

# Utah Lepidopterist

Bulletin of the Utah Lepidopterists' Society



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## The Utah Lepidopterists' Society Hosts the Pacific Slope Meeting of the Lepidopterists' Society



**Front Row:** Jeff Baier, John Richards, Matthew Olsen, Don Wright, Aaron Olsen, Rick Gillmore, Wayne Whaley, Clyde Gillette, Steve Mueller, Elaine Halbedel, Ken Osborne, John Lane, Todd Stout, Sheryl Stout, Alan Myrup, Vernon Evans, Malcolm Douglas **Second Row:** Janet Gillette, Nicky Davis, Les Davis, John Nordin, Sally Levinson, Janice Olsen, Todd Gilligan, June Preston, Bruce Webb, Kenelm Philip, David Powell, Clifford Ferris, William Neill, Paul Opler, Michael Streng, Lonnie Olsen, Bill Patterson, John Roberts, Kelly Richers, Kenn Anderson, Dale Nielsen, Joel Johnson, Jerry Powell, Bill Swisher, Ray Stanford, Christy Bills, Robert Mower, Floyd Preston, Jared Ferguson **Not Pictured:** William Harding, Sheila Harding, Chris Maddy, Doris Brown, Kit Stanford, Barbara Douglas, John Masters, Betty-Ann Philip, Vinetta Swisher, Doug Daniels, Michael Streng, Don Rolfs, Brianna Olsen, Evi Opler Photo by Evi Opler

The Utah Lepidopterists' Society hosted the Pacific Slope Meeting of the Lepidopterists' Society at the Great Basin Environmental Education Center (GBEEC) in Ephraim Canyon, Sanpete County on 21-23 July 2006. Set amid the beautiful aspen/spruce forest of the Manti-Sal National Forest, the GBEEC was an ideal location for the meetings. The cool mountain air at 8900 ft. was a welcome relief from the 100°F midsummer heat on the valley floor.

Arriving on Friday, conference attendees were welcomed by Todd

Stout, Vernon Evans and Clyde Gillette at the registration desk. Todd's conference shirt design was a big hit with its print of the San Rafael Swell and a very large *Papilio indra* on-the-wing along with various other native butterflies. Upon arrival, many took advantage of the field trips to the Skyline Drive (10,000 ft.) atop the Wasatch Plateau, while others struck out on their own in search of specific lepidoptera. Some of the species encountered were *Limenitis weidemeyeri*, *Speyeria mormonia*, *Speyeria atlantis*, *Speyeria egleis*,

*Speyeria zerene*, *Euphydryas anicia*, *Pontia occidentalis*, *Parnassius phoebus*, *Hypaurotis chrysalis*, *Agriades glandon* and many others. Thanks to Wayne Whaley and Bruce Webb for arranging the field trips.

In late afternoon, Clyde Gillette, president of the Utah Lepidopterists' Society, welcomed the sixty conference attendees followed by a presentation by John Masters on the Wheeler geographic surveys and their impact on our present knowledge of the West including western butterflies.

The barbeque dinner was excellent as were all the catered meals. At times, the food lines were a little long; but no one seemed to mind as it gave them time to meet friends and share collecting stories.

Aaron Olsen led the evening's moth collecting field trip with his mega-monster bright lights. Others set up their own light systems at various locations including on site at the GBEEC. Several species of geometrids, tortricids, noctuids (including a few *Catocala*), notodontids, and sphingids were found swarming at the lights.

Many stayed on site in the comfortable cabins and lodge available at the GBEEC. Awakening in the cool morning to the sound of robins, cordilleran flycatchers and red breasted nuthatches was an added bonus, especially for the "birders" among the group. Several other species of birds were also identified including western tanagers, black-headed grosbeaks and woodpeckers.

