



NEWS

of the LEPIDOPTERISTS' SOCIETY

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Editorial Committee of the NEWS

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THE BUTTERFLIES OF NORTH AMERICA: A REVIEW

At first, it seemed very easy: write a review of the impressive new butterfly book. After all, this is the biggest Rhopaloceros event in over 75 years (or 44 years, if you count Holland's 1931 update). The book is, at first reading, a true masterpiece. Yet after some reflection, and a little digging behind the scenes, some unfortunate lapses are exposed. But we will start with the positive side.

The color plates, 97 in all showing 2,093 butterflies, are really magnificent. Unlike some illustrations I've seen, there is no distortion in shape, lines or color. The illustrations *look like* the butterflies they represent, at least to my eye. With drawings, there is never a focus problem, and the undersides are placed right by the uppers. How many times have you wanted to reach into Holland's plates and turn one of his butterflies over? No problem here, since all significant undersides are shown. Full data is given on each specimen, another major omission in Holland. Two handy features *not* present are: 1) diagnostic arrows, ala Klots, for key features to separate close species, and 2) no reference on plates to corresponding text page.

The text is very readable, too. You might wonder, with 21 contributors, whether the result might be somewhat uneven. It is not, at least not in style of writing. There is a very good introductory section which covers biology, zoogeography and taxonomy in addition to the standard parts on collecting techniques and equipment (72 pages). Finally there are the species discussions, 500 pages in all, from Danaidae through Hesperidae. There is extensive foodplant information for all species when available, plus description of early stages and habits if significant. There is even a separate index of food plants and nectar source plants. Differences between close species and subspecies are detailed. The treatment can generally be described as quite thorough, and is fairly uniform throughout the book.

The major thrust of the text, to my thinking, is the presentation of the theory of geographic subspecies in full flower. Holland didn't even know what one was. McDunnough, in his 1938 check-list, made only a first step in that direction. Sub-

sequent workers have sorted the welter of species names in large genera such as *Euphydryas* and *Speyeria* into a small number of basic species (or super-species, if you think they went too far) with many subspecies. Field workers have turned up many new well-marked populations which have been named. This book is a compendium of these efforts, giving the status quo up to early 1972. For the beginning student, this must be a real boon. If he can sort his specimen(s) to the right basic species, then the subspecies name can be determined pretty well from locality. In my own collection, I'm going to change a lot of labels, using this book as a guide.

In all, *Butterflies of North America* is a complete package chock full of information of use to butterfly fanciers of all ages and most technical levels. The price is right, too, at \$40. I try to imagine what 97 color plates would cost in the next fascicle of *Moths of America* and . . . I can't go on—it is too painful! Every library will want one, as well as most butterfly collectors. Doubleday (the publisher) should be assured of orders for years to come.

So much for the good news. For balance, we must examine the shortcomings, too. A small annoyance hits your eye even before the book is opened. The title says: ". . . of North America", but the cover shows 9 species, all of which live mainly in Central America, and are at best stragglers into the southernmost reaches. "You can't tell a book by its cover." How true!

From that opening anecdote, we turn to more serious charges. A popular manual is NOT the place to publish new descriptions or even create new combinations, if the supporting arguments are omitted. In this book, we find one intentional subspecies description and a yet undetermined number of accidental validations of new subspecies names. Too bad one more specialist wasn't added, in charge of prevention of taxonomic boo-boo's. But do not necessarily blame the contributing specialists. From my information, they were not given a chance to revise or even review their sections as they were to appear in final print. Their manuscripts were turned in from 4 to 7 years ago, with high hopes of publication "soon",

and only now do they get to see how it all turned out. And some changes were made in the scientific content of the words that appear under their names. We certainly can appreciate the magnitude of the editing task that this book represents, yet a means should have been found for feedback from the specialists, and an overall review for scientific/taxonomic standards provided.

Some details must be given to support the last paragraph. There are some figure and identification errors: *Mitoura siva mansfieldi* underside is green, not brown as shown. "*Lyc. argyr. anna*" figure is really typical *ricei*; no true *anna* is figured. The following names are apparently accidentally validated: *Phy. tharos distincta*, *P. orseis herlani*, *P. mylitta arizonensis*, *Chlosyne acastus dorothei*, *C. leanira oregonensis* (all D. Bauer names). *Euphydryas chalc. corralensis* is listed as a Bauer name, but escaped the above fate since John Emmel already published it (Jour. Rsch. Lepid. 11:3, "Sept. '72", June '73) prior to figuring it in "Butterflies of So. Calif."

There are cases of perpetuating old errors which have been corrected. *Chlosyne calydon* is credited to Strecker, as per dos Passos 1964 list. But dos Passos corrected that in 1969, assigning the name to Holland. It seems that Holland used this name in his 1931 Butterfly Book, quoting Mead but accidentally validating it himself with a picture and a description. What a tangled web! A second example is *andrewsi*, assigned to *Euchloe ausonides*, ignoring Opler's 1966 paper assigning it to *E. hyantis*.

The description of *Speyeria egleis toiyabe* by William Howe on P. 237 is unfortunate. It is bad enough that a new sub-

species is described from a single (count 'em, ONE) specimen. What is even more lamentable is that Moeck (Geogr. Variability in *Speyeria*, 1957) was familiar with this population, and others nearby, but declined to offer any new names, while speaking of "great variability", going from "bright silver to unsilvered", with a "trend to pallidity".

There are a fairly large number of other nomenclatorial changes that appear for the first time in this book. New families appear: Ithomiidae, Heliconiidae, Liphyridae, Apaturidae. Previous sub-species are elevated to species, while some former species become subspecies. In some of these actions, it appears (to me) that the right move was made. But the important point is that no rationale is supplied for any such changes, and there are no references as would occur in a proper revision. The reader is left to guess the state of the facts before the specialist. The indeterminate date of writing doesn't help, either. So we must return to the assertion that this book would have done well to be just a compendium of the state of published taxonomy at the cut-off date for its publication, rather than to try to blaze new (and controversial) trails of its own.

