

# NEWS

of the LEPIDOPTERISTS' SOCIETY

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## PRESIDENTIAL PROFILE

JAMES WILSON TILDEN was born in Philo, Mendocino Co., California, January 31, 1904. The family moved to Turlock, CA, in 1907, and then to a farm near Hilmar, southwest of Turlock, where they lived until 1923. The family then moved to Santa Cruz. Bill lived here until 1938, working at construction most of the time, but also at food processing and music, until the Great Depression of the 1930's. In 1938 he entered San Jose State College (now San Jose State University), taking an AB in Biology in 1942. He enlisted in the Navy in 1942 and served until November 1945. He then entered Stanford University, taking an M.A. in 1947 and a PhD in 1948, in Entomology. Dr. Tilden took a position on the faculty of San Jose State College in the spring of 1948 and taught there until his retirement in 1970. He taught Insect Morphology, Vector Control, and other courses in Entomology, doubling upon occasion in Botany, Ornithology and General Ecology. He is at present Professor of Entomology Emeritus.

He and Hazel Miller were married in 1943, and have three grown children --two sons and a daughter.

Bill took an interest in 'organic diversity' in childhood, and has continued this interest ever since, observing birds, and collecting butterflies, beetles and dragon flies. Since retirement he has worked most especially with butterflies.

Interests include Taxonomy, life histories, food habits and distribution as well as photography. Numerous published papers range from brief notes to booklets, and include orders other than Lepidoptera. Current interests, holarctic butterflies, arctic butterflies and butterflies of the southern border of the United States.



Dr. James Wilson Tilden

Letter to the Editor:

Dear Jo,

I was shocked and angered to learn that a name I am considering using for a new subspecies of *Papilio indra* in California was printed in the 1977 Season summary. The manuscript describing this butterfly is still in preparation, and the type series not yet fully accumulated. I am dismayed by the lack of discretion on the part of the collector who used this unpublished name in his report and by the lack of judgement by the Zone 1 Coordinator who failed to verify that the name was in print. To add insult to injury, the name was misspelled with an incorrect gender ending. At no time did either of the two above individuals contact me to ascertain whether or not the name was published.

I trust that the Lepidopterists' Society will take appropriate measures to ensure that this unfortunate situation does not occur again. The ZONE Coordinators should check all unfamiliar names with their alleged authors. There are enough taxonomic snarls in the literature now --we don't need any more.

Sincerely, John F. Emmel, 41783 El Camino Drive,  
Hemet, California 92343

The error seems to have occurred through an unfortunate series of oversights and misunderstandings for which everyone has expressed sincere regrets to us. The Editor apologizes to Dr. Emmel for having allowed the name in question to appear in print in the NEWS prematurely.

Jo Brewer, Ed.

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RESEARCH REQUESTS

INFORMATION WANTED regarding the history of *Phoebis sennae marcellina* in southern California. Especially need records, abundance, information etc. from 1930's, 40's & 50's for possible correlation with photo-chemical air pollution increases during this period. All information, even casual observations badly needed. Ron Vanderhoff, 21921 Seaside Lane, Huntington Beach CA 92646.

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I NEED SERIES OF *Battus philenor* for taxonomic study. I will accept worn material as well as fresh, from any location. Must have location & date. Will trade or purchase. All assistance will be acknowledged. George T. Austin, Dept of Biological Sciences, University of Nevada, Las Vegas, NV 89154.

ERRATA -FIELD SUMMARY IN MAR/APR News, 1978

ZONE 1: page 4, line 51 should read: "5600', 15 June(WD). *P. indra* ssp., Tom's hill....."  
 ZONE 7: page 7, last line, for "Phrymata" read "Phymata"

ZONE 5: EASTERN MIDWEST: MISSOURI, KENTUCKY, WEST VIRGINIA, OHIO, INDIANA, ILLINOIS, IOWA, MINNESOTA, WISCONSIN, MICHIGAN. Coordinator: M.C. Nielsen (MN). Contributors: G. Balogh (GB), R. Bracher, C. Burkhart (CB), T. Carr (TC), C. Covell, Jr. & II (CC), R. Dana (RD), L. Dow, B. Drees, W. & A.M. Duesterbeck (WD), L. Ferge (LF), L. Gibson (LG), M. Grocoff (MG), R. Grothe (RG), D. Hawks, D. Hess (DH), G. Holbach (GH), F. Karpuleon (FK), I. Leeuw (IL), L. Martin (LM), G. Meszaros (GM), W. Miller (WM), M. Minno (MM), S. Mueller (SM), C. Oliver, D. Oosting (DO), J. Parkington (JP), D. Parshall (DP), J. Perona, J. Prescott (JP), R. Rahn (RR), Y. Sedman (YS), A. Showalter (AS), E. Shull (ES), W. Sieker (WS), J. Sternburg (JS), J. Weintraub (JW).

GENERAL COMMENTS: A total of 37 separate reports were received--a 52% increase over last year! The winter was extremely cold, followed by an early spring which forced early emergences throughout most of the area and season. Many reported good to excellent seasons, especially for butterflies (a total of 150 species for the Zone), and good moth collecting, especially *Catocala*. Southern strays and migrants were recorded in many areas this year; no significant migrations of *D. plexippus* were reported; yet the Monarch was common throughout the Zone and arrived very early in northern areas. Butterflies reported up during the year included: *P. communis*, *B. philenor*, *G. marcellus*, *P. protodice*, *E. lisa*, *C. henrici*, *L. helloides*, *N. v-a. j-album* and *antiopa*, *B. bellona* and *S. cybele*.

CAPITALS indicate a new county record and/or range extension. (Unfortunately, some contributors do not consult published checklists and other known sources of data to determine if their records are either new or unique, or are significant range extensions.)

MISSOURI: Grothe found collecting good to very good from mid-March through October, with good weather, and reported more species than last year; especially common were *G. marcellus* (spring) and *C. cesonia*. Hess, collecting with J.R. Heitzman and J. Adams on 4 July, observed a total of 53 butterfly species!

CHOICE BUTTERFLIES: *E. dion*, 9 June ('76), ST. CHARLES CO. (RG-first since '32); *A. midea*, St. Charles Co. (RG); *E. nicippe*, 1-5 July, Chariton, Lewis, Saline Cos (DH); *P. m-album*, 16 July, ST. CHARLES CO. (RG); *C. gryneus*, 5 July, Saline Co. (DH); *C. henrici*, 9-15 April, ST. CHARLES CO. (RG); *E. ontario*, 29 June, ST. CHARLES CO. (first time N of Missouri R.-RG); *P. coenia f. rosa*, *C. gorgone carlota*, *E. claudia*, St. Charles Co. (RG); *C. pegala olympus-texana* (intergrades), 5 July, Saline Co. (DH).

STATE RECORDS: *Boloria bellona*, 7 Sept., St. Peters, St. Charles Co. (Sev.-RG); *Isoparce cupressi*, 30 Aug.-1 Sept., nr. Brosley, Butler Co. (1♂, 1♀ @ UV-Hawks).