The paper presentations on Saturday were very well attended and covered a wide variety of interesting subjects. Todd Stout led off with an excellent presentation on the taxonomic implications of morphological differences in the larvae of the *Anthocharis sara* complex. We would also like to thank Todd for his computer skills in preparing the smooth transition between presentations.

Jerry Powell followed with a presentation on the Tortricidae of Utah. He emphasized the need for more field work on this often overlooked group. On a pre conference light collecting outing, Jerry was easily able to collect many new records for Utah. Vernon Evans, ULS vice president, has since taken Jerry's admonition to heart sampling dozens of locations throughout the state for tortricid moths since the conference.

Next, Clyde Gillette gave a

presentation on the early history of lepidoptera in Utah including the early and middle collectors in the state.

After a short break, Ray Stanford updated us on the known distribution of butterflies and skippers in the seventeen western states. He provided excellent handouts which included needed records for future field work. We all appreciate his hard work in keeping and updating the records for the western US.

During lunch, Dave Lanier, director/manager of the GBEEC for Snow College, shared with us the history of the center and its origins in range management. For many years, the Wasatch Plateau was over grazed to the point where the soil was nothing but powder and dust. Storms would often cause severe flooding in the towns in the valleys below. The range was eventually closed to grazing and the US Forest Service built the experiment station (now the GBEEC) to study ways to rehabilitate the range. While the range is much improved today, no one really knows what the original range must have been like. One can't help but wonder what butterflies might have called the Wasatch Plateau home before being so badly damaged over the years. Certainly nearby mountain ranges appear to have a greater diversity of species.

Ken Osborne began the afternoon presentations on the colonization of *Phoebis agarithe* in Southern California due to the introduction of its larval foodplant, *Pithecolobium dulce* (manila tamarind tree), brought in and cultivated by Mexican immigrants.

Next, Alan Myrup presented results from his butterfly monitoring project in Big Springs Hollow in the South Fork of Provo Canyon. He shared a selection of interesting population trends and flight period patterns taken from five years of data collected on his transect walks.

Kelly Richers followed with an update on his county collection data on the moths of California, Nevada and Arizona. He has gathered thousands of distribution records, mostly from California. He also emphasized the great need for more field work to be done with the moths.

"Ranger Steve" Mueller discussed his ongoing butterfly and moth surveys in Bryce Canyon National Park. He shared his fun experience of putting on a "black light" demonstration for park visitors.

Sally Levinson followed with a video entitled, "In the Company of Wild Butterflies." The film contained excellent photography of many butterfly species as well as a photo life history of the butterflies from egg through adult.

Lastly, Wayne Whaley treated us to an excellent presentation on the *Papilio indra* complex. Along with excellent photos of all the *indra* subspecies, he presented data and graphics illustrating their distribution.

Following Wayne's presentation, we adjourned for the evening banquet held at the historic Mercantile Co-op Building in Ephraim, Utah. Several drawers from the Utah Lepidopterists' Society synoptic collection were on display for all to enjoy. Kenelm W. Philip, the recipient of the 2006 John Adams Comstock Award, was honored by Clifford Ferris for establishing the Alaska Lepidoptera Survey (ALS) and for his years of work and thousands of specimens that have greatly increased our knowledge of Lepidoptera in Alaska. ULS president Clyde Gillette was the evening's keynote speaker. He addressed his personal concerns with the increasing human impact on Utah's habitats and butterfly populations.

Many thanks to Dave Lanier (GBEEC director), Dale Nielson (project leader and logistics coordinator), Vernon Evans



Bruce Webb, Kelly Richers and Vernon Evans at the Great Basin Environmental Education Center (GBEEC). Photo by Todd Stout



Kenelm Philip receives the John Adams Comstock Award from Clifford Ferris at the banquet. Photo by Evi Opler



Paul Opler, Evi Opler, Ray Stanford, Doris Brown and William Patterson at the GBEEC. Photo by Todd Stout



Vernon Evans with Floyd and June Preston beside their lepidoptera lab. Photo by Todd Stout

(registration and badging), Clyde Gillette (program director), Wayne Whaley and Bruce Webb (butterfly field trips), Aaron Olsen (moth field trip/black lighting) and Todd Stout (audio visual) for their efforts in

making this meeting an enjoyable experience for all who attended. Also, special thanks to Joel Johnson for keeping meticulous notes (over 150 pages!) from the 1996 Pacific Slope Meeting. His groundwork

made the planning for this year's meeting much easier than trying to do it from scratch.

