MARK F. O'BRIEN

NEWSLETTER

of the

MICHIGAN ENTOMOLOGICAL SOCIETY

Volume 20 Number 2 & 3 July 18 1975

RARE AND ENDANGERED INSECT SPECIES

Forty-one species of rare, endangered, or threatened butterflies are the subject of intensive studies by the Federal Government, 26 states, Cuba, Canada, and Mexico. The study is requested by the U.S. Fish and Wildlife Service to determine each butterfly's status.

Most of the butterflies under consideration in the study owe their reduced populations to two related problems--dependence on one primary food and land development. The Apache silverspot, a strikingly beautiful butterfly with a cinnamon brown top and silver spots underneath, for example, is located in the Owens Valley and Mono Lake areas of California. It thrives on a type of violet which requires moist growing conditions. As the demand for water by nearby Los Angeles grows, drainage of water from Owens Valley will probably dry and the marsh where the delicate violet grows, thereby reducing the Apache silverspot population.

A Florida butterfly, the Atala, which sports a velvety black and iridescent blue upper portion and orange and gold markings underneath, occurs only in the United States, even though it is a member of a group of tropical butterflies. In its larval stage, the Atala depends on a primitive plant related to the sago palm--known as the coontie. Current land development in Florida has destroyed several areas where coontie was available and now the Atala appears only sporadically and unpredictably.

It is believed that lepidopterists have not contributed to declining populations because collection usually takes place at a time of year after most females have laid their eggs and because males are most frequently the gender caught. Interestingly, the male butterfly is more frequently caught by amateur collectors because of its flamboyant tendency to flit about open meadows and marshes "looking for the action" while the female of the species maintains a somewhat more sedate posture nearer the ground.

This is the first attempt by the Fish and Wildlife Service to study butterflies. Several states have developed their own endangered species lists--some of which include butterflies--but this Federal study may result in the first national list of threatened and endangered butterflies.

The Endangered Species Act of 1973 directs the Department of the Interior, through the Fish and Wildlife Service, to conduct a review of those species which are "threatened" or "endangered."

A notice of this review is published in the Federal Register and will affect the following 26 states: Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Indiana, Iowa, Maine, Maryland, Michigan, Minnesota, Nevada, New Jersey, New Mexico, New York, North Carolina, Oregon, South Carolina, South Dakota, Texas, Utah, Virginia, and Washington.

Likewise, serious efforts are underway to identify butterflies and other species of Michigan plants and animals which, owing to the activities of man, are rare or in danger of becoming extirpated. To identify and document such species, a number of Technical Advisory Committees have been established under the aegis of the Endangered Species Coordinating Committee. One of the Technical Advisory Committees has to do with rare and endangered in-

(Continued on page 7)

The NEWSLETTER of the Michigan Entomological Society is published as four numbers yearly, at irregular intervals. Please send all notes, news, new insect records, research requests, season summaries, important dates for the Entomologists' Calendar, other items for the NEWSLETTER, membership inquiries, dues, etc. to the Executive Secretary, Michigan Entomological Society, Dept. of Entomology, Michigan State University, East Lansing, Michigan 48824.

The Executive Secretary's Page

1975-76 OFFICERS OF THE MICHIGAN ENTOMOLOGICAL SOCIETY

President ..... David C. L. Gosling
President-Elect ..... Donald C. Cress
Executive Secretary ..... M. C. Nielsen

ELECTION OF OFFICERS

The ballots were tabulated on the 5th of May for President-Elect, Executive Secretary, and Members-at-Large. A total of 160 ballots were returned, representing about 40 percent response from members. The results were as follows:

President-Elect 1975-76:	Votes
Donald C. Cress	101
Michael Tyrkus	56
Daniel Young (write in)	1

Executive Secretary:	
M. C. Nielsen	157

Members-at-Large (three highest votes)

John A. Witter	(3 year term)	76
Ronald J. Priest	(2 year term)	72
Roger G. Bland	(1 year term)	64
A. L. Bratt		62
D. A. Evans		57
Carlo Brivio		53
G. C. Heaton		37
H. B. Lewandowski		32

Congratulations to the winners and thanks to all the members who took time to cast their ballot.

NOTICES

WANTED: Specimens of, or information on, the range of *Hyalophora columbia*, the Columbian Silk Moth. Will exchange or buy. Erwin Elsner, 6089 Lincoln Ave., Stevensville, MI 49127.

WANTED: Data on Michigan butterflies for use in a new publication on the butterflies of Michigan. Any doubtful specimens can be forwarded for determination or confirmation. Especially interested in Lycaenidae and Hesperiidae records. Contact M. C. Nielsen, 3415 Overlea Drive, Lansing, MI, Telephone number: (517) 484-3471.

