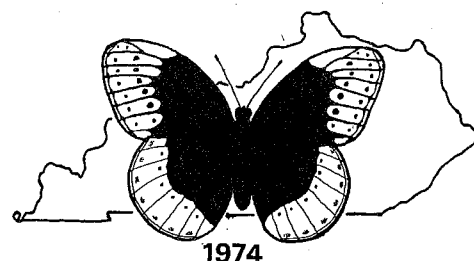

KENTUCKY LEPIDOPTERIST

Newsletter of the Society of Kentucky Lepidopterists

VOLUME 18, NUMBER 4: OCTOBER 1992

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EDITORS' NOTES

We had a problem with the last issue and the U.S. Postal Service. The back page was too full to permit the mailing labels so I stapled on a cover sheet. During the mailing many had their cover sheets ripped off. Some members received just the ripped cover sheets. William Thoeny, whose name appeared at the end of the last page has received five or six copies (sans cover).

Please make note of the section on the annual meeting later in this issue.

The NEWS & NOTES section will change format somewhat starting with this issue. It has been traditionally a place to put smaller announcements, notes, etc. gleaned from a variety of sources as well as other members. From now on, members will be identified with their contributions to this section. Members sending in more than one contribution will have their full name printed at the end of their first note. They will be identified by initials for additional notes in the section. This should make it easier for members to contact the proper person for further information.

Tentative deadlines for the first two issues of volume 19 of the Kentucky Lepidopterist are as follows:

19:1 January 15

19:2 April 15.

Please make note of these dates on your calendar.

I have one article left in my article file. If you've been wanting to get an article sent in, now is the time. Articles on any aspect of Lepidopterology are welcome. Also welcome are

any news, notes, notices, etc. that you care to submit. Please send them to me at the address above or send to one of my E-mail addresses given in the "Members Notices" section. For those of you with computers, submissions on computer disk (any format) are highly desirable. All disks will be returned.

STUDY OF LEPIDOPTEROUS GENITALIA: CHAPTER 5 by L. P. Grey

This series of articles began in KY LEP 17:4, page 2, with a promise to describe quite fully the procedures needed to prepare lepidopterous genitalia. The justification for adding another to the long list of such references was to instruct "never haves" needing especially detailed descriptions of apparatus, reagents, technologies and reasons for doing things, which usually are treated on cursorily. How far this goal was attained, soon can be judged. If some members have been practicing the steps outlined so far, i.e., preserving data, breaking off abdomens, saponifying in KOH, cleaning vestiture, staining in water and fixing in alcohol, they are ready now to attempt the dissections, etc., to fit their specimens for display in a microscope slide. So, to carry on:

Some students consider the male genitalia to be sclerotic enough to show characters well without staining. However, it seems advantageous to stain both sexes exactly alike. One important outcome with the males is to reveal an extremely thin membrane, an extension of the eighth sclerite, which often is wrapped high around the genital capsule, hindering free movement of the valvae. These latter organs should be spread open to a uniform position since the centrally attached juxta (fide Forbes) sometimes has a diagnostic shape

which may be compromised by differing anglings of the valvae. So, removal of all confining tissue is a priority when the genital capsule (and the attached aedeagus) is slipped free from the abdomen.

The aedeagus is removed next, gently teased out "backward" (cephelad) and the trailing spermatic duct is clipped close to its point of entry. The staining usually enhances a view of internal characters; sometimes a delicate outer membrane can be "skinned" away. If the vesica (the true penis) is not everted . . . which is no job for a beginner . . . the aedeagus now is ready to transfer to 99% alcohol for dehydration. It is put in a separate dish and weighted down with a cover glass. By rolling to a desired lateral outline and flattening slightly, a uniform viewing angle is facilitated when embalming in a slide.

The empty abdomen also can be separately dehydrated after final scrupulous cleaning inside and out. After plumping to shape, a cover glass holds it while stiffening. Male abdomens always should be preserved; now and then they have diagnostic characters, coremata ("hairy patches"), etc. Occasionally one finds ingrained damage, badly blackened tissue; perhaps this is a sign of depredation by red spider mites?