Any opinions found in the foregoing are strictly those of the editor, who would like to hear from others regarding their views on this book. I have tried to be factual and fair, since I really do like the book, believe it to be a valuable contribution, and appreciate the mammoth task of putting it together by all those involved. But future workers will have to spend a bit of time finding and straightening out the nomenclatorial problems that have been created.

Ron Leuschner, Editor

FIELD SEASON SUMMARY FOR 1975

Time to be getting your field notes for the 1975 season in order to submit to the Zone Coordinator in the areas in which you collected last year. Try to make your report brief, accurate, and neatly presented (double-spaced and typed if possible). **Deadline** for you getting your reports to Zone Coordinators is February 15, 1976.

Please try to avoid complete long lists of species collected in various localities. Mention the commoner species with reference to specific information such as population size, habits, unusual forms, etc. — not just as records of your having taken them again. Be sure to include information on your finer catches, new collecting areas, new time records, etc. Use the dos Passos *Check List* for North American butterfly names, and check your spelling so the Coordinator will not have that to worry about. Also, omit names of authors of species except where absolutely necessary.

Following are listed the 11 zones with their Coordinators and their addresses, and the areas encompassed by each:

ZONE 1: (Calif., Ariz., Nev.) — Robert L. Langston, 31 Windsor Ave., Kensington, CALIF. 94708, U.S.A.

ZONE 2: (B.C., Wash., Ore., Ida., Mont.) — Ron Leuschner, 1900 John St., Manhattan Beach, CALIF. 90266, U.S.A.

ZONE 3: (Alta., Wyo., Utah, Colo., N.M.) — Donald Eff, 445 Theresa Drive, Fairview Estates, Boulder, COLO. 80302, U.S.A.

ZONE 4: (Sask., Man., N. and S. Dakota, Nebr., Kans., Okla., Texas) — H. A. Freeman, 1605 Lewis Drive, Garland, TEXAS 75041, U.S.A.

ZONE 5: (Ont., Minn., Wisc., Mich., Iowa, Ill., Ind., Ky., Ohio, Mo., West Va.) — M. C. Nielsen, 3415 Overlea Drive, Lansing, MICH. 48917, U.S.A.

ZONE 6: (Ark., La., Tenn., Miss., Ala., Fla., Ga., N. and S. Carolina, Va.) — Bryant Mather, 213 Mt. Salus Drive, Clinton, MISS. 39056, U.S.A.

ZONE 7: (Que., Nova Scotia, New England, N.Y., N.J., Pa., Del., Md., D.C.) — L. Paul Grey, R.F.D., Lincoln, MAINE 04457, U.S.A.

ZONE 8: (Alaska and Northern Canada) — Kenelm W. Philip, 1005 Gilmore St., Fairbanks, ALASKA 99701, U.S.A.

ZONE 9: (Northern Neotropics: West Indies, Mexico, and Central America) — Eduardo C. Welling M., Aptdo. Postal 701, Merida, Yucatan, MEXICO.

ZONE 10: (South America) — Thomas C. Emmel, Dept. of Zoology, University of Florida, Gainesville, FLA. 32601, U.S.A.

ZONE 11: (Palearctic Region) — Otakar Kudrna, Dept. of Biological Sciences, King Henry I Street, Portsmouth, ENGLAND (By Jan. 1976)

MEMBER, THE SOCIETY NEEDS YOUR HELP!

A few administrative changes have taken place over the last year and a number of members are apparently not aware of these new changes. All back issues of the *News and Journal* as well as the *Memoirs* can be obtained from the *Memoirs* editor, Dr. Charles V. Covell, Jr., Dept. of Biology, University of Louisville, Louisville, Kentucky, 40208. You will also observe that the return mailing address on the *Journal* and the *News* has been changed to this above address so that everything can operate out of one central location.

Now, you are probably wondering how the above changes involves you as a member. All of the officers of the Society serve without compensation and the tasks for the Treasurer and the editors of the various Society publications are particularly time consuming. We are all trying to make an effort to keep the quality of service to the members up and the costs down, and by doing so, keep your membership dues down as well. You can save your Society money and these hard working officers time by sending in new permanent address changes to the Treasurer, Dr. John Snider. We emphasize the word permanent because every time a member changes residence, the change of address takes between 1-3 months to be transferred on all of Society records and the master mailing list. All of these changes as well as the cost of undeliverable publications cost your Society money.

One further problem has arisen in recent years. A number of members every year fail to pay their yearly dues by March. The member is then dropped and then perhaps reinstated later in the year. As you can understand from the above, the Society is charged for members who are dropped and reinstated and the bookkeeping time involved for both the Treasurer and Secretary is doubled.

Soon the election ballots and dues notices for 1976 will be mailed and the Treasurer and Secretary would certainly appreciate it if you would return these as soon as possible. Start the Bicentennial year right, save the Treasurer some headaches and the Society some money by getting your dues and address changes in promptly.

Lee D. Miller, Secretary



THE KARL JORDAN MEDAL

In 1972 in recognition of the 25th Anniversary of the Lepidopterists' Society, Mr. A. C. Allyn offered to fund an award, the Karl Jordan Medal, through the Allyn Museum of Entomology. The award, to be given by the Lepidopterists' Society, would recognize outstanding original research in lepidopterology with special emphasis on the fields of zoogeography, taxonomy, morphology and what was originally known as "natural history". These fields are ones which are currently poorly supported and it was hoped that such an award would encourage workers to do meaningful research in these areas.

The award consists of an engraved Karl Jordan Medal, \$1,000 and transportation to the site of the Annual Meeting where the recipient would deliver a paper. In case of co-authorship, the cash prize will be divided and duplicate medals awarded.

The criteria for the Karl Jordan Medal have been published (Jour. 26(4): 207-209), but any member of the Society who would like to nominate a particular piece of research should keep the following in mind. First of all, the Karl Jordan Medal

is not meant to be a "career" award. The award will be for original research and not for a compilation of already known facts. The published work can be a single piece of research or a series of interrelated works which is at least three, but not more than twenty-five years old. Finally, the nominee need not be a member of the Society, but it is hoped that the recipient will elect to become one.