KENTUCKY: Covell reported a cold winter, but an early spring with no late freezes, and good moisture; generally an excellent year for all groups of lepidoptera. Gibson found the season normal and experienced an extremely good collecting season, recording 83 butterfly, 26 Sphingidae and 29 *Catocala* species! On 2 July at Horner Bird & Wildlife Sanctuary, Oldham Co., the Xerces Soc. Annual July 4th Butterfly County recorded 28 species. *P. cresphontes* and *J. coenia*, usually common in northern counties, were not observed.

CHOICE BUTTERFLIES: *A. samoset*, *aesculapius*, *vialis*, 9 May, Menifee Co. (LG); *E. dion* & *P. viator*, 28 May, Fulton Co. (LG); *P. hobomok*, *zabulon*, 9-13 May, Menifee, Owsley, Powell Cos (LG); *P. origines*, 5 Sept. Allen Co. (AS); *H. metea*, 14 April, Meade Co. (LG); *H. leonardus*, 27 Aug., Meade Co. (LG); *E. lucilius*, 24 April, Bracken Co. (in association with *Aquilegia canadensis*-LG); *A. cellus*, 10 May, Menifee Co. (LG); *P. protodice*, 28 May, Fulton Co. (LG); *P. virginianus*, 9 April, Owsley Co. (LG); *C. cesonia*, 28 Sept., Gallatin Co. (in association with *Amorpha fruticosa*-LG); *A. midea*, 26 March, Warren Co. (AS); *H. titus mopsus*, 2 July, Oldham Co. (CC); *P. m-album*, 9 April-9 July, Carroll, Harlan, Owsley Cos. (CC, LG); *C. henrici*, 25 March-24 April, Boone, Bracken, Lee, Owsley, Warren Cos. (LG-associated with red cedar & redbud, AS); *C. niphon*, 8-9 April, Lee, Owsley Cos (LG); *E. laeta*, 2-10 July, Black Mtn., Harlan Co. (CC, LG, AS); *S. c. falacer*, *caryaevorus*, *edwardsii*, *liparops strigosa*, 10 June-2 July, Boone, Carroll, Harlan, Oldham Cos (CC, LG, AS); *L. thoe*, 28 May, Fulton Co. (LG); *G. lygdamus* ssp., *C. ebenina*, 9 April, Owsley Co. (both common in ravine habitat-LG); *C. a. pseudargiolus f. neglecta major*, 10 May, Owsley Co. (LG); *B. bellona*, April, May, Sept., Oct., Harlan, Oldham Cos (apparently spreading SW across state-CC); *S. diana*, 17 June-10 July, Harlan Whitley Cos (CC-common in eastern Counties, TC, LG); *S. aphrodite*, *cybele*, 7 July-13 Sept., Harlan, Jefferson Cos (CC, LG); *C. pegala*, 2 July, Oldham Co. (CC).

CHOICE MOTHS: *M. rustica*, 6 Sept., Boone Co. (LG); *M. jasminearum*, 9 July, Whitley Co. (TC); *S. canadensis*, 14 June, Oldham Co., 13 Aug., Boone Co. (LG); *P. astylus*, 9 July, Whitley Co. (TC); *D. versicolor*, 6-8 July, Harlan Co. (LG); *O. hibisci*, *L. antennata* and *Eupsilia* sp., 9 March, Jefferson Co. (at bait, CC & R. Fellows); *C. illecta*, 16-25 June, Bracken, Campbell Cos (at UV-LG); *C. residua*, *cerogama*, 7 Aug., Boone Co. (at bait-LG); *C. judith*, *andromedae*, *serena*, *nebulosa*, *subnata*, 6-9 July, Harlan Co. (at UV-LG); *C. robinsoni missouriensis*, *junctura*, *lacrymosa*, 26-27 Aug., Meade Co. (at bait-LG).

FOODPLANT RECORD: *P. cresphontes*, larvae on potted Citrus tree, 5 Sept., Allen Co. (AS).

STATE RECORDS: (All LG) *Sphinx gordius*, 6 July, Harlan Co.; *Erinyis obscura*, 1 Oct., Boone Woods Pk, Boone Co.; *Loxostege ceralalis*, 27 Aug., Otter Creek Pk., Meade Co.

WEST VIRGINIA: Oliver and Prescott reported briefly on trips into the state during the summer. On 11 July, Oliver found *C. philodice*, *eurytheme*, *S. cybele*, *aphrodite*, *atlantis*, and *Ctenucha virginica* common, and took one *E. laeta* (?) on Yarrow flowers, at 4500 ft. on and near Spruce Knob, Pendleton Co. Unusual partially melanic *P. tharos* found in 1975 and 1976, were not seen: scrub heathland at 4700-4800 ft. was curiously devoid of interesting lepidoptera! Bog at Spruce Knob Lake, 3800 ft., yielded *B. selene* and one *C. interior* (worn ♂); meadow along Gandy Creek, 3400 ft., produced *B. selene*, *bellona*, above *Speyeria*, *C. pegala* (Blue Ridge type of V appearance, with tendency to lose yellow patch) and *H. titus*. Descending along Gandy Creek also yielded *E. clarus*, *B. philenor*, *P. glaucus* on milkweed flowers. A return to same areas on 11. Aug., found collecting poor, with one *L. astyanax* (with clear trace of white band on FW) at 4500 ft. Prescott sent a detailed account of observing 100's of *B. philenor* sunning on the bed of Concrete Creek, near Charleston, along I-79, on 10 Sept. At one time, he estimated 300 *philenor* resting in a space of about 15 feet, and counted about 50 "sitting on various flowering plants":

OHIO: Six reported to the state, which experienced the coldest winter on record, followed by the earliest spring of record, with about normal rainfall and temperatures most of the collecting season. Carr found most species appearing earlier than normal all season in the "Oak Openings", west of Toledo. He enjoyed good moth collecting with 21 species of Sphingidae at MV and UV, and took 29 species of *Catocala* at MV, UV, bait and by "tree-tapping". While his collecting area is devoid of Walnut and Hickory, several of the Juglandaceae feeding *Catocala* were collected in fresh condition! Martin, reporting from north-central Ohio, found *D. plexippus* common, Nymphalidae up sharply in numbers, especially *H. milberti*, *V. atalanta*, *C. virginianus*, *P. tharos* and *S. cybele*; Papilionidae were normal to above, especially *P. glaucus* and *G. marcellus*; Lycaenidae and Hesperidae were generally less abundant, except for *C. a. pseudargiolus*.