CONSTITUTION AND BY-LAWS CHANGES

Amendments to the MES Constitution and By-Laws proposed by ballot were passed as follows:

	For	Against
Const., Art. V, Sec. 1	121	2
By-Laws, Art. III, Sec. 2	121	2
By-Laws, Art. VIII, Sec. 2	120	3

The new amendments are as follows:

CONSTITUTION:

ARTICLE V - GOVERNING BOARD

Section 1. The Governing Board shall conduct the business of the Society, subject to the decisions on policy by the membership by mail ballot or at an annual meeting. This Board shall consist of the following officers: President, President-Elect, Executive Secretary, the two most recent available Past Presidents, THREE ELECTED MEMBERS AT LARGE, and the editor of the Society's Journal.

BY-LAWS:

ARTICLE III - GOVERNING BOARD

Section 2. MEMBERS-AT-LARGE SHALL BE ELECTED BY MAIL BALLOT TO SERVE A THREE YEAR TERM. THE TERMS OF SERVICE OF THE THREE MEMBERS-AT-LARGE SHALL BE STAGGERED SUCH THAT ONE MEMBER-AT-LARGE IS ELECTED EACH YEAR. MEMBERS-AT-LARGE SHALL BE ELECTED IN THE SAME MANNER AND AT THE SAME TIME AS THE PRESIDENT ELECT.

ARTICLE VIII - MEETINGS, QUORUMS, VOTING, ETC.

Section 2. Four members of the Governing Board shall constitute a quorum for the transaction of its business, provided, that ALL MEMBERS OF THE BOARD HAVE BEEN INFORMED OF THE INTENT TO MEET.

ARTICLE V - PUBLICATIONS

Section 2. (Omit from By-Laws).

A FIERY COURTSHIP

The lightning bug luminesces
Till his lady love acquiesces.

Rosemarie Williamson

TWENTY-FIRST ANNUAL MEETING

On May 16, the 21st Annual Meeting of the Michigan Entomological Society was held on the beautiful country campus of Glen Oaks Community College, near Centreville (St. Joseph County), Michigan. Attended by 51 members, students and friends, the meeting was another eventful and successful function of the Society since its inception in 1954.

The Governing Board, meeting prior to the program from 9:30 to 10:00 a.m., unanimously approved the following:

1. Initiate an Annual Meeting Program Committee to consist of 3 members, one from each of Michigan's larger research institutions, and two Governing Board Members-at-large, in addition to the President-Elect, who will serve as chairman. This will provide more help and attention in arranging the Annual Meeting program and stimulate greater attendance and interest.
2. Abolish the Editorial Board which has been nonfunctioning for years. The Governing Board has been handling Editorial policy and other matters involving the Journal and will continue to do so.

The Annual Meeting was then convened at 10:10 a.m. by David Gosling, President-Elect, and faculty member at Glen Oaks, who welcomed all to the College and briefly described their facilities and announced plans for lunch and the evening collecting trip. Gosling then turned the meeting over to Robert Husband, President, who chaired the business meeting and program. Nielsen, the Executive Secretary, opened the business meeting by presenting the Society's financial report and commenting on the "state-of-the-Society". The highlight for the past year was that the Society was in the "black" and expects to continue through the year. Funds of the Society on 16 May 1975 were as follows: Savings account, $1616.19; Checking account, $332.09; Accounts receivable, $3395.00; totalling $5,343.28. Outstanding debt was $1,309.78 as payment for printing the Journal, Volume 8, No. 2. Nielsen reported on the results of the recent election: President-Elect (1975-76), Dr. Donald Cress; Executive Secretary, M. C. Nielsen; Member-at-Large of Governing Board, Dr. John Witter (3 years), Mr. Ronald Priest (2 years) and Dr. Roger Bland (1 year). It was also announced that entomological books, donated by sustaining member Julian Donahue of Entomological Reprint Specialists, Los Angeles, California, were to be given away during a drawing later in the program. Special thanks were given to John Newman and Louis Wilson for their fine assistance to the Executive Secretary during the past year. Also, Irving Cantrall, Editor, was thanked for his special efforts in delivering the Journal from Ann Arbor to the Society's mailing agent in Lansing, thereby saving the Society substantial expense!

The actions taken by the Governing Board were reported to all in attendance. A motion was made and approved unanimously to abolish Article V, Section 2 of the By-Laws to coincide with the Board's action to abolish the Editorial Board.

Louis Wilson, Editor of the Newsletter, urged more news and lead articles from members. He also requested comments from members as to their likes or dislikes as to the contents and format of the Newsletter. In addition, Wilson reminded members to consider submitting more items for use in the Entomology Note Series, which is becoming popular with many teachers and nature groups. Cantrall, Journal Editor, called for more manuscripts for use in coming issues of The Great Lakes Entomologist.