Nominations for recipients of the Jordan Medal will be accepted from any member of the Lepidopterists' Society and should be sent to: Jordan Medal Awards Committee, Allyn Museum of Entomology, 3701 Bay Shore Road, Sarasota, Fla. 33580. To be considered for 1976, the nominations can be received no later than 15 January 1976. All nominations must be accompanied by a literature citation of the published work or if possible, a copy of the work.

Dr. Lee D. Miller, Curator
Allyn Museum of Entomology



THYMELICUS LINEOLA IN IOWA

On June 21, 1975 my father and I were doing some collecting in Johnson County, Iowa in a wooded area along Hwy. 220 between Highways 149 and 218. We were ready to quit for the day when on our way back to the car, my four year old son Ben said, "I found one Daddy". He was pointing to a small skipper on the ground. It looked like an *Ancyloxypha numitor*, but when caught and examined, I found it to be a fresh male *Thymelicus lineola*. By further searching we were able to find two more fresh males. We visited the area again on July 3, but no other specimens were found.

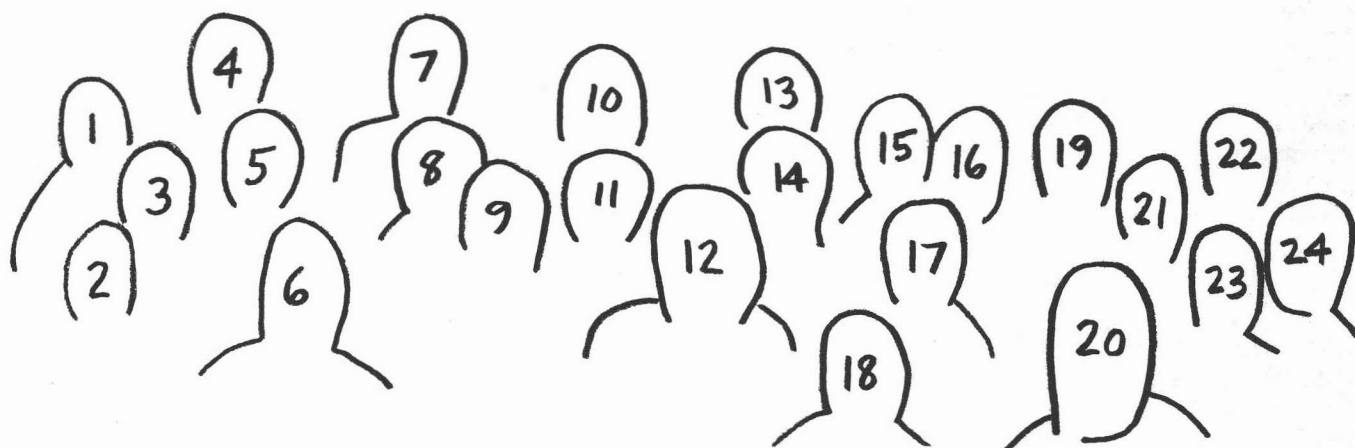
Dr. John Downey has informed me that this is a new state record. Johnson County is about 75 miles from LeClaire, Iowa, on the Mississippi River. Thus *lineola* has spread into Iowa about 20% of the way across the state, and possibly even further west.

Ronald R. Gatrell
126 Wells Road
Goose Creek, S. C. 29445



A NEW REGIONAL SOCIETY FOR LEPIDOPTERISTS

On November 23, 1974, a meeting was held at the University of Louisville forming the Society of Kentucky Lepidopterists. Its purpose is to foster interest, learning, communication, and enthusiasm on the part of lepidopterists interested in the moths and butterflies of Kentucky and neighboring states. There were 15 people at the meeting, and Richard Henderson was chosen as first President. Al Brownell is Secretary-Treasurer, and Charles Covell is editing the quarterly newsletter, "The Kentucky Lepidopterist." Plans include a summer field meeting, the first of which was held at Pine Mountain State Park July 18-20, where *S. diana*, *P. m-album*, *Amblyscirtes aesculapius* were among the butterflies collected by the 9 lepidopterists present. Fall business and information meetings are planned at the University of Louisville. Membership dues are \$5 for regular membership, \$2.50 per year for students. We welcome membership of anyone who is interested. Write: Society of Kentucky Lepidopterists, Dept. of Biology, Univ. of Louisville, Louisville, KY. 40208, U.S.A.



1. Homer Edgecomb (Calif.)
2. Ernst J. Dornfeld (Ore.)
3. Mrs. Homer Edgecomb (Calif.)
4. Paul A. Opler (Va.)
5. Mrs. Sterling Mattoon (Calif.)
6. E. J. Newcomer (Wash.)
7. Jerry A. Powell (Calif.)
8. Sterling O. Mattoon (Calif.)
9. Julian P. Donahue (Calif.)
10. Peter J. Herlan (Nev.)
11. Bruce Walsh (Calif.)
12. Jon Pelham (Wash.)
13. Kenneth B. Tidwell (Utah)
14. Paul Tuskes (Calif.)
15. Mrs. Kenneth Tidwell (Utah)

16. Kenneth Goeden (Ore.)
17. John Hinchliff
18. Marilyn J. Hamlin (Wash.)
19. Mrs. Wayne Steele (Calif.)
20. Robert M. Pyle (Conn.)
21. Ray Albright (Ore.)
22. Wayne J. Steele (Calif.)
23. Stanley G. Jewett (Ore.)
24. David V. McCorkle (Ore.)

Present but not in picture:

- D. L. Bauer (Calif.)
- J. D. Lattin (Ore.)
- L. Russell (Ore.)
- R. E. Stanford (Colo.)

MINUTES OF 22ND PACIFIC SLOPE MEETING

The Twenty-Second meeting of the Pacific Slope Section was held on 20-22 June 1975 at Oregon State University, Corvallis. 22 members, representing 8 states, were registered.