CHOICE BUTTERFLIES: *A. samoset*, 7 May, VINTON CO. (second county record-DP); *A. vialis*, 30 April, VINTON CO. (DP), 25 July, Prebles Co. (DH); *H. leonardus*, 11 Sept., VINTON CO. (DP); *P. cresphontes*, 25 July, Prebles Co. (DH); *E. lisa*, VINTON CO. (common-DP); *F. Tarquinius*, Lucas Co. (common all season-TC); *L. helloides*, Lucas Co. (down in numbers-TC), 4-5 Sept., WYNDOT CO. (second state location-DP); *L. arthemis astyanax*, 19 May, Lucas Co. (partial white band on FW, 1st in area-TC); *N. v-a. j-album*, 29 April, CUYAHOGA CO. (GM); *N. milberti*, 29 Oct., south of Wooster, Wayne Co. (Drees); *E. phaeton*, 27 May-8 June, Lake, Summit Cos (GM); *L. anthedon*, *appalachia leewi*, 25 June-early Aug., Lucas Co. (common in swamp forest-TC); *C. pegala alope*, 20-25 July, Au Glaise, Prebles Cos (DH).

CHOICE MOTHS: (all Carr, except as noted) *D. hylaeus*, 27 June, Lucas Co.; *S. eremitus*, 12 July, Lucas Co.; *S. gordius*, 19 May-16 Aug., Lucas Co.; *S. drupiferarum*, 18 May-6 July, *C. juglandis*, 8 July, Lucas Co.; *E. achemon*, 14 July, Lucas Co.;

*S. abbottii*, 20 May-16 July, Lucas Co.; *A. stigma*, *senatoria*, *virginiensis*, late June-early July, Lucas Co.; *A. luna*, Lucas Co. (two full broods); *H. maia*, late Sept.-mid-Oct., Lucas Co. (abundant); *C. antinympha*, 4 Aug.; *lacrymosa*, 8-16 Aug.; *nebulosa*, 30 July; *meskei*, incl. f. *krombeini*, 5 July-14 Aug.; *sordida*, 6-14 July; *coccinata*, 20 June-25 July; *connubialis*, 4 July-3 Aug.; *micronympha*, 6 July-all Lucas Co.; *Atteva aurea* (*punctella* Cramer), 25 July, Lorain Co. (in cop. at 1830, LM); *S. argenteomaculatus*, 23 May, Lucas Co.  
FOODPLANT RECORDS: *D. plexippus*, ovipositing on stems and unopened florets of *Asclepias incarnata* flower cluster, Lorain Co.; *H. cecropia*, 2nd instar larvae on dwarf apple and Pussy Willow (*Salix* sp.), Huron Co.; *Zale lunata* var. *edusa*, larvae on willow, Huron Co. (all Martin).

INDIANA: Nine collectors responded, including those from Minno and Shull, who sent in very detailed reports. Like most of the Zone, their winter was one of the coldest, followed by an extremely hot May, which resulted in many early records. Shull saw late summer and fall species down numerically, yet he collected 89 species of butterflies (incl. 6 species in copula, with the female flying) in more than 125 species of moths. Minno found 1977 his best collecting year yet, recording 91 species of butterflies and many more moths! He found *P. protodice* and *S. aphrodite* *alcestis* exceedingly common at Winamac, Pulaski Co. throughout the season; *S. caryaevorus* and *liparops strigosa* abundant and sympatric in wooded area in Tippecanoe Co.; and *C. henrici turneri*, common near *Cercis canadensis* stands. Bracher, at South Bend, saw a large spring brood of *P. glaucus*, yet feels that butterflies are becoming scarcer every year because of extensive real estate developments. He finally succeeded in rearing a few *G. marcellus* on Pawpaw after trying for 17 years! *Catocala* were also scarce in the South Bend area.

CHOICE BUTTERFLIES: *E. dion*, 23 June-3 July, LaGrange Co. (MM, ES); *P. viator*, 3-23 July, LaGrange, Porter Cos (MM); *P. byssus*, 17 July, PULASKI CO. (MM); *P. mystic*, 20 May, Wabash Co. (ES); *H. leonardus*, 25 Aug.-4 Sept., LaGrange, Porter, Pulaski Cos (GB, MM, ES); *N. therminier*, 26 July-5 Aug., Brown, Martin Cos (MM, ES); 21 Oct., Tippecanoe Co. (at light-MM); *E. lucilius*, 23 May, Kosciusko Co. (ES); *E. baptisiae*, 5 May-18 June, Kosciusko, Newton, Pulaski, Tippecanoe Cos (MM, ES); 11 Sept., White Co. (MM); *E. martialis*, 8 May, Jasper Co. (MM); *E. horatius*, 24-30 April, 25 June-17 July, 4 Sept., Clarke, Kosciusko, Pulaski, Warren Cos (MM, ES); *S. hayhurstii*, 17-26 July, Martin, Pulaski Cos (MM); *A. lyciades*, 6 Aug., Monroe Co. (DH); *B. philenor*, 12 Aug., Elkhart Co. (CB); *P. cresphontes*, 25 July, Montgomery Co. (DH); *P. napi oleracea*, 8 May-25 Aug., Kosciusko, LaGrange Cos (CB, TC, ES); *E. lisa*, 30 Aug., Elkhart Co. (CB); *E. nicippe*, 10 Aug., Allen Co., (ES); *P. sennae eubule*, 30 Aug., South Whitley Co. (ES); *E. olympia*, 8 May, Jasper Co. (MM); *C. henrici turneri*, 16 April-14 May, Knox, Monroe, Tippecanoe Cos (MM); *S. cecrops*, 28 July, Clarke Co. (MM); *S. carvaeovorus*, 26 June-4 July, Brown, Tippecanoe Cos (MM, ES); *S. acadica*, 10 June, Kosciusko Co. (ES); *S. edwardsii*, 31 July, LaGrange Co. (MM); *E. ontario*, 8 July, Brown Co. (southernmost record), 29 Aug. (late date), Wabash Co. (ES); *F. tarquinius*, 23 May, Salamonie River State Forest (up in numbers, ES); *L. helioides*, 10 June, 26 Aug., Elkhart, Kosciusko Cos (CB, ES); *L. dorcas*, 20 July, Kosciusko Co. (ES); *L. melissa samuelis*, 23 July, Porter Co. (MM); *G. lygdamus couperi*, 20 April, Lake Co. (IL); *C. gorgone carlota*, 10 Sept., Tippecanoe Co. (MM); *S. idalia*, 25 June, Pulaski Co. (MM); *S. atlantis*, 23 June, LaGrange Co. (his first, ES); *S. aphrodite*, 23 June, LaGrange Co. (down in numbers, ES); *L. anhedon*, 12 May, Brown Co. (ES); *L. creola*, 3 July, LaGrange Co. (MM); *L. eurydice*, 20 May, 24 Aug., Elkhart, Wabash Cos (CB, ES); *L. appalachia leeuwi*, 13 July, LaGrange Co. (intergrades with *eurydice* in NE area, ES); *C. pegala* ssp. 29 June-24 Aug., NE Counties (various intergrading forms, CB, ES).  
CHOICE MOTHS: *S. kalmiae*, 13 June; *P. modesta*, 6 July; *C. juglandis*, 7 July--all Brown Co. (ES); *C. angulifera*, 7 Aug., Parke Co. (1 ♂ attracted to captive ♀ at 2130 JS); *E. deflorata*, 13 June, Brown Co. (ES); *P. cerussata*, 25 Sept., Tippecanoe Co. (MM); *C. obscura*, 8 Aug.; *residua*, 5 July; *robinsoni*, 12 Sept.--all Tippecanoe Co. (MM); *E. hortaria*, 4 Aug., Brown Co. (ES); *P. robiniae*, 13 June, Brown Co. (ES).  
FOODPLANT RECORDS: *E. baptisiae*, reared on *Lupinus perennis* (!), Jasper, Pulaski Cos (MM); *C. a. pseudargiolus*, ovipositing on unopened flowers of Hog Peanut, *Amphicarpa*, LaGrange Co. (MM).