Gosling introduced the guest speaker, Dr. V. G. Dethier of Princeton University, who delivered a stimulating and entertaining paper entitled "How Insects Choose Their Diet". Following, there was a luncheon recess to nearby Nottawa. The afternoon formal session included the following:

"*Psithyrus variabilis* in Michigan; Who will collect the first record?", Robert W. Husband, Adrian College

"The Chromosomes of *Gryllus veletus* and *Gryllus pennsylvanicus*: comparison and evolutionary significance.", Michael Tyrkus, Wayne State University

"The Hispinae of Michigan (Coleoptera, Chrysomelidae)", Daniel K. Young, Michigan State University

"An interesting nymphalid butterfly hybrid.", Roland L. Fischer, Michigan State University (presented by Daniel K. Young)

Mid-afternoon break. Coffee, punch, cookies.

"Families, Genera, and Species of Insects Associated with Nests of Michigan Bumblebees." Robert W. Husband, Adrian College and Thomas W. Brown, Michigan State University

"Sex Pheromones in the Reproductive Isolation of Pyraloid Species.", James Liebherr and Wendell L. Roelofs, Michigan State University

"Challenging forest insect problems in Michigan" Daniel G. Mosher, Michigan Department of Natural Resources

Slidefest (Nielsen and George Heaton).

In addition to the formal session, H. Don Cameron, who is a Greek and Latin Classicist but entomologically inclined, presented a fascinating discourse on the etymology of entomology.

(Continued p. 6, photos next page)

MES ANNUAL MEETING 1975 at Glen Oaks Community College. Top row: Dave Gosling, President-Elect, opening the meeting; Mo Nielsen, Executive Secretary presenting status of the Society; V. Dethier, guest speaker. Inset: Portion of Glen Oaks Community College. Center row: President Bob Husband, Mo Nielsen, Mike Tyrkus, Ruth Alford during break; Irv Cantrall, journal editor, Louise Cantrall, Dave Gosling. Bottom row: MES members and friends during break; V. Dethier, Dave Gosling, and Kathy Erdman.

ANNUAL MEETING 1975

Top row: Kathy Erdman, Dave Gosling, Mo Nielsen drawing book winners; President Bob Husband handing gavel over to Dave Gosling at conclusion of meeting. Center row: Luncheon at Rosie's (outside and inside); John Newman, Dan Young, Jim Liebherr during break. Bottom row: Field trip with MES members and Glen Oaks biology class. (Photos courtesy of Nancy Gosling and George Heaton).

ANNUAL MEETING (Cont. from p. 3)

During the mid-afternoon break, the drawing for the books donated by Julian Donahue of Entomological Reprint Specialists was conducted by Nielsen and assisted by Kathy Erdman. Stan Gangwere won "Why not eat insects." He commented that he had already purchased a copy previously and thought that two books on the subject would not increase his lack of fondness for eating insects. A copy of "Geographic variability in *Speyria*" was won each by Erich Brach, Dan Mosher and Dan Young. H. Don Cameron received "Butterflies of Lebonon". Kathy Erdman, who you recall was drawing the winning tickets, drew her own number and claimed "Lepidoptera pupae" -- "Just the book I wanted", she said. "Revision of North American *Papilios*" was Dave Evans' winner. The grand prize, won by Robert Heyd was the two-volume set of books "Index to the life histories of the North American Macrolepidoptera" by Tietz. Congratulations to the winners and a special thanks to Julian Donahue for the book contributions.

Cantrall made a brief announcement of the Endangered Species Program and urged members to report any insect or habitat that may be in jeopardy to either John Newman or himself. So far, most of the insects named in the U.S. have been butterflies!

At the conclusion of the papers, the customary installation of the 1975-76 officers was made by out-going President Husband, who handed the Society's gavel to the new President, Dave Gosling. Gosling accepted the honor and promised to work for a larger membership and even greater attendance at the next Annual Meeting. Brief mention was made of the "black-light" collecting trip to the Three Rivers State Game Area west of the college.

Nielsen and Glenn Belyea took the lead in organizing the evening's activities of collecting moths at UV and bait. A long bait trail was set out along a sandy road in an oak-aspen woods and a portable UV light was hooked up to an inverter plugged into a car cigar-lighter. While the evening was too cool and clear for good collecting results, eleven other members and students appeared and learned how these methods work in the field. The most noteworthy insect collected turned out to be a "junebug", *Phyllophaga borda* (Hom)--a NEW state record as determined by Cantrall!

COUNTY AND STATE RECORDS NEEDED FOR MICHIGAN

BERRIAN: *B. affinis, B. borealis, B. perplexus, B. rufocinctus, Psithyrus ashtoni, P. laboriosus*

CASS: *B. bimaculatus, B. borealis, B. perplexus, B. rufocinctus, P. ashtoni*

(Continued next column)

DR. JUSTIN M. LEONARD - 1909-1975

Justin Leonard was proud of his Iowa heritage and his early association with Iowa agriculture. He was born in Moulton, Iowa and graduated from Grinnell College with a B.A. in 1931 and received his M.A. and Ph.D. at the University of Michigan. Although his principal interest was associated with aquatic entomology, he continued to extend his visibility and authority in many areas of ecology. He published over 70 scientific articles involved with the mayflies, caddisflies, dragonflies, and other aquatic insects. He was a long time sustaining member of the Michigan Entomological Society.

