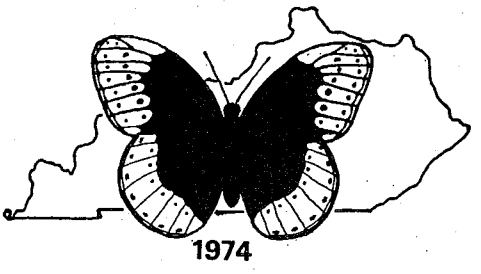
KENTUCKY LEPIDOPTERIST

Newsletter of the Society of Kentucky Lepidopterists

VOLUME 21, NUMBER 1: FEBRUARY 1995

BARRY S. NICHOLS, Editor
7004 Ethan Allen Way,
Louisville, KENTUCKY USA 40272
BITNET: BSNICH01@ULKYVM
INTERNET: BSNICH01@ULKYVM.LOUISVILLE.EDU

recycled paper



EDITORS' NOTES

Congratulations to our President James Adams. On August 5, 1995 James married Kathy Parker. Kathy is working on her Master's degree in Early Childhood/School Counseling. They'll be heading out west on a Honeymoon/Collecting trip from August 26 through Sept. 18. In November, James hopes to bring Kathy to the KLS meeting. We wish you some happy collecting!!

We also welcome Paul Florence as the newest lepper in Dr. Covell's lab at the University of Louisville. He still works with the Odonata but has metamorposed slightly.

The deadline dates for the rest of the year are:

21:3 August 1, 1995
21:4 September 12, 1995.

PLEASE mark these dates on your calendars or maybe make a mark one week in advance of these dates. Thanks.

When submitting something of a timely nature (field trips, events, etc), please allow about 4 weeks after each deadline for newsletter completion.

My article file is EMPTY. We need your submissions. The most common question I am asked is "What kind of articles, notes, etc., do you want for the newsletter?" My answer is ANYTHING. If it is of interest to you, it is probably of interest to someone else. Collecting trip accounts, famous and/or important collections or collectors from (or around) Kentucky, type localities, rearing methods, trap design, lep photography, butterfly & moth gardening, etc. are all interesting topics. WE CAN ALSO USE PHOTOS. The newsletter needs YOU! As we have many new members, I am repeating details for submission to the newsletter below.

Please put your full name, address, and phone number on the title page of your submission. I often need to get in touch with the writers and some of you are hard to track down.

The full genus and species names as well as author citation, should be used. In the event that a species (or several species) is (are) repeated in your article, only the first citation need include full genus name

and author. Also, those of you with the Checklist of the Lepidoptera of America North of Mexico (nicknamed the "MONA checklist") are asked to include the Checklist number with the first citation of each species. Please also consider using common names in addition to species names. More than a few members may find this helpful as well. Common names should also have the first letter of each word capitalized. These things will help to insure a timely newsletter and a more rapid inclusion of your submissions. Your efforts are much appreciated.

FOR THOSE OF YOU USING COMPUTERS, PLEASE send your submissions on disk (any size) in DOS or ASCII text. I can now also accept MACINTOSH documents. I will return all disks. I can also take documents in nearly any word processor. If you have another program and need to figure out how to transfer into DOS or ASCII text, drop me a line or call me at (502) 583-5835, speak into the answering machine and if I'm home I'll pick up.

You may also send contributions by ELECTRONIC MAIL to me at the following addresses:
BITNET: BSNICH01@ULKYVM
INTERNET: BSNICH01@ULKYVM.LOUISVILLE.EDU
This is, in fact, much easier than mailing disks, and you'll get an immediate reply. Those of you on online services and some Computer Bulletin Board Systems can also send mail to these addresses.

When submitting pictures, please send me copies that can be cut. I need to be able to crop them to fit.

The NOTICES section is a free service to SKL members. Organizations, businesses, etc. may also run ads for the price of membership. All notices, research requests, etc. will run for two consecutive issues unless notified to extend them or to terminate them earlier.

I have restructured the upcoming ***LEP BEHAVIOUR*** column. Please submit your observations under the following format:

I. NECTAR PLANT:

1) **Species of both plant and lep** (and sex where possible).