ILLINOIS: Six collectors responded, with Hess & Sedman submitting a detailed report of collections and observations for west-central counties--recording 87 butterfly species. The adverse winter did not have an impact on butterflies, as Hess said it was a "superb year"! He recorded a high daily total of 49 butterfly species (36 last year), with many days of 40 or more species! Sternburg found collecting excellent in Champaign, Mason, Piatt and Vermilion Counties, with all six *Papilio*, *P. protodice* and *B. bellona* up in numbers. Leeuw reported on butterflies from northeastern and Mason Counties, with observations from April to Sept. The following butterflies were reported up or numerous by most: *E. baptisiae*, *P. protodice*, *P. sennae eubule*, *C. henrici*, *C. gorgone carlota*, *B. bellona* and *S. speyeria*. Prescott reported *P. protodice* outnumbering *rapae* 50 to 1 in SW counties in July; while Hess found *P. zabulon*, *P. cresphontes*, *F. tarquinius* and *L. anhedon* down in numbers. Only Hess reported on some migrations of *D. plexippus*, and some *Nymphalids* in April and May.

CHOICE BUTTERFLIES: *A. aesculapius*, 26 July, Clinton Co. (JP); *A. vialis*, 27 April-5 Sept., Brown, CASS, Clinton, Effingham, HENDERSON, McDonough, SCOTT, St. Clair, Washington Cos (DH, JP, YS); *E. conspicua*, 9-15 July, CASS CO. (DH, YS); *E. dion*, 29 June-24 Sept., PIKE, WARREN COS (DH); *P. massasoit*, 19 June, Kane Co. (IL); *P. hobomok* f. *pocahontas*, 11 June, MCDONOUGH CO. (YS); *P. viator*, 10 July, Cook Co. (abundant-IL); *P. byssus*, 19 June-12 July, Henderson, McDonough Cos (DH, YS); *P. orignes*, 26 June, McDonough Co. (det. by J.R. Heitzman-DH, YS); *H. otto* ssp., 10 June-9 July, SCOTT CO. (DH, YS); *H. leonardus*, 31 Aug.-2 Oct., Mason, McDonough Cos (DH, IL, YS); *A. campestris*, 22 Sept.-29 Oct., Hancock, McDonough Cos (DH, YS); *H. phyleus*, 5-24 Sept., Cass, McDonough, Pike Cos (DH, YS); *T. lineola* f. *pallida*, 11 June, Kane Co. (IL); *E. baptisiae*, 9 May-24 Sept., CASS, Lake, McDonough Cos (DH, IL, YS); *E. horatius*, 10 June-13 Oct., CASS, EFFINGHAM, HENDERSON, McDonough (DH, JP, YS); *S. hayhurstii*, 26 May-9 June, 9 July-6 Sept., CASS, HENDERSON, Mason, McDonough Cos (DH, IL, YS); *A. lyciades*, 26 July, CLINTON CO. (JP); *B. philenor*, 1 May-18 Sept., CASS, McDonough, Pike, SCOTT Cos (DH, YS); *P. protodice*, 27 April-14 Nov., Cass, Champaign, CLINTON, EFFINGHAM, Greene, Hancock, Mason, McDonough, Piatt, Pike, St. Clair, Washington Cos. (DH, LF, JP, JS, YS); *C. cesonia* (incl. f. *rosa*), 29 June-25 Sept., CASS, Lake, McDonough, PIKE, Vermilion, WARREN Cos (DH, IL, JS, YS); *P. sennae eubule*, 18 Aug.-25 Sept., 18 Aug.-25 Sept., Cass, Pike Cos (DH, Oemke, YS); *E. nicippe*, 10 June-24 Sept., CASS, Clinton, HANCOCK, PIKE, SCOTT Cos (DH, Oemke, JP, YS); *A. midea*, 15 April, PIKE CO. (DH); *E. olympia*, 15-23 April, Lake, Mason Cos (IL, JS); *N. io* f. *6* Sept., Mason Co. (IL); *C. muticum*, 2-4 July, Kane Co. (IL); *P. m-album*, 27-30 April, PIATT CO. (JS); 27 July, EFFINGHAM CO. (JP); *C. gryneus*, 7, 8 May, HENDERSON, McDonough Cos (DH, YS); *C. henrici* ssp., 9-30 April, Cass, MCDONOUGH, PIATT, PIKE, SCOTT, Vermilion Cos (DH, JS, YS); *S. edwardsii*, 6-28 June, Mason, McDonough Cos (DH, JS, YS); *S. liparops strigosa*, 14 June-15 July, McDonough, Piatt Cos (DH, JS); *S. acadica*, 4-20 June, CHAMPAIGN, Kane Cos (IL, JS); *L. x. dione*, 10-29 June, Cass, Henderson, McDonough, Pike Cos (DH, YS); *L. helioides*, 26 June, FULTON CO. (M. Wilson); *L. bachmanii*, 24 June-24 Sept., CASS, CLINTON, EFFINGHAM, HANCOCK, HENDERSON, McDonough, St. Clair, Washington Cos. (DH, JP, YS); *A. andria*, 24 Sept., Pike Co. (DH, Oemke); *L. a. astyanax*, 25 June, McDonough Co. (white band on FW, DH); *N. milberti*, 27 May, McDonough Co. (YS); *P. progne*, 21 May-8 Nov., CASS, McDonough, Piatt, SCHUYLER Cos (DH, JS, YS); *C. gorgone carlota*, 5 May-29 Sept., Brown, Cass, Hancock, Henderson, Mason, Pike, Warren Cos (DH, JS, YS); *B. bellona*, 15 April-18 Sept., Cass, Champaign, GREENE, McDonough, Piatt Cos (LF, DH, JS, YS); *S. idalia*, 10 June-19 July, Cass, Kankakee, Mason, MCDONOUGH Cos (DH, JS, YS); *D. gilippus*, 7 May, Henderson Co (2nd STATE record-sighting, DH, YS); *C. pegala* nr. *olympus*, 18 Aug.-2 Sept., Brown, CASS, MCDONOUGH COS (DH, YS).

CHOICE MOTHS: *A. cingulata*, 30 Oct. McDonough Co. (YS); *U. bella*, 13 Aug.-24 Sept., Cass, McDonough Cos (DH, YS); *L. pholus*, 25 June, McDonough Co. (YS); *C. judith*, *epione*, *nuptialis*, *titania*, 20 June-15 July, McDonough Co. (YS); *P. robiniae*, 5 Aug., McDonough Co. (YS).