No attempt will be made to define the terminologies used for various genitalic structures; the student should be able to find labeled figures which abound in the literature. Another digression, a beginner might be encouraged if told that the olympian experts, when approaching a group new to their experiences pretty surely will have to make some tentative explorations to find best procedures. And it should be shouted that the frequent warnings to "avoid distortion" are so much silly nonsense. Pray tell what dissection is not seriously "distorted" when arranged to show to best advantage the characters peculiar to and definitive for a particular species or genus!

Valvae should be worked open in every bath, shaping to facilitate final positioning. At the same time the tegumen may be rolled somewhat, to permit a good lateral view of the uncus. The latter all too often is squashed down between the valvae, obscuring other characters as well as its own shape. Another sin to be avoided is allowing the aedeagal sheath to droop down and obscure the juxta; it should be pushed up into the tegumen area.

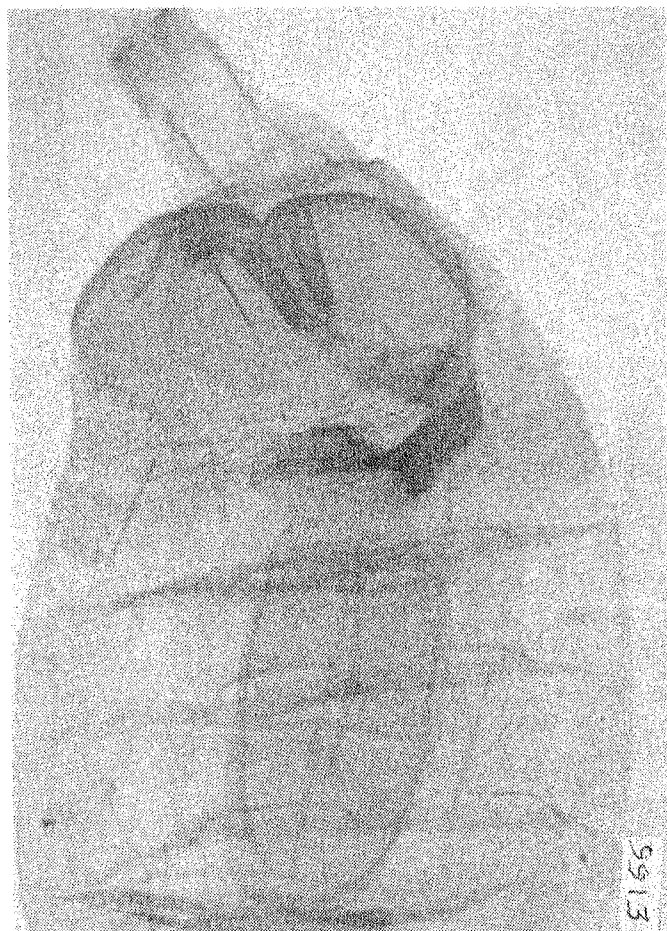
To finish cleaning, the idea is to remove all air bubbles and debris, to pluck or break away most of the remaining spicules, with the joint aims of unveiling to give sharper outlines and getting rid of as much as possible that might work loose to disfigure a finished slide. One important exception is the heavy "beard" sometimes occurring on penicilli; these must be left inviolate; any tugging will rip sensitive tissues.

When running dissections into the 99% dehydration bath, after all the desired shaping, I recommend (unorthodox!) applying as much pressure as a restraining cover glass will permit without breaking, and then dropping on a nickel for do measure, to increase the "distortion." Actually, what often happens is that some partly folded structures or tissues may open further and thus better reveal their true shapes.

Procedures for females are different and in some respects simpler than for males, thanks to the CB injection. Often by exterior brushing and interior cleaning a "see-thru" results, so that the entire genitalia is seen almost as well as it is after a, full-blown dissection. An added advantage is the "certifiably natural" positioning which can serve as a guide when arranging a conventional dissection of the same species. In fact, specialists would be well advised, for that reason, to make some "see-thrus" along with the usual slides made for revisional studies.