A preregistration field trip to nearby McDonald Forest was held Friday afternoon. Twenty species of butterflies were taken, including *Euphyes vestris*, *Parnassius clodius*, *Strymon melinus setonia*, *Limnitis lorquini burrisonii*, *Boloria epithore chermocki* and *Coenonympha tullia eunomia*. J. A. Powell & J. B. Walsh shocked the locals by taking *Hesperia juba*, which had previously not been taken in the forest, despite years of heavy collecting. An open house at the OSU Entomological collection, and a slide fest at Dr. Dornfeld's house concluded the Friday events.

The Saturday business meeting discussed the site for 1976. If the National meeting is in Denver, then Pacific Slope Section would be in conjunction with them. If not, Pacific Slope will be held at the Nevada State Museum, Carson City, with exact dates to be announced.

Saturday morning papers were: "The California Insect Survey: History, Status and its Lepidopterological Paradox"—J. A. Powell. (Very little use has been made of extensive Lep collections of the Calif. Insect Survey); "A Preliminary Report on Butterfly Conservation in Monterey County, California"—J. B. Walsh. Inland range extensions for *Shijimaoides enoptes smithi* and *Incisalia mossii doudoroffi*, two rare Monterey county endemics, previously only reported for the coast).

A Symposium on Lepidoptera Conservation in Western North America, with D. V. McCorkle presiding, had three major sections: Needs, Current Status Reports, and Means. R. M. Pyle (director of the Xerces Society) and P. A. Opler (Office of Endangered Species) jointly spoke on the needs of Lepidoptera Conservation. Opler detailed factors which cause extinction and suggested methods to deal with them. Pyle then outlined some of the early successes of the Xerces Society, and urged further work on locating and saving rare and endangered Lepidoptera.

California, J. P. Donahue & J. A. Powell: Donahue, with help of local Lepidopterists, reviewed 24 California butterflies as possibly threatened or endangered species. Six species were listed by the report as being endangered. These are: *Parnassius clodius stronhbeeni*, *Apodemia mormo langei*, *Callophrys mossii bayensis*, *Plebejus icarioides missionensis*, *Shijimaoides battoides allyni*, and *Speyeria adaste atossa*. Several others were listed as threatened. J. A. Powell showed slides of *Apodemia mormo langei* habitat, and told of talks with PG & E, owner of some of the area, to try to obtain land for a preserve.

Colorado, R. E. Stanford: 13 species have limited distribution, and need careful attention: *Hesperia ottoe*, *Atrytone arogos iowa*, *Euphyes bimacula*, *Yurretta rhesus*, *Amblyscirtes simius*, *Polites sabuleti chusca*, *Ochlodes yuma*, *Papilio indra minori* (type locality), *Speyeria idalia*, *Speyeria nokomis nokomis*, *Oeneis alberta osleri*, *Oeneis jutta reducta*, and *Lethe fumosus* (may be extinct). Ten of the thirteen are grass-feeders, and are hurt by heavy grazing of their habitats. Eight of the thirteen are found in the dwindling wetlands.

Oregon, D. V. McCorkle: Overdevelopment along the coast has reduced much of the prime habitat of *Speyeria zerene hippolyta*. Overgrazing is a problem in Eastern Oregon to certain local species. Pressure is being put on to limit the

amount of grazing, and a preserve for *S. z. hippolyta* is being established. In addition, Oregon is actively pursuing the acquisition of rare habitats.

Washington, J. Pelham: Washington is active in conservation: for example, roadside habitats are provided where no mowing or spraying is done, to provide refuge for nongame animals. On the other hand, Washington faces the problems of land development and overgrazing that also plague many other western states. Lack of detailed information on distribution and biology makes it difficult to say which species, if any, are threatened or endangered.

The means of conservation were discussed in the following papers: "Private and State Lands"—Dr. R. Frenkel (Rare and endangered habitats (cells) in Oregon and Washington are assigned to a cell "catalogue"); "National Forests, The Rock Creek Salt Spray Meadow Project"—G. Silvovsky (National land use policies for rare or endangered species); "Regulations of Collecting"—R. M. Pyle & P. A. Opler (Both agree that it is exceedingly difficult to damage a population of mobile invertebrates by overcollecting. The Xerces Society policies are discussed in detail in *Atala* 3(1): 24. Opler pointed out that by the endangered species act, even photographing an endangered insect may be illegal, if it is disturbed. But this is an extreme interpretation. More reasonably, collecting permits are available to those who have a valid need of material for research).

The featured speaker at the Saturday banquet was Dr. John D. Lattin, Professor of Entomology at OSU. His talk, entitled, "Oregon as a Habitat for Insects", was profusely illustrated with color slides. Door prizes, generously donated by Entomological Reprint Specialists, were presented.

Sunday morning presentations were: "The Rocky Mountain Butterfly Project: Plans, progress and Preliminary Distribution maps"—R. E. Stanford (The project is an ambitious attempt by six local collectors—R. E. Stanford, C. D. Ferris, F. M. Brown, M. S. Fisher, J. D. Eff & S. L. Ellis—to gather further distributional and biological information for the Rocky Mountain states. The project will, eventually, result in a book on Rocky Mountain butterflies); "Seasonal Dimorphism in *Eurema daira*"—P. A. Opler (Based on capture-recapture studies in Costa Rica, the wet season form of *daira* lives only four days; the less active dry season form lives over four months); "Isolating mechanisms of Sympatric *Hemileuca* (Saturnidae)"—P. Tuskes & M. M. Collins (Field studies on *H. eglantera nuttalli*-*H. hera* showed that females of both species attract males of the other species, but most refused to mate incorrectly); "Butterfly Habitat on the Oregon Coast"—D. V. McCorkle (Slides showed locations and inhabitants for post-meeting field trip).