FOODPLANT RECORDS: *P. byssus*, 12 July, oviposition on *Andropogon furcatus*, McDonough Co. (DH); *P. p. asterias*, oviposition on wild parsnip, *Pastinaca sativa*, McDonough Co. (YS); *P. protodice*, oviposition on *Lepidium virginicum*, Cass Co. (DH); *E. lisa*, oviposition on *Cassia fasciculata*, Cass Co. (DH); *E. phaeton*, larvae on *Chelone glabra*, 8 May, Kane Co. (IL).  
STATE RECORD: *Thysania zenobia*, 24 July, Champaign Co. (one at UV, flight worn-JS).

IOWA: No reports!

MINNESOTA: Four filed reports for the state, with Huber also reporting for other collectors. The season was too hot and dry too early, throwing most collectors "off schedule"! Many new distributional data were gathered by Dana, who conducted a summer-long survey on nine prospective nature conservancy areas. It was a good year for southern migrants, especially *C. cesonia*, *S. melinus*, *H. isola*, *L. bachmanii*. Dana found *N. v-a. j-album* the most common he ever experienced south of

the Canadian Zone, and saw a pronounced northern movement of *V. atalanta*, with heavy larval infestations.

**CHOICE BUTTERFLIES:** *A. samoset*, BENTON CO. (RD); *E. conspicua*, STEARNS CO. (RD); *E. dion*, BENTON, MORRISON COS (RD); *P. viator*, STEARNS CO. (RD); *P. massasoit*, BENTON, MORRISON COS (RD); *A. arogos*, JACKSON CO. (D. Day); *H. comma assiniboia*, POLK CO. (det by Huber-P. Hanson); *H. pawnee-leonardus* (blend) 22-24 Aug., Sherburne Co. (abundant, fresh-IL); *C. palaemon mesapano*, BENTON CO. (RD); *E. lucilius*, Morrison Co. (RD); *P. protodice*, 22-24 Aug., Sherburne Co. (abundant-IL); *P. napi oleracea*, MORRISON CO. (RD); *C. cesonia*, Benton, Morrison Cos (RD), 22-24 Aug., Sherburne Co. (IL); *E. olympia*, BENTON, MORRISON COS (RD); *L. helloides*, MORRISON CO. (RD); *L. epixanthe* ssp., ANOKA CO. (RD); *H. isola*, BENTON, MORRISON, Wabasha Cos (R. Barlett, RD, D. Arenholz); 22-24 Aug., SHERBURNE CO. (IL); *P. m. melissa*, MORRISON CO. (in alfalfa field within 2nd growth hardwoods-RD), Norman, Stearns Cos (RD, RH); *L. bachmanii*, STEARNS CO. (RD); *A. celtis*, Morrison Co. (RD); *N. v-a j-album*, Morrison, Stearns Cos (RD); *C. gorgone carlota*, BENTON, ISANTI, Morrison Co. (RD); *C. harrisii*, BENTON, STEARNS COS (RD); *E. phaeton*, BENTON, STEARNS COS (RD); *L. appalachia leeuwi*, MORRISON, STEARNS COS (RD).

**CHOICE MOTHS:** *A. nessus*, BENTON CO. (RD); *H. columbia*, 20 May (1 ♀), Beltrami Co. (8 mi. W. of Bemidji-SM); *A. virginensis*, MORRISON CO. (RD); *Dasypodaea lucens*, STEARNS CO. (prairie-RD); *C. abbreviatella*, 25 J-ne, Jackson Co. (prairie-RD); *C. whitneyi*, 5 July, Stearns Co. (prairie-RD).

**WISCONSIN:** Reports from eight collectors gave the state very good coverage. Balogh and Ferge sent their usual detailed reports, collecting-observing 90 and 84 butterfly species, respectively. In addition, they reported 17 and 13 species of Spingidae; Ferge found Saturniidae up and Catocala numbers remained below average, but still recorded 22 species!

Ferge found collecting productive in May and June, and reported the earliest season ever, with most spring-emerging species appearing over two weeks earlier than usual. Karpeleon and the Duesterbeck's also found the season about 2 weeks early in west-central counties. Sieker, collecting at UV in Door County, had excellent results, especially with the Spingids which were up, notably *S. cerisyi*! He found the butterflies down, except the *Speyeria*. Rahn, in Marathon County, found the season "one of the worst in years"! It appeared that *N. v-a j-album* was up in most northern areas. Holbach collected some interesting moths, especially Catocala, at MV and bait on his farm in Sheboygan County.

**CHOICE BUTTERFLIES:** *A. samoset*, 19 May, Eau Claire Co. (WD); *E. conspicua*, 4-18 July, DUNN, EAU CLAIRE COS (FK); *E. dion*, 25 June-10 July, FOND DU LAC, IOWA, KENOSHA, Waukesha Cos. (GB); *P. massasoit*, 25 June-2 July, KENOSHA, Marathon, Walworth, Waukesha Cos (GB); *H. ottoe* ssp., 9-10 July, Grant, SAUK COS (LF, GB); *H. comma laurentina*, 12-19 Aug., Forest, Oneida, Vilas Cos (GB, LF); *H. sassacus*, 28 May-10 June, Marathon Co. (RR); *H. leonardus* ssp., 3-10 Sept., GREEN, SAUK COS (GB, LF); *P. communis*, 28 July-19 Aug., Crawford, Grant Cos (LF); *E. persius*, 25 May, Burnette Co. (GB); *E. lucilius*, 7 May-25 Sept., Grant, SAUK, TREMPALEAU, Waukesha Cos, and *E. martialis*, 25 May, Burnette Co. (GB); *P. glaucus canadensis*, 7 May (early record), Marathon Co. (LF); *P. protodice*, 24 June-18 Sept., SAUK, WAUKESHA COS (GB, LF, JP); *P. virginensis*, 26 April (early)-14 May, LANGLADE, Marathon Cos (LF, JP); *C. interior*, JACKSON CO. (LF); *C. cesonia*, 28-29 July, Crawford, Grant, Trempealeau Cos (LF); *E. lisa*, 26 June-4 Sept., EAU CLAIRE, FLORENCE, FOND DU LAC, Marathon Cos (GB, FK, RR); *E. mexicana*, 24 June, SAUK CO. (JP); *E. olympia*, 14-30 May, Eau Claire, Vilas Cos (GB, WD); *C. muticum*, 6 Aug., Fond du Lac Co. (GB); *C. gryneus*, 9-28 July, Grant, Trempealeau Cos (GB, LF); *C. henrici*, 14 May, CHIPPEWA CO. (FK); *C. nippon clarki*, 2 May (early)-23 May, Eau Claire, JACKSON, Oneida Co. (GB, WD, LF); *S. melinus*, 30 May-28 July, Grant, Vilas Cos (GB, LF); *S. liparops strigosa*, 2-27 July, GRANT, MANITOWAC, Marathon Cos (GB, LF); *S. liparops strigosa*, 2-27 July, GRANT, MANITOWAC, Marathon Cos (GB, LF); *L. x. dione*, 6-24 June, Eau Claire, Grant Cos (WD, FK, JP); *L. helloides*, 15 Aug.-25 Sept., VILAS CO. (GB); *L. dorcas*, 2-17 July, LANGLADE, Marathon, Vilas Cos (GB); *H. isola*, 9 July-21 Aug., Eau Claire, Grant, TREMPALEAU COS (GB, WD, LF); *L. argyrognomon nabokovi*, 4 July, Florence Co. (Foodplant still unknown here-GB); *L. melissa samuelis*, 21 May-4 June, 20-23 July, Adams, Burnette, Clark, Eau Claire, Jackson, Juneau, Wood Cos (some blend with nominate form-GB, WD, LF, FK); *F. tarquinius*, 4 May-13 Aug., Chippewa, Eau Claire, Oneida, Vilas Cos (WD, LF, FK); *N. milberti*, 41 July Sheboygan Co. (one at MV-GH); *P. batesii*, 30 May-4 June, Florence, LANGLADE, IRON, Marinette, VILAS COS (GB, LF); *C. gorgone carlota*, 23 May-24 June, Eau Claire, JACKSON COS (GB, WD, JP); *B. frigga* ssp., 14-28 May (early), Langlade, Vilas Cos. (GB, LF, JP); *B. freija* ssp., 14-26 May, BAYFIELD, Oneida Cos (GB, LF); *B. eunomia dawsoni*, 23 May-4 June, chippewa, IRON, Lincoln, LANGLADE, ONEIDA, Price Cos (early dates-GB, LF); *S. idalia*, 24 June-5 Sept., GREEN, Sauk Cos (GB, JP); *E. claudia*, 7 June-10 Sept., CRAWFORD, Eau Claire, Green, SAUK COS (GB, WD, LF); *L. appalachia leeuwi*, 2-8 Aug., Fond du Lac, MANITOWAC, Marathon Cos (GB, LF); *E. discoidalis*, 14 May, LANGLADE, Oneida Cos (LF, JP); *O. chryxus strigulosa*, 14 May, LANGLADE CO. (LF, JP); *O. jutta ascerta*, 14-30 May, Chippewa, FLORENCE, JACKSON (southernmost area to date), Iron, Langlade, Marathon, Price, Oneida, Vilas, WOOD COS (GB, LF, JP).