I haven't run across descriptions of this methodology in the literature. If it is new, some

part of the credit should go to the versatile chlorozol Black "E". But, the "see thrus" are far from effortless; they demand a lot of fishing with the long thin-point forceps and the iris scissors. One can, with care, get surprisingly far up through the thoracic end opening to remove air bubbles, unwanted tissue and debris, sometimes even getting to the ostium bursae and usually to clean out around the inctus bursae.



"SEE THROUGH" prep photo by L.P.Grey:
Lithophane georgii Grt. (MONA # 9913), female, taken at
Enfield, Maine, October 18, 1984, Collector: L.P.Grey

The inctus seminalis plus some remnants of the ovarian sac are a major site for "dirt." Since the only usable character here is the exact point of attachment to the corpus bursae, the bulk of this tangle can be clipped off and withdrawn.

Usually some air bubbles remain trapped in the corpus bursae and have to be chased out through an inconspicuous slit cut at the terminal end. To further aid in battling the air bubbles, let tap water "set" in a vessel for a week if not with access to distilled. Keep pressing and poking to detach, squeeze out, hook out, etc. Never let the abdomen dry. Keep it in liquid constantly. These hints regarding cleaning may as well end: every specimen will differ in individual challenges which only practice and experience will overcome.

If conventional dissections are desired, some trouble may be encountered with their "floppy" behavior when being transferred through early baths. A useful "pick-up" tool can be contrived from a set of spade tip butterfly forceps, broken in two, taking one piece, heating the tip and bending to make an angled spatula. Useful ideas of what one is aiming to achieve may be gained by studying photographs (and occasional instructions) in various widely available monographs. Usually female abdomens are quite featureless; I often sacrifice them by scissoring close to the edges (with great care not to nick any closely rubbing bursae) and discarding the entire abdomen after detachment. But, the latter chore often is no mean feat, requiring gingerly trials to ascertain just where the abdomen will best detach. In some species the sclerite around the ostium area undesirably obscured by the last regular (7th) segment, but c'est la vie. Finally, the overpositor lobes may require care in positioning; they sometimes carry specific identifications on their spicules.

To conclude, the beginning preparator will encounter vexations too numerous to have been warned against in these articles. Among various examples, minimizing air bubbles which from start to finish must be guarded against by slow and careful transfers. These are learned behaviors. Enough has been said to allow entry into this enchanting world, to start the learning experience.

Making microscope slides is a separate art. Perhaps some KY LEP member will volunteer to conduct a few seminars. I wish, however, in closing, to put in a plug for Euparal as a mounting medium. It is water white, fully miscible with isopropyl alcohol for which it does double duty as a clearing agent. How simple these transfers, compared with our early struggles with ethyl alcohol and uncertain dehydration, the follow-up with expensive vegetable oil clearers, the poisonous xylene and the age-darkening Canada Balsam! The only drawback to Euparal is its slow drying time, which is readily overcome by heating. And it is not a new product with an uncertain future . . . our British cousins have been using it for decades.

So now . . . happy days at the microscope!

THE 19th ANNUAL MEETING OF THE
KENTUCKY LEPIDOPTERISTS'
by Charles V. Covell, Jr.

Come to the best annual meeting ever. Festivities begin Friday afternoon, Nov. 6, with seminar in Life Sciences Bldg. room 25 at 3:00 PM by our special guest, Dr. Boyce Drummond. That talk will be entitled "MATING STRATEGIES IN BUTTERFLIES," and will be well illustrated. Then at 8:00 PM we will have our annual party at the Covells', 2333 Brighton Drive, Louisville. Covell will show some video film of the August 1992 field trip to Taiwan. The following morning, the University of Louisville collection (Room 321 in the Life Sciences Bldg.) will be open for identification and examination. Charles Covell will help identify your unknown Lepidoptera. Bring things to "show and tell," and for the door prize drawing later on (we had enough prizes last year for everyone to get something). At 1 PM we will have a short business meeting; then we will have an excellent program. Boyce Drummond will talk about the ecology of Latin American rain forest butterflies.