A report from the resolutions committee (Pyle and Donahue) was read:

Whereas the 22nd annual meeting of the Pacific Slope Section of the Lepidopterists' Society, host by Oregon State University, Corvallis, June 20-22, 1975, has proven to be well organized, well attended, and thoroughly enjoyable,

Therefore be it resolved that the Section's deepest thanks be extended to:

The local arrangement committee: John D. Lattin, E. J. Dornfeld, and David McCorkle;

The program committee: David McCorkle, Ken Goeden,

and Ray Stanford; and

A special expression of gratitude to E. J. Dornfeld, who graciously hosted an informal evening at his house.

Be it further resolved that the Section convey its sincere appreciation and encouragement to the United States Forest Service, the Siuslaw National Forest, and to Gene Silvovsky and Jill Brinkman for their collective efforts to manage habitat for *Speyeria zerene hippolyta*.

Following lunch, most of the members regrouped for a

field trip to one of the last remaining salt spray meadows, the habitat for *Speyeria zerene hippolyta*. This meadow, near Rock Creek campground, in the Siuslaw National Forest, Lane county has the largest remaining population, and may soon be a preserve for this endangered butterfly. Poor weather prevented collecting along most of the trip.

J. Bruce Walsh
Secretary Pro-tem

A NOTE ON FILMS AND ULTRAVIOLET PHOTOGRAPHY

During the last several years, a number of papers have appeared in the literature and in various conference proceedings concerning the use of ultraviolet photography as a taxonomic tool. Correctly applied, it can be extremely useful, along with other taxonomic methods, for separating species groups and in other matters of classification. A simple method for ultraviolet photography was described by Ferris (1972, J. Lepid. Soc. 26: 210-215).

The purpose of this note is to indicate that caution must be used in selecting the appropriate film to use for this technique. In the paper cited, it was pointed out that panchromatic film, such as Tri-X or Panatomic X (Eastman Kodak Co.) is suitable. Tri-X is preferred because of its wide spectral sensitivity and fast film speed (ASA 400).

Very recently, some workers have reported research using color film for ultraviolet photography. Color film is normally used to record the visible light produced when fluorescent

subjects are illuminated by ultraviolet light. This is not ultraviolet photography, but simply normal color photography where the colors (such as in some mineral specimens) are excited by ultraviolet radiation. Color film does not respond well to ultraviolet light. Usually the image obtained when color positive (slide) film is used, is composed of rather dusky shades of blue with poor definition of the ultraviolet reflective areas in the subject. If a Wratten 18A filter is not placed in front of the camera lens, the resultant image on the film is a combination of the visible light and ultraviolet light reflectances. This can lead to improper assumptions concerning taxonomic placement of the specimen, because of the ultraviolet reflectance pattern may be partially masked by the visible light reflectance.

In normal ultraviolet photography of the Lepidoptera, the specimen is illuminated by light in the wavelength range 300-400 nm, which is the near ultraviolet spectrum. The spec-

Log SENSITIVITY

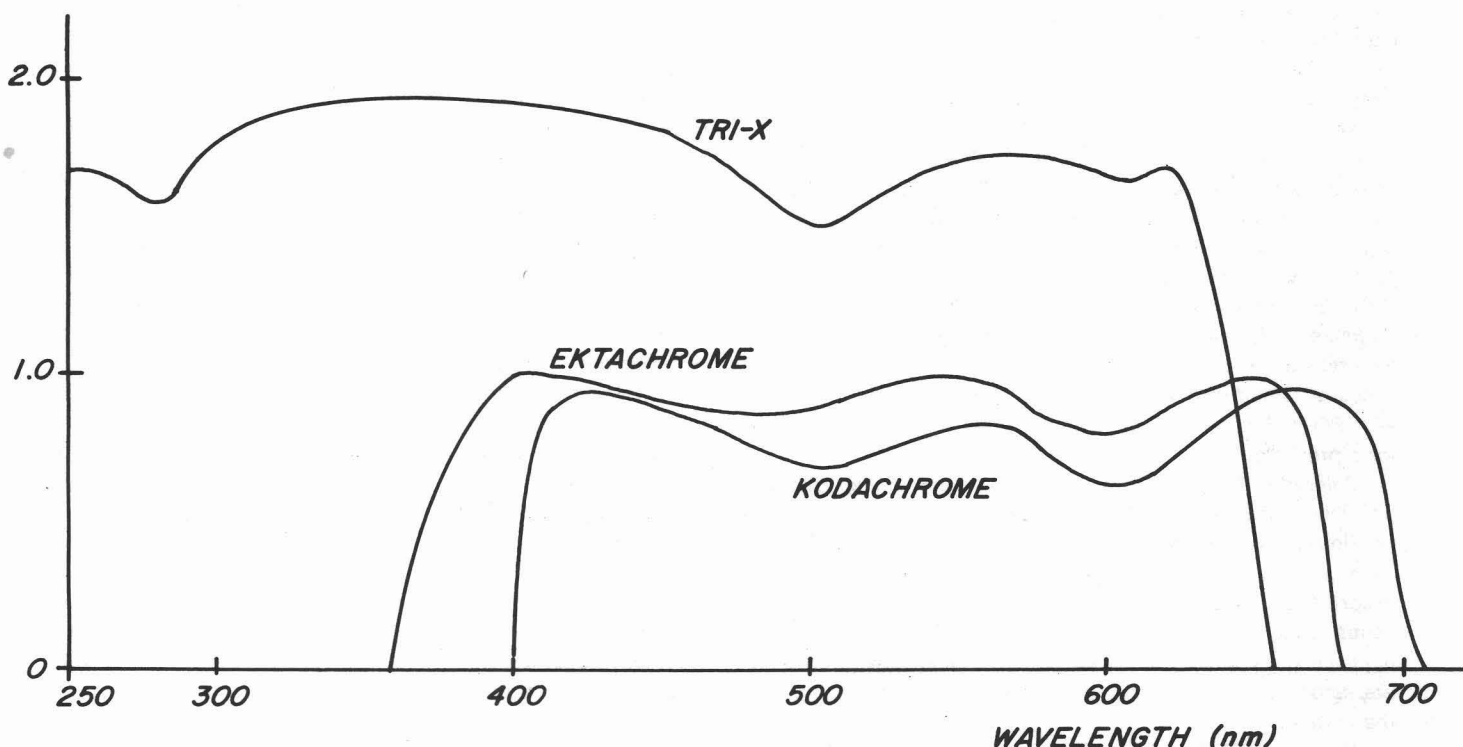


Fig. 1. Relative spectral sensitivity of panchromatic and color films. Sensitivity equals the reciprocal of the exposure (ergs/cm²) to produce a specified density above densi-

ty of base plus fog. Tri-X, Ektachrome, and Kodachrome are registered names by the Eastman Kodak Co., Rochester, N. Y.