His early research responsibility was as biologist with the Michigan Institute of Fisheries Research. It was during this assignment that he was instrumental in developing constructive programs for trout stream improvement. In 1946 he assumed the leadership for research in the Michigan Department of Conservation. He continued his interest in trout stream insects and published, with his wife Fannie, their outstanding work on the Mayflies of Michigan Trout Streams.

In 1964 he became professor of Natural Resources and Zoology at the University of Michigan. Since that time he has been recognized as an outstanding teacher, administrator, researcher and humanitarian. It is especially fitting that he was designated to receive the University of Michigan Outstanding Teaching Award for 1975. "Doc" Leonard's wit, vocabulary, and musical appreciation will be remembered indefinitely by those who were privileged to know him and work with him.

Richard W. Merritt
Gordon E. Guyer

ST. JOSEPH: *B. bimaculatus, B. borealis, B. perplexus, B. rufocinctus, P. ashtoni*

BRANCH: *B. borealis, B. nevadensis, B. perplexus, B. rufocinctus, P. ashtoni, P. laboriosus*

HILLSDALE: *B. borealis, B. rufocinctus, P. ashtoni*

VAN BUREN: *B. perplexus, B. rufocinctus*

CALHOUN: *B. perplexus, B. rufocinctus, P. ashtoni*

JACKSON: *P. ashtoni*

STATE: *Psithyrus variabilis*

Pleura dark (at least lower half)
Occiput (top of head) yellow (vs. black in *P. ashtoni*)
Abdomen entirely black (vs. some yellow in *P. ashtoni*)

Have you any of these? If so, send information to: M. C. Nielsen, 3415 Overlea Drive, Lansing, MI 48917.

RARE SPECIES (Cont. from page 1)

vertebrate species. This Invertebrates Committee needs the expertise of members of the Michigan Entomological Society.

Any member of the Society who knows of one or more species of arthropod (or other invertebrate), occurring in Michigan and which may be considered as rare or endangered, is requested to communicate with one of the members of the Invertebrates Technical Advisory Committee listed below. Information as to the reasons for listing the species as well as data on habitats or specific sites which need to be preserved is necessary.

John H. Newman, Dept. of Entomology, Michigan State Univ., East Lansing, MI 48824.
Henry van der Schalie (Chairman), Museum of Zoology, Univ. of Michigan, Ann Arbor, MI 48104.
Irving J. Cantrall, Museum of Zoology, Univ. of Michigan, Ann Arbor, MI 48104.

UNITED STATES BUTTERFLIES

Notice is hereby given that the Department of the Interior has evidence on hand to warrant a review of the following species of butterflies to determine whether they should be proposed for listing as either endangered or threatened species.

Scientific Name	Common Name	Where Found
Parnassius clodius strohbeeni	Strohbeen's parnassian	California
Anthocharis cethura catalina	Catalina orange tip	California
Euchloe hyantis andrewsi	Andrews' marble	California
Eurema dina dina	Dina's yellow	Florida and Cuba
Euplychia mitchellii	Mitchell's satyr	Indiana, New Jersey and Michigan
Ceryonis meadi alamosa	Mead's satyr	Colorado
Oenius chryxus valerata	Chryxus Arctic	Washington
Speyeria nokomis nokomis	Great Basin silverspot	Utah
Speyeria nokomis apacheana	Apache silverspot	California and Nevada
Speyeria nokomis nitocris	Mountain silverspot	Arizona
Speyeria nokomis caerulescens	Blue silverspot	Arizona, New Mexico and Mexico
Speyeria zerene myrtleae	Myrtle's silverspot	California
Speyeria zerene hippolyta		Oregon
Speyeria adiaste adiaste	Unsilvered fritillary	California
Speyeria adiaste clemencei	Clemence's fritillary	California
Speyeria adiaste atossa	Atossa fritillary	California
Speyeria egleis tehachapina	Tehachapl Mountain silverspot	California
Euphydryas editha wrighti	Wright's checkerspot	California
Euphydryas editha monoensis	Mono checkerspot	California
Poladryas minuta	Minute checkerspot	Texas
Limenitis archippus absoletus	Obsolete viceroy	Arizona, California and Nevada
Eumaeus atala florida	Atala	Florida and Cuba
Callophrys mossi bayensis	San Bruno elfin	California
Callophrys mossi doudoroffi	Doudoroff's elfin	California
Callophrus mossi windi	Wind's elfin	California
Callophrys lanoraieensis	Bog elfin	Maine and Canada
Callophrys hesseli	Hessel's hairstreak	Connecticut, Delaware, Maryland, New Jersey, New York, North Carolina and Virginia
Vaga blackburni	Hawaiian hairstreak	Hawaii
Lycaena arota nubila	Clouded tailed copper	California
Lycaeides melissa samuelis	Karner blue	New York and Canada
Lycaeides argyrognomon lotis	Lotis blue	California
Icaricia icarioides missionensis	Mission blue	California
Icaricia icarioides pheres	Pheres blue	California
Icaricia icarioides moroensis	Moro Bay blue	California
Philotes enoptes smithi	Smith's blue	California
Philotes battoides (El Segundo Population)	El Segundo blue	California
Apodemia mormo langei	Lange's metalmark	California
Stallingsia maculosus	Maculated manireda skipper	Texas
Megathymus coloradensis kendalli	Kendall's yucca skipper	Texas
Hesperia dakotae	Dakota skipper	Iowa, Minnesota, South Dakota and Canada
Problema bulenia	Rare skipper	Georgia, North Carolina, South Carolina, and Virginia
Panoquina panoquinoides errans	Salt marsh skipper	California and Mexico