Written By Alan Myrup  
ULS Bulletin Editor

## Kenelm W. Philip Honored With The John Adams Comstock Award

While Ken was born and raised in Staten Island, NY, he might be considered a "nearly native" Alaskan following his move to Fairbanks in October, 1965. Ken's family summered in the Adirondacks in New York and in 1938 at Treetops Camp he was introduced to butterfly collecting, and in Ken's words "it stuck." Following his move to Alaska, Ken established the Alaska Lepidoptera Survey (ALS) in 1970. Since then, over 600 volunteers

around the state have collected about 25,000 specimens. With the additional specimens that Ken has collected, the ALS collection now holds about 79,000 specimens – a formidable effort! The collection will eventually be housed at the Smithsonian.

Although his formal training is in physics with a B.S. and M.S., and radio astronomy (PhD, 1963), all from Yale University, Ken has had a

life-long interest in Lepidoptera. Except for 23 months in the Army (1956–1958) as a microwave technician, Ken's career has been associated with academia. While a graduate student, he served as a research assistant in Astronomy at Yale, and upon completion of his graduate studies was appointed to the position of Research Staff Astronomer at Yale University Observatory. Following his move to Fairbanks two years later, he joined



the Geophysical Institute, University of Alaska, first as an Assistant Professor and then an Associate Professor of Physics until 1975. From 1967–1985, he was a Research Associate in the Institute of Arctic Biology (IAB), University of Alaska. From 1985 to the present, he has been a Senior Research Associate at IAB. In 1971, he became a Research Associate of the University of Alaska Museum and still holds that position. Since 1977 he has been a Research Associate in the Department of Entomology at the Smithsonian.

Ken has been active in the Lepidopterists' Society for many years, serving several terms as Vice-President (1967–1972; 1977–1978), and on the Executive Council (1974–1977). He has been a member of the Editorial Committee of the *News* since 1971 and serves as Zone 1 (Far North) coordinator for the annual Season Summary. In 1979, he hosted the Annual Meeting of the Lepidopterists' Society in Fairbanks, with a related field trip to the North Slope.

Since his move to Alaska, Ken has also been interested in computers and their application to entomological collection management and data analysis. From 1992 to 1995, he developed Range Mapper – a sophisticated software geographical mapping application for the Apple/Macintosh platform. He was President of the Fairbanks Apple Users' Group in 1982–1983, and has served as a board member since 1983. His interest in computer graphics led him to delve into fractals and the Mandelbrot set, resulting in several publications.

To the end of increasing the holdings of the ALS collection, Ken has traveled widely in Alaska, Northwestern Canada, and Siberia. His trips to the former U.S.S.R. were to Aborigen and Chaun Stations, Magadanskaya Oblast' (1978), Aborigen Station again in 1980,

several different areas in Magadanskaya Oblast' (1983), and Provideniya and Anadyr' (Magadanskaya Oblast') in 1990. For these trips, he had logistic support from the U.S. National Science Foundation, the Soviet Academy of Sciences under the NSF Soviet Exchange Program (1978, 1980, 1983), and the Institute of Biological Problems of the North Magadan (1990)

Other trips outside of Alaska include many to the northwestern Yukon Territory along the Dempster Highway, as well as to Coppermine and Victoria Island, Northwest Territories (1975), and Coppermine, Victoria Island, and Bernard Harbour, NWT (1988); the latter two trips with logistic support by the Canadian Polar Shelf Project and grants from the National Geographic Society and the Smithsonian.