2) **Numbers of individuals** w/in the species (and sex) engaging in nectaring.

3) **Site, location, and date.** For site, please be as precise as possible. For location please include County, State, and any other information that may be of use. For date, please write out the name of the month or use roman numerals to designate the month.

II. OVIPOSITION PLANT:

1) **Species of both plant and lep**

2) **Numbers of individuals** w/in the species engaging in ovipositing.

3) **# of eggs laid on plant and any characteristics of oviposition pattern** (large rounded mass, ring of eggs, single eggs, etc.)

4) **Site, location, and date.** For site, please be as precise as possible. For location please include County, State, and any other information that may be of use. For date, please write out the name of the month or use roman numerals to designate the month.

III. FOODPLANT:

1) **Species of both plant and lep**

2) **Numbers of individuals** w/in the species engaging in feeding (larvae).

3) **found on plant in field or tested by rearing**

4) **if found in field, part of plant were larvae found, numbers of individuals found**

5) **Site, location, and date.** For site, please be as precise as possible. For location please include County, State, and any other information that may be of use. For date, please write out the name of the month or use roman numerals to designate the month.

6) **Other info** (length and/or shape of leaf mines; location on plant-in stem, on leaf, etc.; larval behaviour; etc.)

IV. ARTIFICIAL OR SUBSTITUTE DIET:

1) **Species of lep**

2) **Numbers of individuals** w/in the species at start of rearing and total number reared successfully.

3) **description of diet mix or alternative food source** (vegetables, feeding mixture, etc.), how it was used, and any notes).

4) **Site, location, and date for eggs, larva(e), and/or ovipositing adult.** For site, please be as precise as possible. For location please include County, State, and any other information that may be of use. For date, please write out the name of the month or use roman numerals to designate the month.

V. OTHER BEHAVIOURS (taking nutrients from puddles, carrion, rotting fruit, feces, etc.; and any other behavioural notes not included in sections I-IV.

1) **Species of lep** (and sex where possible).

2) **Description of behaviour observed.**

2) **Numbers of individuals** w/in the species (and sex) engaging in behavior.

3) **Site, location, and date.** For site, please be as precise as possible. For location please include County, State, and any

other information that may be of use. For date, please write out the name of the month or use roman numerals to designate the month.

Additional considerations:

Please confirm egg laying). Common names for plants should include as much of the scientific name as is possible. Where this is not possible, please provide as much information as you can. If you send a large pressed piece of a plant with any leaves, seeds, flowers and other features, we may be able to make an identification here. Information on foodplants of reared specimens is also appreciated but should be designated as "reared". In all sections, any notes pertaining to the event (behavior, habitat, time, etc.) would also be extremely helpful.

ANYONE can provide information for this type of column. The information can be used by a variety of people including gardeners, ecologists, lep watchers, etc. Pictures of these observations are also welcome. Please consider helping out with this feature. Have questions? Please call me at work:(502) 852-6771; home:(502) 583-5835; or Email me at BSNICH01@ulkyvm.louisville.edu.

U.S. Fish & Wildlife Regulations: The Effects on and the Responsibilities of the Kentucky Lepidopterists' (and other Lepidopterists Groups): A Presidential Opinion

by James Adams
Dalton College,
Dalton, Georgia

First of all, I would like to thank the Kentucky Lepidopterists' for considering my abilities adequate to represent the organization. I realize that the responsibilities of the president are scant, the major one being presiding over next year's meeting. I do, however, as a representative of the Kentucky Lep. Soc., and as a concerned scientist, intend to keep abreast of the growing concerns involving the U.S. Fish and Wildlife Service (F&WS), and to also be as involved as necessary concerning the potential of the 50th annual meeting of the Lepidopterists' Society in 1996 being held in Louisville.