tral sensitivity of most color film drops off very rapidly for wavelengths shorter than 400 nm. Thus if such film is used, only part of the ultraviolet reflectance pattern is recorded. Figure 1 illustrates relative sensitivity curves for several commercially available films. These must be considered as average response curves for correctly exposed films developed by the manufacturer's recommended processes. Considerable variation is to be expected from different batches of the same type of film. Alternate development processes will also result in sensitivity changes.

Figure 1 indicates that panchromatic film is sensitive to wavelengths well below 300 nm, while the sensitivity of the color films falls off rapidly below 400 nm. Black-and-white panchromatic film is thus the preferred substrate for recording uv reflectance patterns. It is also considerably less expensive and may be processed more easily than color film. If one wishes to have a colored image for some reason, this may be obtained from the black-and-white negative by the diazo process (Eastman Kodak Co., Pamphlet No. S-22). Blue, red, green, violet, orange, or brown images may be easily

obtained by this process.

If an untried film is to be used for ultraviolet photography, it is essential that the researcher obtain sensitometric and image structure data from the manufacturer of the film. In this way, he will know the limitations and advantages of the film.

The author wishes to thank the Professional and Finishing Markets Division of the Eastman Kodak Co., Rochester, N. Y. for kindly providing extensive sensitometric and image data for Kodak films. From these data were extracted the sensitivity values used to produce Figure 1.

(This note is published with the approval of the Director, Wyoming Agricultural Experiment Station, as Journal Article JA 734.)

Clifford D. Ferris, *College of Engineering, University of Wyoming, Laramie, Wyoming, 82071.* (Research Associate, Allyn Museum of Entomology, Sarasota, Florida; Museum Associate, Los Angeles County Museum of Natural History, Los Angeles, California.)



MOTH BITES EDITOR

In an experience remarkably paralleling that of Jerry Powell (see Lep. News 3, 15 May 1972), your editor found himself attacked by a moth. It didn't really bite me—that is only a fanciful title. Much worse, the critter flew directly and unerringly into my ear and immediately crawled to the furthest recesses (no, it did not come out the other ear!). Since I have presided over the scientific extirpation of roughly 50,000 moths over the years, it probably is justice of sorts to meet one that didn't go quietly. That doesn't make it any more fun, however.

But I was armed with a good recollection of Jerry's article. After assuring myself that the moth was not going to come out voluntarily (straight ahead was the only direction it knew), I took Step One toward regaining serenity: stick ear in Cyanide Jar! Two 15-minute sessions and all was quiet. (An alternate method must be devised for a moth up the nose.) This left me with a dead moth in the ear, better than a night of highly audible scratching, but not as good as no moth at all.

The next day, medical science came to the rescue. A little hydrogen peroxide was poured in to loosen things up, followed by vigorous syringing with water. The abdomen was then protruding enough to be grabbed with forceps and get it out. I rescued the specimen, in pretty good condition, con-

sidering, and have mounted it. Beneath will go an extra label: caught by Ear. Cost of treatment was \$20.50, only up 50¢ in three years. Yes, there were a few snickers in the waiting room.

Several thoughts remain, and must be set down before I can purge the incident from my mind. First, I must modestly claim the world's record for the largest moth in ear. The one that did it to Jerry Powell was *Poly. hebraeicum*, a very slight, frail noctuid hardly larger than a *Tortrix* which he would have preferred. Mine was a large, common, gross, vulgar, son-of-a-cutworm Noctuid called *Chorizagrotis auxiliaris*. Two inch wingspan, at least. The reader who wants to top that with a story about *Celerio lineata* will be asked to prove it before an impartial panel of experts.

Finally: Jerry, do you realize that we are among the select few who have listened to the death rattle of a moth? There must be great possibilities for research here, good for a doctoral dissertation at the very least. This could be the clue leading to a re-arrangement of the phylogeny. But we will need data on all the families, not just Noctuids. And new techniques. A microphone inside the killing jar might work better than the primitive methods that we pioneers (no pun intended) have used.

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RESEARCH REQUESTS:

- New species records, flight dates and localities for butterflies and skippers of West Virginia. All records will be acknowledged. Bastiaan M. Drees, 320 Stewart St., Apt. D, Morgantown, W.VA. 26505, U.S.A.
- Need all publication references and records about Persian butterflies for a proposed book about Rhopalocera of Iran. All contributions will be acknowledged. J. T. Hashemi, 4 Whiteheads Lane, Bradford-on-Avon, Wiltshire, ENGLAND.
- Need information (anecdotal or otherwise) on rearing of *Feniseca tarquinius*, plus host plants of their prey. Also would like pupal or adult measurements. Locations of larger colonies in Michigan or neighboring states also desired. Larry Kirkendall, Division of Biological Sciences, University of Michigan, Ann Arbor, MICH. 48104, U.S.A.
- Wanted: Information on art symbolism of Lepidoptera. I am finishing a Master's thesis and book entitled: "The Symbolism of Butterflies and Moths in Western Art". My research has identified at least 25 major symbols portrayed by butterflies and moths, and I have works by hundreds of artists. I would like to contact experts on Lepidoptera art symbolism, and locate additional publications on the subject. Please write: Ron Gagliardi, 5 Gateway Court, Cheshire, CONN. 06410, U.S.A.
- Wanted for host specificity comparisons: Live ova and larvae of *Strymon melinus* (any population). Any rearing records or data specifically stating the abundance of host plants also useful. All contributions and correspondence acknowledged. Glenn A. Gorelick (Biology), Citrus College, 18824 E. Foothill Blvd., Azusa, CALIF. 91702, U.S.A.
- Need information on location of colonies of *Euphydryas phaeton* in Massachusetts for thesis work on behavior and ecology of this species. Am also interested in obtaining overwintering larvae of *E. phaeton* for breeding stock, not necessarily from Massachusetts. Please contact Deane Bowers, Dept. of Zoology, University of Mass., Amherst, MASS. 01002, U.S.A.

