and the extinction rate is 3 to 5 species annually, vastly differing from the much higher estimates embraced by leading ecologists. This paper, accessible on-line at http://www.sovereignty.net/p/land/kral-insect.htm details precise biodiversity and extinction rate calculations and also explains where the world's leading ecologists went spectacularly wrong. Only the scientific aspects of this paper will be discussed.

Kunte, Krushnamegh [student], Section of Integretive Biology, University of Texas at Austin, 78712-0253 krushnamegh@mail.utexa.edu

"Evolution of Proboscis Length in Butterflies: Allometric Growth, Flower Handling Time, and Contraints on Proboscis Length." [student paper]

ABSTRACT: Butterfly proboscis length is positively correlated with body length. Many species, however, possess allometrically developed, disproportionately longer proboscides. The adaptive significance of long proboscides is obvious: they provide butterflies access to flowers with long corolla tubes, which, for their size, would be otherwise inaccessible. It is, then, intriguing, why this feature is not more widespread. Perhaps ecological constraints, such as increased flower handling time, prevent this evolution. I tested this idea with field observations of Costa Rican butterflies. In these butterflies handling time was positively correlated with body size, but negatively correlated with proboscis length: body size ratio. The correlations were unaffected by nectar volume, competition or community diversity. These results indicate that increased handling time may constrain the evolution of allometric growth of butterfly proboscides.

Lawrie, David D., 10820 78 Ave, Apt. 307, Edmonton, Alberta, Canada , T6E 1P6 dlawrie@phys.ualberta.ca

"The Dominican Republic: Caribbean Hot Spot for … Biodiversity."

ABSTRACT: Hispaniola, despite being the second largest island in the Caribbean, likely has the greatest biodiversity and number of endemic organisms of all islands in the Caribbean. This is an undecided question at present. In this talk, I'll try to describe the wide range of ecological areas present in the Dominican Republic and the biodiversity implications. I'll then talk about my experiences as a volunteer worker for the Museo Nacional de Historia Natural. During my short tenure, WE found a lot! The goals of this talk are to convey the fact that "Amateurs" can make a difference, (perhaps in not readily apparent ways, to be discussed) and much remains to be saved and discovered on this beautiful island. There is hope.

Lill, John T., Department of Biology, George Washington University, Washington, D.C. 20052 lillj@gwu.edu

"Ecological consequences of shelter-sharing by leaftying caterpillars."

ABSTRACT: The construction of leaf shelters by caterpillars is a common and widespread behavior within the Lepidoptera. Perhaps less well documented is the secondary use of precontructed shelters by con- and heterospecific larvae. The leaftying fauna associated with oaks (*Quercus* species) in eastern is well developed, consisting of about 20 species, most of which are microlepidoptera. Adults of many of these species oviposit in preexisting leaf ties, commonly resulting in coinhabiting and/or sequential use of the same shelter by more than one larva. In the field, we explored the consequences of larval density and colonization sequence (primary vs. secondary colonists) on the survival and parasitism rate of *Psilocorsis quercicella* (Oecophoridae). In addition, we conducted laboratory experiments to test the hypothesis that cohabitation decreases "construction costs" – a potential benefit to shelter sharing – using *P. quercicella* and *Pseudotelpusa* nov. sp. (Gelechiidae).

Masters, John, 26503 Hillsfall Ct., Newhall, CA 91321 quest4tvl@aol.com

"The Chiricahua White: Is it *Neophasia epyaxa* Strecker or *Neophasia terlooi* ?"

ABSTRACT: Henry Skinner revived the name *Neophasia terlooii* Behr in 1900 and applied it to the Arizona species of *Neophasia* described as *Neophasia epyaxa* by H. Strecker in the same year. He did this primarily to discredit the Strecker name as a junior synonym. The problem is that *Neophasia terlooii,* as described by Behr, is more likely a junior synonym of *Eucheira socialis* Westwood.

McGuinness, Hugh, The Ross School, Sag Harbor, New York, 11963; hmcguinness@ross.org

"Moths of a Maritime Grassland Restoration Project at Montauk, New York."

ABSTRACT: Maritime grasslands were once a common and widespread habitat on Long Island. Due to suburbanization, control of wildfires and loss of farms they have become increasingly scarce and are now a conservation priority in the region. At Theodore Roosevelt County Park on the eastern tip of Long Island a controlled burn program was started in order to restore up to 250 acres of grassland. Since then 35 acres of restored grassland have been added to the original 33 acres of grassland remnants that were left in 1994. The Lepidopteran fauna of Long Island's maritime grassland is important because it includes several species of moths that have disjunct ranges; they occur in coastal grasslands and also in the prairies of the American heartland. In addition, there are at least 25 species that might occur in theses grasslands that have been identified by the New York State Natural Heritage Program as rare or endangered. During the summer of 2004 I sampled moths in the park from May through early November. The purpose of the study was twofold: first, to census the population of rare moths; second to identify the guild of grassland moths and examine whether restored grasslands habitat within the park held the same diversity and abundance of grassland moths as remnant habitat.