BACKYARD BITES THWARTED

A new electronic mosquito repeller is now on the market. This device emits a barely audible high-frequency sonic wave that mimics the sound of the male mosquito. The female is attracted only to the male in the short time they are mating and otherwise his sound is repulsive to her. The unit which is the size of a cigarette package and weighs 2½ ounces, repells mosquitos up to 8 ft. away. One small transister battery powers the device for about 125 hours. Prices range from $10.49 to $12.95 at Forestry and Engineering supplies outlets.

Are you an active member, the kind that would be missed?
Or are you just contented that your name is on the list?
Do you attend the meetings and mingle with the flock?
Or do you stay at home and criticize and knock?
Do you help the work along or are you satisfied to only just belong.
When the business session comes around, do you pretend to be sick, then leave the work to just a few and talk about the "clique"?
Think this over member, you know right from wrong,
Are you an active member ... or do you just belong?

MICHIGAN ENTOMOLOGICAL SOCIETY
FINANCIAL STATEMENT, 12 MONTHS ENDING 31 DECEMBER 1974

RECEIPTS

Savings Account Interest	$ 82.83
Dues	1661.00
Subscriptions, THE GREAT LAKES ENTOMOLOGIST	1158.75
Sale of Separates to Authors	649.45
Sale of Back Issues, Journal and Newsletter	90.00
Sale of Decals	5.00
Subsidy (page costs)	1068.52
Donations, Misc. Income	31.10
TOTAL RECEIPTS	$4946.65

DISBURSEMENTS

Checking Account Charges		$ 3.20
Publication Expenses:		
NEWSLETTER, print and mail	$ 767.17	
JOURNAL, compose, print, mail	4098.00	4865.17
Postage, Mailing Fees, Mailing Permits		249.85
Addressograph Services		58.85
Misc. Printing (form letters, Entomology Notes)		115.81
Supplies		15.60
Misc. (Fidelity Bond, Copyright, Insurance, Mileage, etc.)		72.15
TOTAL DISBURSEMENTS		$5380.63

MICHIGAN ENTOMOLOGICAL SOCIETY
STATEMENT OF FINANCIAL CONDITION
AS OF 31 DECEMBER 1974
(PERIOD OF 1 JAN. 1974 TO 31 DEC. 1974)

ASSETS

CURRENT ASSETS

Cash on Hand			$2546.77
Accounts Receivable			475.80
Prepayments			30.00
Inventories:			
Postage	$ 0.82		
Supplies (est.)	150.00		
NEWSLETTERS, at cost (est.)	400.00		
THE GREAT LAKES ENTOMOLOGIST, at cost (est.)	3000.00		3550.82
TOTAL CURRENT ASSETS			$6603.39

LIABILITIES

CURRENT LIABILITIES

Accounts Payable			$ 0.00
Prepaid Subscriptions:			
Volume VII (1 issue)	$285.00		
Volume VIII	950.00		
Volume IX	30.00	$1265.00	
Prepaid Dues		20.00	
TOTAL CURRENT LIABILITIES			1285.00
SURPLUS			5318.39
TOTAL			$6603.39

MONIES OF THE SOCIETY, 31 DECEMBER 1974

Petty Cash	$ 5.40	
Checking Account	1050.18	
Savings Account	1491.19	$2546.77
MONIES OF THE SOCIETY, 31 DEC. 1973 (last fiscal year report)		$2960.76

MEMBERSHIP: As of 31 December 1974, the Society had 405 members in good standing--compared to 436 on December 1973.

SUBSCRIPTIONS: As of 31 December 1974, there were 190 paid subscriptions to THE GREAT LAKES ENTOMOLOGIST.

H. C. NIELSEN
Executive Secretary

Dated: 20 April 1975

NEW MEMBERS

BAKER, JAMES, 320 Territorial Rd., Manchester, MI 48158. Student.

BIELECKI, JIM, 1534 Evangeline, Dearborn Hghts., MI 48127. Forest insects of the Great Lakes area.