**CHOICE MOTHS:** *S. poecila*, 17-26 May, Douglas, Oneida Cos (GB, LF) and Door Co. (WS); *S. canadensis*, 3 July, Marathon Co. (LF) and Door Co. (WS); *S. eremitus*, 14-19 July, Sheboygan Co. (GH); *H. gracilis*, 25 May, Douglas Co. (GB); *H. columbia*, 17-29 May, ONEIDA CO. (♂ attracted to cecropia ♀♀-LF); *A. virginensis*, 24 May, Oneida Co. (LF); *H. lamae*, 26 June-3 July, Marathon Co. (GB, LF); *S. prima*, 12-18 May, Oneida Co. (LF); *H. monochromata*, 22 May, Wood Co. (LF); *L. disposita*, 4 Oct., Oneida Co. (LF); *L. pexata*, 6 Nov., Oneida Co. (LF); *S. microgamma*, 24 May-4 June, Bayfield, Iron, Oneida, Price Cos (GB, LF); *C. subnata*, neogama, 9 July, Iowa Co. (LF); *C. sordida*, 12 Aug., Oneida Co. (LF); *C. coccinata*, Marathon, Sheboygan Cos (GH, JP); *C. briseis*, 9 July-11 Aug., Manitowac, Marathon Cos (GB, LF, JP); *C. epione*, Judith, 9-19 July, Grant, Iowa, Manitowac Cos (GB, LF); *N. stragula*, 25 May, Oneida Co. (LF); *S. argenteomaculatus*, 16, 17 June, Manitowac, Sheboygan Cos (GB, GH); *P. macmurtrei*, 24 May, Douglas Co. (GB).

STATE RECORD: *C. irus*, 21 May, Adams Co. (1 ♀, det. by P. Conway; collected with *P. melissa samuelis*, in lupine-GB).

**MICHIGAN:** One of the coldest winters, with record cold temperatures and snowfall throughout most of the state. The spring weather came very early and consequently forced many spring species much earlier than collectors had planned. Eight collectors filed various reports covering most of the state, and recorded a total of 100 butterfly species; Miller and Nielsen found good Catocala collecting, recording 35 and 37 species, respectively. The following butterflies were up in most areas: *B. philenor*, *G. marcellus*, *L. helloides*, *N. antiopa* and *v-a j-album*, *B. bellona*, and most *Speyeria*. Three collectors reported that *H. ottoe* was locally common in the Allegan State Game Area. Oosting found spring Lycaenids down in numbers, as well as some *Satyrium*, especially in western counties. *P. protodice* was reported in two southern counties, apparently making a comeback, and *L. anhedon* and *A. delaware* expressed a second brood in September. Dow, Grocoff and Weintraub reported on local collections and observations in SE Michigan.