NOTICES:

Members of the Lepidopterists' Society are invited to use this section free of charge to advertise their needs and offerings in Lepidoptera. We cannot guarantee any notices, but all are expected to be made in good faith. Please be brief, clear, and check spelling. Avoid long lists. Generally, notices will be limited to 3 appearances if more than one are requested. The Editor reserves the right to alter or reject unsuitable copy.

FOR SALE: Formosan butterflies, moths, beetles, cicadas, dragonflies, praying mantids, cocoons and ova of moths. Mrs. Chang Pi-Tzu, P.O. Box 873, Taipei, Taiwan (FORMOSA).

FOR SALE: Numerous books, journals, and single articles dealing with Lepidoptera. Please write for list. Dennis Groothuis, 3612 Saratoga Drive, Nashville, TENN. 37205, U.S.A.

WANTED: Interested in Parnassiidae, series or single specimens, will buy or exchange, need full data. C.Eisner, Kwekerijweg 5, Den Haag, HOLLAND.

WANTED: Worldwide Lycaenidae and Nemeobiidae. Will buy or exchange. Many butterflies and moths of Pennsylvania available for exchange. Gasper Danish Jr., 1017 Second Ave., Altoona, PA. 16602, U.S.A.

WANTED: Clearwing moths of the family Aegeriidae (Sesiidae); these are mainly wasp-like moths with boring larvae. Good prices paid for papered or set adults, or live pupae, depending on condition and completeness of data. Worldwide interest. John Holoyda, 2819 N. Marmora Ave., Chicago, ILL. 60634, U.S.A.

FOR SALE: *Antheraea pernyi* cocoons at \$40.00 per hundred (Qty. over 500, \$35). Buyer must obtain importation labels from USDA using application forms which I will provide. Cocoons of *A.luna* and *A.io* at \$40.00 per hundred (Qty. over 500, \$35/C). Pupae of *L.bombycoides* and *D.rubicunda* at 10 for \$3.00 or \$25.00 per hundred. Larry J.Kopp, R.D.1, Kling-erstown, PA. 17941, U.S.A.

EXCHANGE: Have pupae of *Automeris zephyria*, *Anisota finlaysoni* and numerous local species. Also papered adults of *Sphinx franckii*, *Saturnia albotasciata*, *Roths.forbesi* and various other U.S. species. Want Saturniidae and Sphingidae from south and west in exchange. All letters will be answered. Jim Tuttle, 2691 W. Temperance Rd., Temperance, MICH. 48182, U.S.A.

FOR SALE: Tropical American Butterflies. Good service to previous customers will be continued, and new ones are welcomed, from my new Costa Rica address. New listings available. Miguel Serrano, Calle 3 No. 1636, Avenidas 16-18, San Jose, COSTA RICA.

WANTED: Butterfly Book, Holland, 1931; Butterflies Of California, Comstock, 1927; Colorado Butterflies, Brown et al, 1957. Please give condition and price. James R. Werner, 2303 E. Flower St. 203, Phoenix, ARIZ. 85016, U.S.A.

WANTED: Large beetles, walking sticks, mantids, leaf insects and spiders in A-1 condition. Write, stating price. Mrs. Bonnie Ravy, 1013 Lark St., Oshkosh, WISC. 54901, U.S.A.

FOR SALE: 3,000 papered Manitoba butterflies and moths. All in A1 condition and carefully, correctly papered. Full data. Price list for 1975 on request. C. S. Quelch, 21 Park Circle, Winnipeg, Manitoba, R2C 0L6, CANADA.

EXCHANGE OR SALE: *Lucanus cervus* male (2¾ inch) and female, \$6; cocoons of *Saturnia pyri* 2, \$30. If you need other European insects, send your wishes to: Jurgen Kruger, 402 Mettmann, Danziger Str. 14, WEST GERMANY.

EXCHANGE: 15 healthy *P.cresphontes* chrysalids from wild larvae in Mich. Desire southern or western Hesperidae or *Catocala*. Wayne A. Miller, 1491 N. Hills Drive, Kalamazoo, MICH. 49007, U.S.A.

WANTED: Setiz, Palaearctic Rhopalocera, double volume 1 and supplements, in English edition. J. T. Hashemi, 4 Whiteheads Lane, Bradford on Avon, Wiltshire, ENGLAND.

EXCHANGE: Many species of local Lepidoptera for Lycaenidae of the world. W. W. Gregory, 1373 Hixon St., Oakville, Ontario L6L 1R9, CANADA.

FOR SALE: 3 used Bio Metal cabinets, grey masonite, type 2107M, for 7 Cal Academy drawers. \$60 each, plus crating and shipping. Drawers not included. Richard Holland, 1625 Roma NE, Albuquerque, N. MEX. 87106, U.S.A.

FOR SALE: Seitz Volume 5, American Rhopalocera, English edition. Complete with text and plates, both in excellent condition, bound in half leather, \$650(US). Payment in advance. Packing and postage extra. Stan Dvorak, 8331 Pasadena Ave., La Mesa, CALIF. 92041, U.S.A.