I am fully cognizant that there is continuing concern over the recent occurrences in the U.S. involving different federal and state regulations and their effects on collecting, collections, and collectors. At the November meetings, I was made aware that members were particularly interested in a compendium of U.S. F&WS regulations, (and would probably be interested in a state by state summary of the regulations), as they apply to the activities of lepidopterists, and to specimens which may already be in collections. One major problem with such a lofty (and virtually impossible) undertaking, however, is that with both federal and state regulations, the wording is such that many of the regulations are open to several interpretations. For instance, I have read some state regulations which, if taken in the absolute sense, would prohibit the collecting or killing of virtually **anything**, not only insects, but other organisms such as parasitic worms inside human beings. These same regulations also could be interpreted to prohibit swatting a mosquito, stepping on any insect, driving a car (can't hit any organism with a car), using "bug-zappers", or even taking drugs to kill internal pathogens or parasites. Needless to say, this is clearly not the intent of the regulations, but then I truly believe that in most cases it was not the initial intent of the originators of the legislation to prohibit most collecting of insects. It is therefore our responsibility to work **with** the U.S. F&WS, and the appropriate state agencies, by expressing our concerns and aiding in clarifying the (re) wording of the regulations. Antagonistic interactions with state and federal agents only tend to fuel the fire, and do little to improve the situation we are currently working under. I must admit, however, that it is infinitely frustrating to be faced with much of the current confining legislation. For instance, the Lacey Act, although decent in its intent, can be used, in essence, to enforce other countries' permit regulations when their own bureaucracies more often than not choose to ignore the same legislation (as I have heard in the case of Mexico).

Another problem we may encounter is that the attitudes of different members of the state and federal agencies are vastly different. Most of the regulators I have had contact with have been very helpful in working through interpretations of the law, and very open to discussions on different regulations and their effects on the scientific community. However, many of us have heard horror stories (whether they are true or not) about colleagues being "visited" by federal employees. These federal agents, in most cases, are not aware of the intent of the original investigator (nor would it make a difference if they were), nor do they

take into account the importance of amateur work, for instance, on life history traits. Strict enforcement of laws is their job, which, needless to say, could lead to some tension in any discourse attempted. Clearly, again, this was not likely the objectives of the originators of the regulations -- that Billy (or his parents) collecting bugs in his back yard could be fined thousands of dollars and sent to jail for years. As such, I think most of us are aware that fair and impartial enforcement (equal protection under the law) of the regulations is also impossible, and well beyond the capabilities of the U.S. or state agencies. So, to reiterate, it is our responsibility to work, as much as possible, **with** the regulators and enforcement agents to help them understand what the intent of the scientific community actually is, and what the scope of regulating insect collecting really involves. I am not saying, nor would I ever intend to say, that collecting of some insects, certainly in some areas, should not be regulated. Many insects deserve the same protection that the law provides to rare plants and vertebrates. However, as the life history characteristics of insects are so vastly different from that of plants or vertebrates, specific legislation should take into account the huge reproductive capabilities and rapid replacement potential that insects have. Indeed, the best way, as I'm sure most of us are aware, to protect insects, or any other organism for that matter, is to preserve ecosystems, as the most intense danger to virtually any organism is habitat destruction. Single species legislation does draw attention to problems being faced by different organisms, but in some cases may offer little chance of salvation if their ecosystem is not protected. think about how pointless it would be, for instance, to federally protect an insect if, for instance, its rare foodplant is not preserved.

Another responsibility we have, both as individuals and as an organization, is to educate people about lepidoptera and the purposes of collecting. The public needs to be made aware of the importance of collecting and collections, and that collections are not simply to fulfill a person's desire to "fill a hole" or "triumph over that rare bug." They also must be made more aware that most butterflies or moths, when collected, have already reproduced, as most do so in the first few hours after eclosion (though this is not always the case). And even if collected before reproduction, most species have such huge replacement capabilities that a few individuals make little difference to populations as a whole. It is, of course, also our responsibility , not to overcollect any given species in a given area. I have heard about collectors who go into isolated populations of lep species and collect absolutely every individual they see (sometimes up into the 100's or even 1000's). This kind of behavior presents a bad image to the public which they may generalize to collectors as a whole. Needless to say, this makes our job of communicating our concerns to the federal and state legislators even more difficult, as they may be motivated by public outcry against collectors.