BUCAR, PAUL, 235 Woodlawn Dr., Trafford, PA 15085. Student.

ELLIOTT, NORMAN, 317 W. Cedar St., Kalamazoo, MI 49006. Student.

ELSNER, ERWIN, 6089 Lincoln Ave., Stevensville, MI 49127. Collecting, taxonomy, and raising of LEPIDOPTERA. Student.

FC ERTSMA, JOHN, JR., 5477 McCords, Alto, MI 49302.

GAMBILL, ALAN, 8208 Oak Blvd. S., Rockwood, MI 48179.

HAMMON, ROBERT, 179 E. Water St., Constantine, MI 49042. LEPIDOPTERA.

HARRIS, LAURA, 36 S. Stadium, Oregon, Ohio 43616. Student.

HEWETT, CHERYL, Rt. 2, Bright Rd., Findlay, Ohio 45840. Student.

KING, HARRY, 855 S. Jefferson St., Mason, MI 48854. Collecting; local, prime collecting time, and environment for LYCAENIDAE, HESPERIOIDES, CATOCALA, and SPHINGIDAE.

LAYMAN, JAMES G., P. O. Box 322, Taylor, MI 48180. Research pertaining to crickets.

MASSER, PHILIP, 106 N. Wayne, Mendon, Ohio 45862. Student.

PINKAL, WALTER, 325 Whitehall Ave., North Lake, IL 60164. General insect collection.

PORTER, NANCY, 6606 Lincoln Ave., Baroda, MI 49101. LEPIDOPTERA.

SCANLON, PATRICK F., 1817 Reslyn Rd., Grosse Pointe Woods, MI 48236. Collecting, taxonomy, evolution, and biology and ecology of beetles. Student.

SWOVERLAND, RANDY, 3662 Hemneter, Saginaw, MI 48603. Student.

TERRY, ROBERT, Rt. 2, Box 2175, Hale, MI 48739. Mainly butterflies and moths.

TINNEY, DONALD J., 103 N. Charles St., Apt. 113, Adrian, MI 49221. Student.

WITTE, STACIE, 3212 John R., Trenton, MI 48183. Student.

YEAGLEY, BRAD, Rt. 1, Osseo, MI 49266. Student.

ATTENTION NEW MEMBERS

The Society still has quantities of back issues of the Journal (The Great Lakes Entomologist) and Newsletter. New members will find many useful articles and helpful hints in back issues of the Newsletter. Sets of available Newsletters, Volumes 13-19, can now be obtained for $2.50, postpaid. Journals are available at $2.00 per Volume, except Volume 1 which is $3.00. Take advantage of this special offer by contacting the Executive Secretary NOW!

HISTORICAL INFORMATION NEEDED

To all members: We are preparing a comprehensive booklet on the History of the Michigan Entomological Society and need historical contributions. Useful items include photos, insect record notebooks, lists of specimens collected, interesting collecting trips, etc. Photos are especially desirable and can be color or black and white and include people, insects, and collecting trips. We'll make copies and return originals. Also, we would like to hear comments about the Society or your philosophy on what direction the Society or entomology in general should take.

Dig into your files, drawers, collecting bag, and brain, and see what you've got! We really need your help at this time. Get us some of this "stuff" before it's lost to posterity. Thanks.

Send to L. F. Wilson, c/o Dept. of Forestry, Michigan State Univ., East Lansing, MI 48824.

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If ants are so busy, how come they have time to go on so many picnics?

Chicago Tribune

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ADDRESS CHANGES

APSEY, ROBERT PATRICK, USS Mount Vernon, LSD-39, FPO San Francisco, Calif. 96601.

BERNARD, ERNEST C., Dept. of Plant Pathology and Plant Genetics, Univ. of Georgia, Athens, GA 30602.

DAVIS, LLOYD R., JR., Rt. 4, Box 322-C, Gainesville, Fla. 32608.

ERDMAN, KATHY A., 2652 Snyder, Hickory Corners, MI 49060.

FOWLER, RICHARD F., 1518 Manley Rd., B43, West Chester, PA 19380.

GROOTHUIS, DENNIS, 3612 Saratoga Dr., Nashville, Tenn. 37205.

HALL, DAVID J., Wisc. Dept. of Natural Resources, 3911 Fish Hatchery Rd., Madison, WI 53711.

HARDWICK, DAVID F., Biosystematics Research Institute, Central Experimental Farm, Ottawa, Ontario, CANADA.

LUCAS, WILLIAM J., JR., 11359 Boyne Blvd., Allendale, MI 49401.

MASTERS, JOHN H., P. O. Box 2543, Frejno, Calif. 93745.

ROTH, JAMES C., 5824-B Hollister Ave., Goleta, Calif. 93017.

SANDERS, WILLIAM P., 139 W. Wilson St., Orange, Calif. 92667.