**CHOICE BUTTERFLIES:** *H. hianna*, 30 May, Newaygo Co. (DO); *E. bimacula*, 25, 26 June, Cheboygan, Otsego Cos (MN); *E. dukesi*, 9-23 July, Lenawee Co. (MN); *P. viator*, 2 July, Barry Co (WM); *A. delaware*, 1-3 Sept., Lenawee, St. Joseph Cos (2nd brood-WM, MN); *P. origines*, 9 June-2 July, Montcalm, Newaygo, Oakland Cos (MN, JW); *H. metea*, 26 April, (early)-14 May, Allegan, Newaygo Cos (IL, MN, DO); *H. comma laurentina*, 17-27 July, Keweenaw, Mackinac Cos (IL, MN); *H. ottoe* ssp., 18 June-10 July, Allegan Co. (IL, WM, DO); *H. leonardus*, 14 Aug.-11 Sept., Newaygo, Otsego, Van Buren Cos (WM, MN); *P. communis*, 11 Sept., Van Buren Co. (WM); *A. lycades*, 30 May, Ingham Co. (MN); *E. persius*, 14 May, Montcalm, Newaygo Cos (MN); *B. philenor*, 15 July-12 Aug., Barry, Lenawee, Keweenaw (2nd specimen ♀) from this extreme N location-Perona), St. Joseph Cos (Elsner, MG, MN); *G. marcellus*, 14 Aug., Monroe, Van Buren Cos (MG); *P. protodice*, 10 Aug.-7 Sept., St. Joseph, Van Buren Cos (MG, WM); *P. napi oleracea*, 17 April, Van Buren Co. (DO); *P. virginensis*, 1 May, OCEANA CO. (SW-most location in state-DO); *E. mexicana*, 7 June, Livingston Co. (2nd record for state-MG); *E. lisa*, July 17-3 Sept., Lenawee, Mackinac Cos (IL, MN); *E. olympia*, 6-14 May, Allegan, Montcalm, Newaygo Cos (IL, MN); *C. irus*, 26 April-14 May, Allegan, Kent, Montcalm, Newaygo, Oceana Cos (IL, MN, DO); *C. henrici*, 22-30 May, Chippewa, Schoolcraft Cos (TC, M. Douglas); *C. polios*, 22-30 May, Chippewa, Schoolcraft Cos. (TC, MN); *C. nippon clarki*, 26 April-30 May, Allegan, Chippewa, Newaygo, Schoolcraft Cos (TC, IL, WM, MN); *S. c. falacer*, 4 June (early)-2 July, Lenawee, Montcalm, Oakland Cos (MN, JW); *S. caryaevorus*, 19 June, Lenawee Co. (DO); *L. helloides*, 2 July-13 Aug., Montcalm Co. abundant! (MN, DO); *L. dorcas*, 3-21 July, Jackson, Mackinac Cos (IL, JW); *L. melissa samuelis*, 29 June, Allegan (abundant-IL); *G. lygdamus couperi*, 6-14 May, Allegan, Jackson, Montcalm, Newaygo Cos (IL, MN, JW); *L. bachmanii*, 14 Aug., Monroe Co. (MG); *L. arthemis astyanax* (hybrids), 20 June-Aug., Washtenaw Co. (traces of white band on VFW-JW); *N. v-a j-album*, 16 March, Oakland Co. (JW); *P. satyrus neomarsyas*, 12-30 July, Houghton, Keweenaw Cos (Perona); *P. batesii*, 26 June, Cheboygan Co. (JW); *B. selene atrocotalis*, 20-30 May, Chippewa, Iron Cos (TC, MN); *B. frigga* ssp., 20 May-17 June, Iron, Keweenaw Cos (MN, Perona); *B. freija* ssp., 20 May, Iron Co. (M. Douglas); *B. eunomia dawsoni*, 30 May-19 June, Chippewa, Houghton, Mackinac Cos (TC, MN, DO, Perona); *S. idalia*, 7 July, St. Joseph Co. (JW); *S. cybete krautwurmii*, 4-29, Alger, Mackinac, Keweenaw Cos

(IL, MN, DO); *E. claudia*, 14 July, Houghton Co. (Perona); *L. anthedon*, 1-3 Sept., Kalamazoo, Lenawee Cos (2nd brood-WM, MN); *L. appalachia* Teeuwii, 3-23 July, Jackson, Lenawee Cos (MN, JW); *E. mitchellii*, 3 July (most worn), Jackson Co. (JW); *C. inornata*, 10-26 June, Cheboygan, Mackinac Cos (MN, DO, JW); *O. chryxus strigulosa*, 20 May, Iron Co. (MN); *O. jutta ascerta*, 20 May (early)-10 June, Baraga, Chippewa, Iron, Mackinac, Schoolcraft Cos (TC, MN, DO).

**CHOICE MOTHS:** *M. sexta*, Livingston Co. (common-MG); *S. poecila*, 29 May-11 June, Chippewa, Otsego Cos (TC, MN); *S. gordius*, 4 July, Kalamazoo Co. (WM); *S. drupiferarum*, 20 May, Iron Co. (MN); *L. bombycoides*, 19 May-8 July, Cheboygan, Chippewa, Kalamazoo, Otsego Cos (TC, WM, MN, JW); *D. versicolor*, 20 July, Kalamazoo Co. (WM); *A. titan*, 10 July, Keweenaw Co. (in alfalfa field-Perona); *S. abbottii*, 22, 23 May, Ingham Co. (in bait traps-MN); *H. lineata*, 15 Sept. (late) Van Buren Co. (WM); *C. angulifera*, 17 July (1 ♂), Kalamazoo Co. (WM), Cass Co. (Elsner); *E. imperialis pini*, 30 July (1 ♂), Otsego Co. (MN); *Pygarcia spraguei*, 17 June, Barry Co. (MN); *U. bella*, 11 Sept., VAN BUREN CO. (WM); *A. quadrata*, 11 June, Otsego Co. (MN); *Polia tacoma*, 11 June, Otsego Co., *P. rugosa*, 20 May, IRON CO. (MN); *P. electilis*, *E. grandis*, *depilis*, 11 March-19 April, Clinton Co. (MN); *L. pexata*, *thaxteri*, 21 May, Schoolcraft Co. (MN); *P. arctivorens*, 20-26 Aug., Clinton Co. (at bait!, MN); *S. viridisigma*, *octoscripta*, *alias*, *bimaculata*, *rectangulata*, 28 July, Keweenaw Co. (at firewood flowers, det. by T. Eichlin-MN); *C. coelebs*, *semirelicta* f. *atala* (1), 30 July-12 Aug., Otsego Co. (MN); *C. piatrix*, 24 Aug., Kalamazoo Co. (WM); *C. palaeogama* f. *denussa*, 15-20 July, Clinton, Kalamazoo Cos (WM, MN); *C. vidua*, 21 Oct. (late date), Clinton Co. (MN); *C. subnata*, 6 July (early date)-26 Aug., CLINTON, Kalamazoo, Lenawee Cos (WM, MN); *C. nebulosa*, 15 July-6 Aug., Kalamazoo, Lenawee Cos (WM, MN); *C. cerogama* f. *ruperti*, 23 July-19 Aug., HOUGHTON, Lenawee Cos (MN, Perona), and f. *bunkerii*, 28 July, KEWEENAW CO. (MN); *D. thyatiroides*, 11 June, Otsego Co. (MN); *Adela bella*, 17 April, Otsego Co. (at willow catkins-MN).

**FOODPLANT RECORDS:** *B. philenor*, larvae on *Aristolochia serpentaria*, Lenawee, St. Joseph Cos (N); *P. glaucus*, larvae on *Prunus virginiana* and *Ptelea trifoliata*, Lenawee Co. (all within same wooded area!-MN); *S. liparops strigosa*, ex-larvae beaten from *Vaccinium* sp., Barry Co. (in bog-WM); *P. appassinata*, ex-larvae boring into *Sarracenia purpurea*, Cheboygan Co. (MN); *C. piatrix*, ex-larvae on *Juglans nigra*, Kalamazoo Co. (WM); *C. serena*, several ♀♀ ovipositing on large *Carya ovata*, Clinton Co. (MN); *C. illecta*, ex-larva beaten from *Gleditsia triacanthos*, KALAMAZOO CO. (2nd Co. record-WM); *C. minuta*, ex-larvae beaten from *G. triacanthos*, Kalamazoo Co. (WM).

**ZONE 9: THE NORTHERN NEOTROPICS.** Coordinator: Eduardo Cecilio Welling M. Contributors: Michael A. Rickard, Frank R. Hedges, David Pender, Edward C. Knudson, Gregory S. Forbes, George T. Austin, William H. Howe, James Jacques.