The best way to keep abreast of updates in legislation and current action being taken against different individuals is to be in contact with the individuals who are involved, and with the advent of the information superhighway (e-mail), we often have access to these people, or other associated individuals, directly. We can also, therefore, rapidly express our concerns and opinions to those same individuals. The quickest way, therefore, to know what is going on is to stay in touch with other lepidopterists, and scientists in general; report any updates you come across in the KLS newsletter, or other appropriate, rapidly published periodicals. Even so, whether you want to hear this or not, it will undoubtedly take a significant amount of time to see any major changes in federal legislation, and may take even longer on a state to state basis, as the regulations may vary significantly between states. Communication between scientists, between scientists and the legislators, and between the scientists and the public, is going to be the only way to have even a reasonable chance of changing the future regulations we may be faced with. The recent resolution that the KLS sent to the U.S. F&WS is a good beginning, but the communication channels need to extend far beyond, to your congressmen, etc. as suggested at the most recent meetings. We must remain positively motivated, as much as possible, if we wish to make important changes to allow both the scientific and amateur communities to reestablish the important links that lead to advancement in the study of Lepidoptera, and to scientific accomplishments in general.

1995 Field Trips: The Lineup thus far...

Paul A. Florence
Department of Biology
University of Louisville
Louisville, KY

There will be a trip to Fulton Co., Kentucky the week end after Labor Day. September 9-10. We will meet at the Quality Inn Saturday and Sunday mornings at 9:00 a.m. For more information contact Charles V.

Covell at work:(502) 852-5942; home:(502)456-6122; or Email him at CVCOVE01@ulkyvm.louisville.edu.

The trip to Pine Mountain Wildlife Management Area will be on September 23-24. We will meet at the Parkway Inn (Lodge) in Whitesburg, KY. This is off of route 15, at the edge of town. The phone number for the Inn is (606) 633-4441. For more information on either of these trips please contact me at (502) 852-6771 (or 6772) or e-mail me at PAFLOR01@ulkyvm.louisville.edu

Comments on the "Changes to the KLS Constitution" (Preston 1994)

by James Adams
Dalton College,
Dalton, Georgia

Change 1: fine.

Change 2: In all the time I have been attending meetings, I have had the impression that the candidates were actually selected at the meetings. Although you may not always be guaranteed of having willing participants, it seems to have worked to this point. This proceedure is simpler yet than that proposed by Preston, though I would not be offended to reword article 4(b) as Preston suggests. If we do reword it that way, then we should FOLLOW that proceedure, not blow it off like has been apparently done in the past.

Change 3: For article 4(c), if the underlined words are eliminated, it would then read "The officers shall be of the members present..." This does not make sense. Eliminating the words "written ballot of", not "elected by written ballot", would be more acceptible.

Change 4-6: fine

I would propose two additional changes:

Change 1: Since we are talking about amending the constitution, I would also suggest amending Article 10 by eliminating the "and concurred in by a 3/4 affirmative vote of the board of directors." With the changes made at the last meeting, and the proposed separation of the Secretary/Treasurer position, the Board of Directors will now number seven. If it is felt that the Board of Directors needs some say in this, the the statement could be amended to read "4/7 or 5/7 affirmative vote..."

Change 2: Article 11(2) needs to read "All remaining assets shall..." (to fix the misspelling "shll")

The Monarch

by Rudy Klapheke,
Louisville, Kentucky

Monarch butterflies (*Danaus plexippus*) are found on every continent except Antarctica; but only in North America do they migrate en masse. (Monarchs must migrate because they are unable to survive extended periods of freezing temperatures at any stage of their life cycle.) Butterflies east of the Rocky Mountains overwinter in the mountains of southern Mexico, while those west of the Rockies fly to over 100 sites along the California coast.

We visited one of these California sites - Natural Bridges State Park - in early December 1994. Natural Bridges is the only California state preserve for monarchs and is located on the ocean at Santa Cruz.

In October, as daylight decreases, monarchs - following no specific route - fly southwest to the Pacific coast, feeding on nectar sources as they go. It is said they can go as fast as 30 mi./hr., as far as 200 mi./day, and even cruise at 10,000 feet, in a journey that can be as long as 3000 miles ! As they migrate - and build fat reserves for the winter - they cluster in small groups at night. But with the arriving winter, they seek shelter in more permanent overwintering locations. Natural Bridges is one such place.