James Taylor of Savannah, GA, will give a presentation entitled "INTERACTION OF THE MORMON METALMARK WITH ITS FOODPLANT." Other presentations, slide shows, and "show and tells" are invited.

It looks already as though we will have a fine turnout this year. Please let Covell know if you are coming, and ask him for directions, motel info., etc., and what, if any, presentation you plan to contribute. Call him at work (502) 588-6771 or at home (502) 456-6122; or write him at Dept. of Biology, Univ. of Louisville, Louisville, KY 40292.

KENTUCKY FIELD NOTES
by Charles V. Covell

Fall Field Meeting of the Kentucky Lepidopterists was held in Fulton County, KY, Sept. 11-13. Present were William R. Black Jr. of Paducah, KY, Stephen Lech, Phil Jaeger, Galen Rasch, Alex Glascock (student at U. of Louisville), Edward Sadler of Andover, United Kingdom, and Charlie Covell. Covell and Glascock stopped at Pennyryle Forest State Park on the way out on Sept. 11 and recorded 17 butterfly species, including Covell's first capture of Calephelis muticum McAlpine (4391). Other interesting species included Hesperia leonardus Harr. (4023), Poanes zabulon (Bdv. & Leconte) (4060), Phoebis sennae (L.) (4228), Eurema lisa (Bdv. & Leconte) (4237), Speyeria cybele (F.) (4450) (fresh females), Asterocampa clyton (Bdv. & Leconte) (4562.1), Enodia anhedon (A.H. Clark) (4568.1), Cyllopsis gemma (Hbn.) (4573), and a worn Hermeuptychia hermes (F.) (4574). The group gathered next morning at the Quality Inn, Fulton, and proceeded to the swamp near Cayce. There we discovered that hunters had built a small wooden bridge across Little Bayou de Chien making access to the interior easier. At this site we recorded 27 butterfly species including Lerema accius (J.E. Smith) (3998),

Euphyes dion (Edw.) (4072), Poanes yehl (Skin.) (4063) (common), Libytheana bachmanii (Kirtland) (4410), Vanessa cardui (L.) (4435) (common), Junonia coenia (Hbn.) (4440), Euptoieta claudia (Cram.) (4447), Asterocampa clyton (Bdv. & Leconte) (4562.1), Enodia portlandia missarkae J.R. Heitzman & dos Passos (4568), Satyroides appalachia R. Chermock (4569), and Cyllopsis gemma (Hbn.) (4573). The climbing hempweed, strangely enough, was finished blooming. Butterflies were mostly on ironweed, small asters, goldenrod, and Eupatorium spp. We drove down to Hickman, where Bill Black had already put out a trap and some rotten fruit bait. Edward Sadler took a Southern Dogface, Zerene cesonia, and we marked and released three monarchs. Other species of interest included Eurema lisa (Bdv. & Leconte) (4237), E. nicippe (Cram.) (4242), Strymon melinus Hbn. (4336), Polygonia interrogationis (F.) (4420), P. comma (Harr.) (4421), Limenitis arthemis astyanax (F.) (4522), L. archippus (Cram.) (4523), Asterocampa celtis (Bdv. & Leconte) (4557), and A. clyton (Bdv. & Leconte) (4562.1).

Black light collecting at Little Bayou de Chien was poor that night. The moon was full, and it was a bit cool. On Sunday morning we returned to the Little Bayou de Chien spot and found a couple of new foci for Enodia portlandia missarkae J.R. Heitzman & dos Passos (4568), making it the most of these seen over the years. Most of the species seen the day before were seen again, with the addition of Atrytone logan Edw. (4051). We left in early afternoon, after tagging a few more monarchs. Along the way home Phoebis sennae (L.) (4228) was recorded in the first 10 Kentucky counties, flying along the interstate highways. For the whole weekend, 43 butterfly species were recorded.