WANTED: Correspondence with mid-west collectors interested in *Schinia*, *Papaipema*, and *Catocala*. Especially interested in distribution, foodplants, habitats, habits and collecting methods. FOR SALE: Ent. News ('36-'59), Bull.Brk.Ent.Soc. ('36-'65), Proc.Ent.Soc.Ontario ('37-'66), Memoirs Ent.Soc.Canada ('63-'74), News of Lep.Soc. ('59-'73), Packard's Bombycine Moths, 3 vol., Packard's Monogr.Geometridae, Smith & Dyar Rev.Acronicta, McD.1938 Checklist Part 1, Forbes Lep.of N.Y.-Micros, Clark's Butterflies of DC, Field's Kansas Butterflies, Hesperioidea of NA by Lindsey et al, Leonard's Insects of NY. M. C. Nielsen, 3415 Overlea Drive, Lansing, MICH. 48917, U.S.A. (Tel.: 517-484-3471)

WANTED: Mid-Continent Lepidoptera Series nos. 29, 62. C. F. dos Passos, Washington Corners, Mendham, N. J. 07945, U.S.A.

BOOK NOTICES:

Checklist of the Skippers and Butterflies of Maryland (separate reprint), Chesapeake Science Vol. 15, No. 4, December 1974, Pp. 222-229. Lists approx. 136 species and subspecies. Readers who would like a copy should send 20¢ in stamps to the author, John H. Fales, Ridge Road, Neeld Estate, Huntingtown, Maryland 20639, U.S.A. ✓

MARIPOSAS DE LA PENINSULA IBERICA (Lepidoptera of the Iberian Peninsula) by M.R. Gomez-Bustillo and F. Fernandez-Rubio. The third volume of this monumental work is scheduled for publication in October 1975, including the life history and distribution in Spain and Portugal of 110 Heterocera sp. (including subsp. and f.) of the following Families: *Cossidae*, *Epyropidae*, *Cochlididae*, *Zygaenidae*, *Thyrididae*, *Ctenuchidae* (= *Amatidae*), *Bombycidae*, *Endromidae*, *Attacidae*, *Syssphingidae*, *Lemonidae*, *Lasiocampidae* and *Sphingidae*. De luxe edition written in Spanish, with 330 pages, 300 color plates, and 140 drawings: US\$25.00 included surface postage. Set of First-Second (Rhopalocera & Grypocera, 1974) and Third Volume, special price US\$50! Orders with check to SHILAP, Apartado 331, Madrid, SPAIN.

BIOGRAFFITI: A NATURAL SELECTION. By John M. Burns. Introduction by Stephen Jay Gould. Funny, thoughtful, literate, graceful, pointed, ribald, and outrageous light verse on matters of current biological interest, with emphasis on evolutionary, ecological, and behavioral biology and on natural history. This, of course, includes sex. The poems are terse—a quality facilitated by a quantity of punning (on entire phrases as well as on words) which provides extra levels of condensed meaning. Striking use of technical terminology creates no difficulties because terms that might be troublesome are explained in a glossary. The monarch butterfly appears in a piece called "Up the Food Chain." All poems are illustrated with appropriate woodcuts, engravings, and so forth, carefully chosen from a wide range of old works issued mostly between 1550 and 1900. Scheduled for publication in October. Hardbound, ca. 128 pp. \$5.95 from Quadrangle/The New York Times Book Co., 10 East 53rd Street, New York, NY 10022, U.S.A.

THE BUTTERFLIES OF NORTH AMERICA, by William H. Howe and twenty specialists. 650 pages, 97 color plates showing 2,093 butterflies, 33 black and white drawings. Discusses all species and subspecies of butterflies in the United States and Canada. Information on geographic distribution, early stages, foodplants, and behaviour. A special section on collecting techniques, mounting and equipment. This is the long awaited replacement for Holland (but is much more than that—see review elsewhere in this issue). Standard Edition, \$39.95. Special Limited Edition (200 copies only), numbered and signed by the artist with added print, \$150.00. Available from your local book dealer, or send check or money order (payable to Doubleday) to: Doubleday & Co., Inc., Dept. ZP-510, Garden City, N.Y. 11530, U.S.A. ✓

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THE BIRDWING BUTTERFLIES OF THE WORLD, by Bernard D'Abrera. Available now. Comprehensive coverage of all species and races of Ornithoptera, Trogonoptera, and Troides. All species and 90% of the races are discussed and illustrated, including aberrant forms. Some genitalic drawings. All illustrations (except drawings) in full color. Many photographs of live insects in nature, all stages. Complete taxonomic revision. Approx. 268 pages, hard covers in linen, laminated dust jacket, size 11½ x 14 inches. Due to distribution difficulties, the author is making his work directly available from his agent. Price \$50 (Australian) plus \$12 for insurance and surface-air lift postage (14-17 days to N. Amer.). Copies will be autographed and numbered to 500. Contact: L. M. Stokes, Hill House, Highview Road, Ferny Creek, Victoria 3786, AUSTRALIA.

CHECKLIST OF THE BUTTERFLIES AND SKIPPERS OF CANADA, by W. W. Gregory. Lists 272 species and additional subspecies, showing occurrence of each in the 10 provinces and 2 territories of Canada. 44 Pp. Lyman Entomological Museum & Research Laboratory Memoir No. 3, 1975. Available for \$2.00 from Lyman Entom. Museum, Macdonald College, McGill Univ., Ste-Anne-de-Bellevue, Quebec H9X 3M1, CANADA. ✓

LE GENRE *ZERYNTHIA* OCHS. 1816 EN PROVENCE (Papilionidae), by Francis Bricoux. 1975. 84 pages, in French. Has distribution maps, drawings of venation and early stages, actual photographs of habitat and early stages. Available for 58 Francs from: Sciences Nat; 45, rue des Alouettes 75019 Paris, FRANCE.

THE SWALLOWTAIL BUTTERFLIES OF NORTH AMERICA, by Hamilton A. Tyler. Available now. Approx. 200 Pp. Color plates show 103 Swallowtails, plus other line drawings. Early stages, habits, ranges discussed. Cost: \$5.95 (paper) or \$9.95 (cloth) from: Naturegraph, 8339 West Dry Creek Rd., Healdsburg, CALIF. 95448, U.S.A. ✓

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Memoirs of the Lepidopterists' Society, Number 1 (Feb., 1964)

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