Its mild ocean air provides a wintering site free from the deadly frosts of the inland areas. A eucalyptus grove planted by the early settlers - over 100 years ago - gives the butterflies a safe roost until spring, when they can fly back inland. The grove of eucalyptus trees is located in a canyon providing needed shelter from the wind. These winter flowering trees are also a convenient food source for the butterflies.

Once monarchs reach their overwintering sites, they begin to group together into clusters. Their combined weight helps keep them from being dislodged by the wind and rain. Since monarchs have difficulty flying at temperatures below 55° F, dislodged butterflies often end up on the ground and become

easy prey for predators. However, on warmer days above 55° F temperature, they can be observed flying about. This year for whatever reason, there is a low population of monarchs at Natural Bridges. Veteran observers say that in the recent past there have been as many as 100,000 or more overwintering. This years estimates range as low as 10,000. Weather changes are among the reasons given.

During late January and early February, increasing daylight hours signal reproductive instincts in monarchs. On warm afternoons during the mating period courting pairs drift down like falling leaves. Once on the ground the male attempts to couple with the female. If he is successful, he carries the pair, with the female dangling passively below, up into the branches of a nearby tree. The pair may remain coupled overnight as the male passes sperm and a nutrient rich spermatophore into the body of the female. She uses the nutrients in the spermatophore to produce eggs and to help power her flight on her return migration in the spring. The sperm are stored for use in fertilizing the eggs that will give rise to the first generation of "spring" monarchs. Females begin to leave the overwintering sites in February and begin to seek out milkweed.

Several generations of "summer" monarchs will be born between the time this year's monarchs leave Natural Bridges and next year's overwintering generation of monarchs arrive. Summer monarchs live only a month or so, while the overwintering generation lives anywhere from six to nine months. Hence there are no "leaders" that direct a new generation of monarchs to an old wintering site. It's mystifying how this could be. Is this information genetically encoded and passed onto the next generation of caterpillars ? Inquiring minds want to know...

There is still much speculation about how monarchs return to the same overwintering grounds. The earth's magnetic field, as well as the position of the sun and the polarization of its rays are tow components of navigation likely to be involved with the mystery of monarch migration.

Some Observations on *Cercyonis pegala*

by
Joel M. Johnson
Payson, UTAH

Finding a number of *Cercyonis* sipping at rotting summer apples on our Benjamin, Utah Co. farm, back when I was a teenager, aroused my initial interest in them. Our farm, a part of which I later purchased and still operate, has been a locality where *C. pegala* could always be found in their season. It still has clumps of trees, a small orchard, native shrubs and, of most importance to the *pegala*, grassy ditch banks and fence rows and pastures which are not all burned off or sprayed, which is not true of most of the surrounding farms. A small stream runs through it on its course to Utah Lake, part of the district drainage system, following an anciently abandoned channel of the Spanish Fork River, which now runs a mile or two to the north. The farm therefore has a variety of purposely preserved habitat that protects many kinds of birds, butterflies, moths, etc.

Floyd and June Preston, of Kansas, during a visit in July a few years ago, took a long series of *pegala* on my farm. Many of them were netted from a patch of blooming dogbane, a nectar source they seem to favor. They also nectar on alfalfa blooms.

The first *pegala* males of a summer in this area appear within a day or two of 20th June and the females come out a week or ten days later. Freshly emerged individuals have a beautiful greenish, iridescent sheen to their wings that disappears within a day or two, and does not show up when they are mounted. The flight period ia at its peak about the first week of July. A few female stragglers can be found into early September. Probably due to loss of wing scales, or to sun bleaching, the females become lighter colored as their season progresses until some are a light buff. Even in as limited an area as my farm, there is a great deal of variability in number and size of eyespots, in shade of brown, in amount of yellow on the dorsal fore wings and in how pronounced the striations and lines of the ventral wing surfaces are. One need a series of several to show the general phenotypic characteristics of an area.