While visiting in Kentucky, British colleague Edward Sadler made a few noteworthy captures. On the first day in Louisville he and his wife Jan went to the Kentucky State Fair and there he caught a Catocala maestosia Hulst (8793). During

his tour of Kentucky and Tennessee he collected a male Atlides halesus (Cram.) (4270) (Great Purple Hairstreak) with his fingers. He recently wrote that he enjoyed his visit to the States very much.

On Sept. 22 Charles Covell and Barry Nichols tagged several monarchs and collected along the Mayfair Road settling basins (off River Rd.) Jefferson Co. We also recorded Epargyreus clarus (Cram.) (3870), Erynnis baptisiae (Fbs.) (3959), Ancyloxipha numitor (F.) (4004), Polites coras (Bdv.) (4036), P. themistocles (Latr.) (4041), Atalopedes campestris (Bdv.) (4049) (extremely abundant), Battus philenor (L.) (4157), Pieris rapae (L.) (4197), Colias philodice Godt. (4209), C. eurytheme Bdv. (4210), Strymon melinus Hbn. (4336), Everes comyntas (Godt.) (4361), Libytheana bachmanii (Kirtland) (4410), Vanessa cardui (L.) (4435), V. atalanta (L.) (4437), Euptoieta claudia (Cram.) (4447), Speyeria cybele (F.) (4450), Clossiana bellona (F.) (4465), Phyciodes tharos (Drury) (4481), Limenitis archippus (Cram.) (4523), and Asterocampa clyton (Bdv. & Leconte) (4562.1).

NOTES ON Pseudexentera escala, P. creta AND THE CODE OF ZOOLOGICAL NOMENCLATURE by Barry S. Nichols

Back in issue 17:1, Richard L. Brown forwarded the following note:

"Correction to "Additions to the Kentucky List" in Kentucky Lepidopterist 16 (3). Two species of Tortricidae, Pseudexentera escala Cho and Pseudexentera creta Cho, were reported as new to Kentucky. These two names were manuscript names in a dissertation that is in preparation for publication. The names of these species are now invalid as they have been published without a description, and they must be removed from the Kentucky list. New names will replace creta and

escala in a forthcoming publication on Pseudexentera. As borrowed material is sometimes returned before publication is printed, it is essential that reports of new records or additions should be based on names that have appeared in publications rather than on names appearing on specimen labels."

After reading through "the code", these names appear to be nomina nuda and as such, are not necessarily invalid. As I understand the code, nomina nuda may be made valid if descriptions are published at a later date. If, in fact, the names have been changed, what happens to the availability of creta and escala? Are the names available for other new species within the genus? I would like to hear from anyone having any input on this situation. I'll run the responses as a discussion within the newsletter.

NEWS & NOTES

BUTTERFLIES OF THE BULOLO-WAU VALLEY by Michael Parsons. Bishop Museum Press, P.O. Box 19000-A, Honolulu, HI 96817. 1992. 262pp. Paperback \$34.95 plus \$2.00 postage and handling. [Text from announcement]. This convenient field guide, lavishly illustrated with color photographs, is the first modern book on butterflies of Papua New Guinea (PNG). It describes and illustrates all 373 butterfly species in the Bulolo-Wau Valley, home to about two-thirds of mainland PNG's butterflies. Eighty percent of the species are illustrated in color, including the spectacular birdwing butterflies (Ornithoptera), and detailed drawings highlight important features of the different species. Succinct yet thorough introductory chapters review biogeography, conservation ecology, economic importance, and identification. The book includes a convenient summary checklist of species and many new foodplant records. In presenting so much original information on habits, habitats and

larval hosts, this work makes a highly significant contribution to the otherwise scanty knowledge of the biology of the butterflies of the region. (Barry S. Nichols)

THE OWLET MOTHS OF OHIO (ORDER LEPIDOPTERA FAMILY NOCTUIDAE) by Roy W. Rings, Eric H. Metzler, Fred J. Arnold, and David H. Harris. Ohio Biological Survey, Museum of Biological Diversity, 1315 Kinnear Road, Columbus, OH 43212. 1992. 219 pp. 8 b&w plates, 8 color plates. \$20.00 plus \$3.00 postage and handling. No further information is available. (BSN)