Annual trips to various venues in Alaska have taken Ken from Haines and Hyder in extreme southeastern Alaska to the North Slope areas of the Ivotuk Hills, Galbraith and Toolik Lakes, Prudhoe Bay, and west to the vicinity of Cape Thompson, the Seward Peninsula (Nome area and Darby Mts.), thence to the Anchorage area and Kenai Peninsula. Logistic support for some of these trips was provided by the Alaska Dept. of Transportation, the Bureau of Land Management, Alaska Dept. of Fish & Game, University of Alaska, Smithsonian, National Geographic Society, and other agencies. The National Park Service has supported trips to Alaskan national parks and preserves including Denali, Gates of the Arctic, Wrangell-St. Elias, and Yukon Charley. Ken has published many reports over the years related to his travel and collecting activities. Several journal articles have been published, of which two were co-authored with Jim Troubridge. On many of these trips, Ken has been accompanied by other collectors and

scientists in related fields. In addition to the 1979 Lepid. Soc. field trip, the list includes J. F. Gates Clarke, Hans and Mark Epstein, Cliff Ferris, Annette C. Jones, Mathias Lšrtscher, Daniel Oosting, Carolyn Parker, Floyd and June Preston, Dave Roseneau, Ron and Margaret Royer and children, Olavi Sotavalta, Jim and Lynda Troubridge, Monty and Grace Wood.

Ken is an amiable traveling companion and can brighten up bad weather days in the field with a wealth of stories and anecdotes. Given the opportunity and a receptive audience, he is quite the raconteur.

In the past few years, Ken has turned from avid field collector to digital photographer. His current aim is to acquire live closeup field digital photos of as many Alaskan butterfly species "as can be induced to cooperate."

Lepidoptera are not Ken's only collecting activity. Many of the walls of his and wife Betty Anne's home are lined with bookshelves filled with books, and his lab area has racks of classical music LP records and CDs that fuel a formidable speaker system. His basement woodworking shop boasts a collection of hand-operated wood planes in a cabinet that Ken custom made. When bored by other interests, Ken is quite the cabinet maker.

In has capacity as the Alaskan butterfly guru, Ken has always graciously provided helpful information to Lep. Soc. members who were planning collecting trips to Alaska and the Far North. He has also made special travel and collecting permit arrangements for visiting lepidopterists to accompany him in such Alaskan venues as national parks, state parks, and other normally restricted areas.

Written By Clifford Ferris

# **Mosquito Fighter Has Soft Spot For Bugs**

## **Abatement Chief: Utah County's West Nile Warrior**

### **Boasts Vast Knowledge Of Insects**

**Written By Todd Hollingshead Reprint from the Salt Lake Tribune 4 Sept 2006**

Bob Mower has a bug problem - and it has nothing to do with the thousands of creeping, crawling critters infesting his basement. His problem is bigger than that - much bigger. As director of Utah County's mosquito-abatement program, Mower is the first line of defense against hundreds of thousands of pesky mosquitoes, an increasing number of which now carry the potentially deadly West Nile Virus. "Before now, mosquito abatement was just taking care of complaints," he says. "It's just been a completely different ball game."

For 28 years, Mower has turned his interest in all things insect into public service by working part time each summer for the county's mosquito team. Last year, just as West Nile was on the verge of exploding in Utah, Mower took the job as director. This year, West Nile has reached its highest activity ever recorded in the state. A total of 65 human cases have been reported by the Utah Department of Health, compared with 12 at the same time last year. Three infected Utahns have died, two of those in Utah County. And although Mower is "one of the most unassuming people in the entire world," according to his wife, Carol, he has become one of the most important in protecting Utah County's public health. "It weighs very heavily on him," she says. "Any time anybody is ill or has side effects or passes away, that's a horrible thing. Our home is sad on those days." An amped-up mosquito-abatement program has helped minimize those sad days.