SORENSEN, JOHN T., 201 Wellman Hall, Univ. of Calif., Berkeley, Calif. 94720.

TABOADA, OSCAR, 100 Kedzie Bldg., Michigan State Univ., East Lansing, MI 48824.

WARD, PHILIP, Zoology Bldg., Univ. of Sydney, Sydney, N.S.W. 2006 AUSTRALIA.

PUBLICATIONS

GEOGRAPHIC VARIABILITY IN *SPEYERIA*, COMMENTS, RECORDS AND DESCRIPTION OF A NEW SUBSPECIES (NYMPHALIDAE), by Arthur H. Moeck. Originally published in 1957, this booklet has proven to be a popular and indispensible guide to some of the most perplexing groups of North American fritillary (silverspot) butterflies, with particular emphasis on the western species. Because of this popularity, and because it is virtually unobtainable in the used book market, this book has now been reprinted by Entomological Reprint Specialists. In addition to describing the new subspecies *Speyeria zerene gloriosa*, Moeck discusses the following species, with distribution maps for most: *Speyeria idalia* (briefly), *edwardsii* (briefly), *cybele*, *aphrodite*, *coronis*, *zerene*, *callippe*, *egleis*, *atlantis*, and *hydaspe*. 48 pages, 6 photographs, 7 maps, references, 1957 (reprinted June 1975). Paperbound. $3.50

THE MAYFLIES, OR EPHEMEROPTERA, OF ILLINOIS, by B. D. Burks. With a new Preface by Dr. George F. Edmunds, Jr. viii + 216 pages, 395 figures, 6 halftones. Originally published in 1953 as "Bulletin of the Illinois Natural History Survey," vol. 26, article 1. Reprinted June 1975 by Entomological Reprint Specialists. Far more than a treatment of Illinois species, this book has proven to be an invaluable reference to the mayflies of most of the North Central and Northeastern United States and adjacent Canada. In all it discusses 48 genera and 222 species, with Illinois records of 126 species (of which 15 are described as new). Cloth bound. $15.00

THE STONEFLIES, OR PLECOPTERA, OF ILLINOIS, by Theodore H. Frison. vi + 191 pages, 344 figures, frontispiece. Originally published in 1935 as "Bulletin of the Illinois Natural History Survey", vol. 20, article 4. Reprinted June 1975 by Entomological Reprint Specialists. The stoneflies are recognized as one of the most important groups of aquatic organisms, not only as significant components of the food chain but as indicators of water quality. Since so many of the species have narrow ecological requirements, the importance of proper identifications is obvious. This profusely illustrated book is still the basic reference for the identification of the stoneflies of Illinois and adjacent states. Some 39 Illinois species, representing 17 genera and 8 families, are treated in detail. In addition, Dr. Frison presents a new classification of Plecoptera, in which he recognizes 9 families and includes keys to the nymphs and adults of all North American families. Cloth bound. $15.00

NOTE: The above three books can be ordered from: Entomological Reprint Specialists, P. O. Box 77224, Dockweiler Station, Los Angeles, California 90007, U.S.A.

MICHIGAN COUNTY MAP INFORMATION

A complete set of county maps is included in the publication "YOUR GUIDE TO FUN IN MICHIGAN", available for $5.95 from: MICHIGAN UNITED CONSERVATION CLUBS, 2101 Wood St., Lansing, MI 48912. Telephone: 517/371-1041.

MICHIGAN HIGHWAY MAP

The new 1975 Michigan State Highway Map is now available for free distribution. Simply request one by sending a postcard to Michigan Department of State Highways and Transportation, State Highway Bldg., Lansing, MI 48926. Highway maps will hereafter be published biennially!

NATURE CONSERVANCY DIRECTORY

The Nature Conservancy has recently announced the availability of their new Preserve Directory featuring the location, size, acquisition history and natural features of over 1200 Conservancy projects. A valuable source book for anyone concerned about our precious natural heritage. It will also be useful to those who may wish to investigate the insect fauna in unique natural areas within their state. For a copy, send $3.00 ($5.00 for non-members) to The Nature Conservancy, Dept. PD, 1800 N. Kent St., Arlington, Virginia 22209.

MISCELLANEOUS U.S. PUBLICATIONS

ENVIRONMENT

41A THE RIGHT TO EXIST, A REPORT ON OUR ENDANGERED WILDLIFE. 1969. 12 pp., illus. Contains thumbnail sketches of several endangered species. Possible programs for their protection are suggested and evaluated. I49.66:69 S/N 2410-00161 40¢

42A OUTDOOR RECREATION AND THE ENVIRONMENT. 1974. 91 pp. Focuses on the conflict between preserving the environment and increasing demands for outdoor recreation facilities. Areas studied include recreation on private land, along coastal areas, national parks, and urban areas. EP1.23/3:600/5-73-012E S/N 5501-00811 $1.40