BUTTERFLIES AND SKIPPERS OF OHIO by David C. Iftner, John A. Shuey, and John V. Calhoun. Ohio Biological Survey, Museum of Biological Diversity, 1315 Kinnear Road, Columbus, OH 43212. 1992. 212 pp. 40 color plates. \$40.00 plus \$5.00 postage and handling. No further information is available. (BSN)

The OHIO COLEOPTERIST SOCIETY has just been formed. Dues are \$8.00 (\$4.00 if under 19 years old) and may be sent to Kip Will, 684 Riverview Drive, Apt. 63, Columbus, OH 43202.

FERNS & FERN ALLIES OF JAPAN edited by Kunio Iwatsuki. Published by Heibonsha Ltd., 5-Banchi, 5-Bancho, Chyoda-ku, Tokyo 102, JAPAN. 1992. 311 pages. 1000 color plates. 19,500 yen (about \$150.00 U.S.). Almost all of the 630 species of Japanese ferns and their allies are figured. Many species are detailed by more than one photograph, showing the entire plant, anatomy, and even habitat. The text is in Japanese. The text will be published in English as volume one of the "New Flora of Japan" to be available in 1994. (For those of you interested in food plants.--BSN)

THE BUTTERFLIES OF THE CAUCASUS. VOL. 1 PAPILIONIDAE, PIERIDAE, SATYRIDAE, DANAIDAE by Yuri Nekrutenko. 1990. 215 pages. 32 color plates, 105 figures.

Available from the author for \$50.00 plus postage. Write him at Institute of Zoology, U-252601 Kiev 30, UKRAINE. No further information available. (BSN)

RESEARCH REQUESTS

I seek any biographical or historical information relating to Professor R.R. Rowley, a well known Missouri lepidopterist who published extensively around 1900 in such journals as the Canadian Entomologist. He was interested in underwing moths (*Catocala*, Noctuidae) especially, but also generally in macrolepidoptera. His address was listed as Louisiana, Missouri, a town on the Mississippi River a few miles upstream from St. Louis, where he was Superintendent of Schools. He was also a paleontologist, and described new fossils from the Midwest. I find no biography listed in Carpenter's "Bibliography of Biographies of Entomologists" (Am. Midland Nat. 33 & 50), and the St. Louis Science Center claims not to have his specimens, although they are listed as his repository in Arnett's "Insect and Spider Collections of the World". I am particularly interested in his correspondence files and Lepidoptera specimens. Any help would be greatly appreciated. Robert Dirig, P.O. Box 891, Ithaca, NY 14851, USA.

MEMBER'S NOTICES

WANTED: Livestock of any common *Caligo* species. I'd prefer larger larvae but will take any eggs and/or larvae. Please contact Barry S. Nichols, 7004 Ethan Allen Way, Louisville, KY 40272, USA. Or E-MAIL me at BSNICH01@ULKYVM (BITNET) or at BSNICH01@ULKYVM.LOUISVILLE.EDU (INTERNET).

Fine bait traps for sale. Normal, cone-type traps and a "tropical" type with a wide lip instead of a cone. They are 3 ft. high, 15 in. in diameter, and have a 22 in. access zipper and a 16 sq. in. plywood base. Those with cones have a cone opening of 4 inches. Cost is \$35.00 (plus \$3.00 shipping). Contact Chris Ward at 1474 Melbourne Dr. SE, Girard, OH 44420-1332, or call (216) 539-5374 for more information.

BACK ISSUES of the Kentucky Lepidopterist may be ordered by volume number for \$5.00 per volume (year). All volumes are available. Contact Charles V. Covell at the Dept. of Biology, University of Louisville, Louisville, KY 40292 USA, for details or to place an order.

Interested in Lepidoptera on stamps? Join the PHILATELIC LEPIDOPTERISTS OF AMERICA (PLA). The Aurelian is the quarterly PLA newsletter. Dues are \$10.00 per calendar year. Send dues to Mike Rickard, 4618 Holly, Bellaire, TX 77401 USA.

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