For six straight weeks this summer, Utah County attacked the mosquito populations through aerial spraying along Utah Lake's eastern border. On

the ground, crews have continuously assaulted any of the irritating insects they can reach. "How can this little thing be packing something that makes such a change in people's lives?" Mower asks. The West Nile threat certainly has changed his life. This summer has been especially busy - much busier than it could have been for Mower.

After teaching biology and environmental science at Orem High for 32 years, the father of five retired last year. But there has been no sitting back in lawn chairs, sipping lemonade in the summer evenings at his Orem home. "It wasn't quite what I was planning on," he says. Then again, Mower says, if he wasn't doing mosquito abatement he probably still would be out at night catching bugs. He dealt with little creatures every day growing up on a farm in central Utah's Fairview, but it was an entomology class at Brigham Young University that really got him buzzed about bugs.

He packed bachelor's and master's degrees in his lunch pail more than three decades ago and has been out in nature catching, analyzing and explaining bugs ever since. "He's quite the naturalist," says Joseph Miner, director for the Utah County Health Department. "He knows every plant and every insect and bird that you can show him."

Most of those insects can be found in Mower's Orem museum, er, home. Thousands of specimens are neatly pinned in dozens of display boxes that fill his basement cabinets. The ones from his most recent outing remain in the freezer or the food-storage room. "For a girl that used to scream at bugs, I think I do pretty well," Carol Mower says. His favorite is the tiger moth, a fiery red, tiger-striped insect

he has been studying for 25 years. He also has rhinoceros beetles, butterflies and walking sticks, some as big as the palm of your hand. "I call this one the 'Ooo and Ahh Drawer,' " Mower says, pulling out a display box with a dozen terrifyingly large insects, some of which come from as far away as Africa.

Yes, for those who get squirmy around anything wormy, Mower's basement is no place to be. Mower doesn't hide his interests: The license plate on his white 1999 Nissan pickup reads "arctiid," the scientific name of a tiger moth.

Still, Mower isn't all bugs. His backyard boasts a garden, with tomatoes and corn contending with blackberries and beans for sunlight. A dozen bird feeders hang from trees just feet from his back door.

When he can find time, he also gives the Orem High swim team a hand, acting as the travel coach. All five of his children have swum competitively, which Mower says teaches discipline. It's the same thing, perhaps, that has helped Mower as mosquito-abatement director.

Though West Nile numbers are up dramatically this year, they're not nearly as high as they might have been without the extra spraying Mower has commissioned. County data shows mosquito numbers peaked at less than half of last year's high. Mower "really has been on top of very close, accurate monitoring of the mosquito traps," Miner says.

But Mower's work is not done. Even though most of his part-time crews have returned to school, teaching positions or other jobs, there still are plenty of mosquitoes carrying the virus. And the pesky suckers will be back again next year. As will Mower,

sloshing around the muddy marshes, battling bugs, bolstering his creepy collection and protecting the public

health.

Editors Note: Bob Mower is a long

time member of the Utah Lepidopterists' Society.

## *Limenitis astyanax arizonensis* (Arizona Purple) reported from Zion National Park, Washington Co., Utah

The type locality of *Limenitis astyanax arizonensis* (Arizona purple) (Figure 1) is the vicinity of Tucson, AZ; Edwards, 1872. Many authors place *arizonensis* as conspecific with the *L. arthemis* (white admiral). However, it is the opinion of this author that *L. astyanax* is not conspecific with *L. arthemis* in spite of the large hybridization zone between the two taxa in the Eastern U.S. Evidence shows that any contact zone between any North American species of the subgenus *Basilarchia* shows differing degrees of interbreeding, including with *L. archippus*. Boyd, Boyd, Austin, and Murphy also demonstrated that *L. lorquini* and *L. weidemeyeri* are not conspecific in the Western U.S. in spite of discovering additional hybrid zone populations in NW Nevada (See Holarctic Lepidoptera 6:2, pp. 37-74.).