43A WORKING TOWARD A BETTER ENVIRONMENT: CAREER CHOICES. 1974. 15 pp., illus. This booklet provides information on employment opportunities for technicians, researchers, and educators in jobs related to environmental management. Includes a list of post-high schools and colleges offering environmental science programs, and a description of jobs in major environmental categories. EP1.2:W89/974 S/N 5500-00130 40¢

(Continued next page)

82C PLANNING FOR WILDLIFE AND MAN. 1974. 56 pp., illus. The delicate balance between man and wildlife, and the right of each to the land, must always be kept in mind by land use planners. This book tries to provide an insight into that relationship by discussing natural and cultural resources as determinants of land use, by reviewing land design principles as they relate to visual aspects of the environment, and by listing selected output criteria, such as camping, photography, and foot trails. I49.2:W64/8 S/N 2410-00392 $1.10

INSECTS

131A INSECTS THAT CARRY DISEASE. 1974. 15 pp., illus. Flies, roaches, mosquitoes, fleas, and ticks are all nuisances, but more importantly all may be dangerous to your health. This pamphlet explains the dangers each insect carries, and suggests ways to eliminate insects around your home. HE20. 7002:In7 S/N 1723-00089 40¢

38D. IDENTIFICATION AND CONTROL OF HONEY BEE DISEASES. 1973. 18 pp., illus. A1.9:2255 S/N 0100-02845 30¢

37D. CONTROLLING THE BROWN RECLUSE SPIDER. Photos of this spider, which is found principally in the Southern and Central States, are included for easy identification, as well as tips on control of the spider and on first aid for spider bites. Rev. 1973. 8 pp., illus. A1.35:556/2 S/N 0100-02958 25¢

49E. CONTROLLING CHIGGERS. Chiggers, sometimes called red bugs, are common pests to both man and animal. This book describes measures to control chiggers, their life cycle, and treatment for bites. 1973. 12 pp., illus. A1.77:137/2 S/N 0100-02949 25¢

59X. CONTROLLING THE JAPANESE BEETLE. Contains a description of Japanese beetles and describes the damage they cause. Natural controls, control of grubs and beetles, and precautions to be taken when applying insecticides are also discussed. Rev. 1973. 16 pp., illus. A1.77:159/3 S/N 0100-02794 35¢

38U. GRASSHOPPER CONTROL. Tells how to control grasshoppers on farms and ranches by the use of insecticides and by cultural measures, such as tillage. Describes precautions to be taken when using these methods. Rev. 1973. 11 pp., illus. A1.9:2193/6 S/N 0100-02822 20¢

39U. GYPSY MOTH, A MAJOR PEST OF TREES. Gives a brief description and discusses the habits of the gypsy moth, explaining the damage to trees caused by them and the work the USDA has been doing in an effort to control and prevent the spread of this pest. 1973. 12 pp., illus. A1.68:1006/2 S/N 0100-02844 20¢

93AA. THE USE OF REMOTE SENSING IN MOSQUITO CONTROL. The technology of remote sensing, developed by the space program for identification of surface features from the vantage point of an aircraft or satellite, has substantial application in precisely locating mosquito breeding grounds. Preliminary results of NASA technology working cooperatively with a city government agency in solving this problem are discussed in this brochure. 1973. 14 pp., illus. NAS 1.2:M85 S/N 3300-00497 55¢

102B. INSECTS AND RELATED PESTS OF HOUSE PLANTS. Tells how to recognize and control the most common insects that attack your plants. Includes descriptions of harmful insects and methods for their control, using sprays and dips. Rev. 1972. 16 pp., illus. A1.77:67/7 S/N 0100-01577 25¢

21W. SPRAYING AND OTHER CONTROLS FOR DISEASES AND INSECTS THAT ATTACK TREES AND SHRUBS. 1968. 52 pp. I29.26:6/4 S/N 2405-00148 55¢

13K PROTECTING HOME CURED MEAT FROM INSECTS. 1974. 6 p., illus. A1.77:109 S/N 0100-03212 25¢

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CONTROLLING HOUSEHOLD PESTS. 1971. 32 pp. 160A. 20¢. Procedures and proper pesticides for controlling rats, cockroaches, termites, clothes moths, carpet beetles, etc.

LAWN INSECTS. 1971. 23 pp. 223A. 20¢

SAFE USE OF PESTICIDES. 1972. 6 pp. 166A. 10¢

SUMMARY OF INVESTIGATIONS OF ELECTRIC INSECT TRAPS. Oct. 1974. Tech. Bull. No. 1498, Agri. Res. Serv., USDA. A very comprehensive report of different kinds of light-traps used for different insect problems and sampling. Includes a complete reference to other investigations of light-traps and an appendix of key references listed by order and subject matter.

Order by number and title from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Remit by check, money order, or Superintendent of Document coupons (available in 5¢ denominations, in any quantity).

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MICHIGAN ENTOMOLOGICAL SOCIETY

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