George T. Austin gives a very detailed description and analysis of the main phenotypes of *pegala* found in our Great Basin area in Bulletin of the Allyn Museum, No. 135, 6 August 1992, 60 pp. The subspecies and forms he discusses are well illustrated in several plates of photographs in this bulletin. I concur pretty well with his findings. On 6 July 1989, I helped George Austin collect a long series of *pegala* from my farm and in the nearby Spanish Fork River bottoms. These became the type series from which he

described a new subspecies, *Cercyonis pegala utahensis*, naming my farm as the type locality.

My personal collecting has shown that a definite cline exists between two very different phenotypes of *pegala*, centered near the Utah-Idaho border. Austin has noted this cline also. Not that the butterflies are partial to political boundaries, but probably because this border is near where the habitat of the Great Basin fades into that of the Snake River region. From Juab and Utah counties northward to at least Tremonton along I-15, and to near Wellsville in Cache County along Hwy. 91, the phenotype is typical *utahensis*; prominent, wide striations on the under wings, five or six ocelli on each ventral hind wing (VHW), most with white centers, one to four ocelli on the dorsal hind wings, two larger ocelli on the dorsal fore wings surrounded by a yellow field.

At Riverside, a few miles north of Tremonton, you begin to pick up a few individuals with fewer VHW ocelli, and at Portage a little farther north and just short of the border, the VHW eyespots are definitely fewer and smaller and the striations more dim. Around Malad City, some twenty miles into Idaho and near I-15, you are about at the top edge of the cline and the appearance is near that of the subspecies which Austin named *C. pegala paludum* except a little darker brown on average than *paludum*.

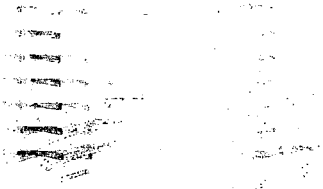
Collecting in a hay field a mile or so south of Wellsville on the east side of Hwy. 91, the *pegala* had fewer hind wing ocelli on the average than *utahensis*. In this one locale, (not a cline feature), the several *pegala* taken had more of a yellowish brown general background color than any I have seen. Going north on this highway a few miles to Richmond, almost at the border, I took another good series just out of town along a road running west. These showed definite intermediate characters between phenotypes *utahensis* and *paludum*.

About twenty miles north into Idaho at the Oneida Power Plant on the Bear River in Franklin Co., (I had gone there to visit my son who was in charge of some repairs on the plant. This trip, going up Hwy. 91 and returning via I-15 was made 15-16 July 1985), *pegala* were abundant at the plant and I captured a good series there. These were more typical of *paludum* phenotype: few or no VHW ocelli and these small when present, ventral wing striations and line dim, dorsal fore wing eyespots smaller than on *utahensis* and usually not with a yellow field. Some females at Oneida had a whitish, clouded appearance on the ventral hind wings and on some the dorsal fore wing eyespots were centered with a light blue.

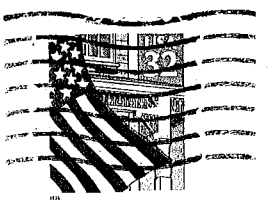
I will mention a couple of incidental observations not directly related to the cline. The *pegala* at Mink Creek, Franklin Co., Idaho have the most pronounced blue in their dorsal fore wing ocelli of any place I have collected. The cemetery there is the best place to find them in numbers. I have seen them there several times when visiting my sister at Mink Creek.

When Wayne Whaley, my son Eric, and I were returning from a trip to Togwotee Pass, 5 August 1982, we found a veritable population explosion of *pegala* of a phenotype near *C. pegala ino* at Jackson, Wyoming. The *pegala* were flying in great numbers, even up and down the main streets of Jackson, also in the meadows south of town.

In collecting roadside and alfalfa fields just a few hundred yards west of the I-15 off ramp at Portage, Utah, 16 July 1985, I was finding numbers of very fresh *pegala* and about as many that were very worn, and no apparent intermediates. I had intended to investigate this puzzle by going back to the site in later years, but then got into moths and never followed up on it.



FROM: BARRY S. NICHOLS
Department of Biology
University of Louisville,
Louisville, KY 40292



Loran D. Gibson
8496 Pheasant Drive
Florence, KY 41042
pd95