The Utah state record for *Limenitis astyanax arizonensis* is 30 Jul 2004, Big Spring at Virgin River Narrows, Zion National Park, Washington County. The state record was discovered and reported by "Ranger Steve" Mueller in The News of the Lepidopterists' Society 47:3, p. 95. He reports, "The butterfly was observed for several minutes flying among the trees at Big Spring. It approached a Weidemeyers Admiral and appeared to unsuccessfully court it."

Previously, it was theorized that this butterfly might penetrate Utah by way of intrusions up the Virgin River from established colonies in Northern Arizona. This prediction has apparently become reality.

Before that time, *L. a. arizonensis*

was only listed as hypothetical for



Figure 1 - *Limenitis astyanax arizonensis* (Arizona Purple). Top Row: male dorsal, left; male ventral, right. Bottom Row: female dorsal, left; female ventral, right

Utah. However, by personal communication, John Emmel reported that when he was of high school age on a family vacation in either September of 1960 or 1961, he remembers sighting a *Limenitis astyanax arizonensis* on the Emerald Pool Trail, Zion National Park on what was probably willow. Being unfamiliar with Utah's fauna at the time, it did not seem unusual to him even though he was very familiar with the phenotype.

### Utah Distribution and Habitat

Established colonies of *arizonensis* have not yet been confirmed for the state. However, "Ranger Steve" did report that adequate habitat and hostplant (*Salix* spp.) were available at the locality of the state record in the narrows at Zion National Park.

### Bionomics

The Arizona purple uses a variety of species of willow, cottonwood, and choke cherry. The life history of the genus is well documented as females oviposit on the tips of leaves (Figure 2) of medium sized trees as well as on short, isolated seedlings. The first instar larva hatches roughly five days after oviposition [lab conditions] and starts constructing a perch by eating away at the leaf tip, leaving the vein intact. It then extends the vein with silk and dung pellets creating a somewhat conspicuous and unique nest. For some reason young instar larvae also construct and mobilize along the base of the perch a small spherical heap of leaf debris and dung pellets.

Unlike first instar larvae, freshly-

molted second instar larvae show a visible saddle which contains a photo receptor that monitors day length in order to assess whether or not they will hibernate at third instar or continue to adult. If photoperiod is less than a given threshold, larvae begin preparing for diapause. This is initially evidenced by third instar larvae as they move away from their perch at the end of the leaf and begin “silking” the stem of the leaf to the branch, insuring that it does not fall during the winter months. These third instar larvae (Figure 3) then chew

away the non-essential portions of the leaf leaving behind a template for constructing a rolled leaf hibernaculum. The larva then attaches the edges of the leaves together with silk essentially creating a tube with an entrance and a walkway (Figure 4).

Upon completion, the third instar larva will still leave the hibernaculum a few times in order to feed before settling in and hibernating for the winter. The hibernaculum is constructed and “silked” in such a

way as to create a snug fit for hibernation which is necessary as diapausing *Basilarchia* larvae can desiccate under arid conditions.

Once the hostplant starts budding in early Spring, the hibernating larva breaks diapause and begins feeding. It usually takes between two to four weeks to complete growth and development before pupating. Figure 5 shows a fifth instar larva of *Limenitis astyanax arizonensis*.

Written By Todd Stout



Figure 2 - *Limenitis astyanax arizonensis* ovum on tip of willow leaf.



Figure 3 - Third instar larva of *Limenitis astyanax arizonensis* illustrating typical feeding pattern.



Figure 4 - This hibernaculum of *Limenitis lorquini burrisoni* is typical of all North American *Limenitis* species.



Figure 5 - Fifth instar larva of *Limenitis astyanax arizonensis*.



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“Andy” with his little buddy “Skip.” Photo by Bill Bouton