Notes about weather patterns during 1977, as far as known: this year was a practical repeat of 1976, reflecting widespread drought, miserable insect collecting in southeastern Mexico, and loss of crops. For the 6th year in a row, the normally drier northwest part of the state of Yucatán received more rain than anywhere else in the whole peninsula. This time the excessive rains in western Yucatán, and the very very meager ones in eastern Yucatán, Quintana Roo, Belize and El Petén fell well inside their normal months, except for abnormal heavy rains in half of January and most of February in western Yucatán which was a prolongation of oddball weather patterns inherited from late 1976. In Belize and Guatemala, crop losses were widespread for lack of rain.

**BELIZE:** Welling spent August in the Stann Creek Valley, and found an almost butterflyless environment. Moths at black-light were scarce on moonless nights probably due to drought conditions, but at Middlesex a few interesting Sphingids were found including *Xylophanes thyleia*, *X. chiron*, *Protambulyx euryalis* or *xanthus*, *Cocytius duponchel*, etc. *Callioma inuus* was common, something never seen before. Passing through in late November, still no butterflies were seen. *Phyxus caicus* was caught on flowers of *Vinca rosea* at New Hope, Belize District, in August.

**GUATEMALA:** Welling crossed this country in November and December, found collecting miserable and decided not to waste any time. Even in choice collecting spots, scarcely anything was seen. Rivers and creeks in the eastern lowlands were very low, and roads quite dry during these months when it is normally very rainy. Wildflowers along the road in El Petén, which normally attract many insects, were almost nonexistent.

**MÉXICO: BAJA CALIFORNIA SUR:** Forbes collected around Loreto from 29 Nov. to 3 Dec. finding *Apodemia mormo maxima*, *A. heburni*, *A. palmeri*, *Calophelis wrighti*, *Anthanassa texana*, *Precis nigrosuffusa* (state record?), *Myscelia skinneri*, common Pierids and Hesperidae, *Hypostrymon critola*, *Strymon bazochii*, *S. columella*, *Chlorostymon simaethis* (very abundant), a *Hemileuca* sp., possibly *tricolor*, and *Callioma parce*. Austin collected from 7-15 January in southern part of the state, finding conditions dry, especially inland from the coasts. In thorn forests near El Triunfo, 7 species of butterflies were found. Punta Conejo, 32 kms southwest of El Cien produced 32 species, while 12 kms east of Cabo San Lucas a locality produced 26 species. Another area 42 kms north of Sabo San Lucas produced only 14 species, nothing being found anywhere that was not already listed by Holland (1972, J. Res. Lepidoptera 11:147-60). Some of the commonest were *Chiomara asychis*, *Urbanus dorantes*, *Ascia monuste*, *Zerene cesonia*, *Eurema daira*, *E. mexicana*, *Danaus gilippus*, *Battus philenor*, *Leptotes cassius*, *Hemiargus ceraunus*, *Phyciodes texana*, *Euptoieta hegesia*, *Chlorostymon simaethis*, and *Hypostrymon critola*. Austin also collected with blacklight at night, best results being found 15 km southeast of El Triunfo. In total 144 species of moths were taken.

**TAMAULIPAS:** Knudson and Rickard found *Aquna claxon*, *Leptophobia eleucis*, *Chlorostymon telea*, *Strymon alea*, *Urbanus simplicius*, and *Polyctor enops* near Cd. Victoria and Galeana Canyon near Llera, in November.

**SAN LUIS POTOSÍ:** In November, Knudson (K), Rickard (R), Hedges (H) and Pender (P) worked around El Salto, once again finding good things including *Adelpha pithys*! (K), *A. celerio* (taken by all), *Siderone marthesia* (P), *Anaea ryphea* (all), *A. electra* (K), *Catasticta flisa* (all), *C. nimbice* (all), *Vareuptychia themis* (all), *Cepheuptychia glaucina* (all), *Eryphanis aesacus* (P), *Hymenitis anetta* (all), *Argyrogramma sulphurea* (H), *Leucochimona ohilemon* (K, R), *Lasaia agasilas* (P, R), *Thecla regalis* (K), *T. theocritus* (all), *T. barajo* (all), *T. bitias* (K), *T. battus* (all), *T. phrurus* (H), *T. gabina* (H), *Cyanophrys pseudolongula* (H, K), *C. agricolor* (R), *C. janias* (H), *Myseclus amystis* (K, R, H), *Quadrus cerealis* (K), *Bolla cupreiceps* (R), *Cycloglypha thrasylbulus* (R), *Parphorus storax* (H), *Corticea epiberus* (K), *Carystus phorcus* (H), *Tromba xanthura* (R), *Synale cynaxa* (R), *Tirynthia conflua* (R). The above are some of the more interesting records, as 320 species were taken in three days only, with good weather prevailing. Howe and Jacques spent 5 months around Tamazunchale, from January to June. The season began in March with *Graphium philoalus*, which continued into May along with *Eurema dina*, *E. mexicana* and *Phoebis sennae* swarming along stream banks. By June, sandy banks along the Río Axtla afforded the two collectors hundreds of Papilionidae, including *Graphium epidaus*, *Papilio anchisiades*, *P. androgeus*, *P. thoas*, *Battus philenor* and *B. polydamas*. *Marpesia coesia* assembled along the mudflats. In a tangerine orchard, a single *Papilio victorinus* was found. At El Laurel, *Achylodes busirus*, *Thecla battus*, *T. cypria*, *T. regalis*, *T. damo*, and *T. barajo* were found. Near Xilitla, more *Caligo uranus* and *Eryphanis aesacus* were taken. Near the headwaters of the Río Axtla, they found *Diorina arcus*, *Castnia inca*, *Chlorippe cherubina*, *CalliCore anna*, *Adelpha melanthé*, *Prepona demophon*, *Colobura dirce*, *Heliconius hortense*, *H. petiveranus*, *Tithorea tarricina*, in May. Moths found at lights in Tamazunchale included *Copaxa multifenestrata*, *C. purpurescens*, *Rothschildia lebeu*, *R. orizaba*, *Automeris zozine*, *A. metzli*, *Actias luna*, *Dysdaemonia boreas*, and the butterfly *Opsiphanes tamarindi*; *Eacles imperialis*, *Ophideres serpentinus*, *Pholus labruscae*, *P. lichenon*, *Protambulyx strigilis*, *Amblypterus gannascus*, *Xylophanes tersa*, *X. chiron*, *X. pluto*, *Callioma parce*, *Herse cingulata*, *Phlegethontius florestan*, *P. occulta*.

**HIDALGO:** Howe found a perfect pair of *Papilio abderus* near Puerto del Caballo on May 4th.

**OAXACA:** *Papilio garamas* was found by Jacques and Howe, in May?

**MORELOS:** *Morpho polyphemus* was taken near Cuernavaca, in May?

**YUCATÁN:** Collecting was extremely poor, not worth the time to go out and waste time. Not even the normal May flights of

# A Monograph of the Birdwing Butterflies

The Systematics of *Ornithoptera*, *Troides* and Related Genera  
(Lepidoptera: Papilionidae)



**J. Haugum & A. M. Low**

*Photographic plates by*

**David Wilson**

In two volumes, issued in six parts. About 600 pages  
Numerous text-figures, 32 colour plates

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## *Ornithoptera* (*Aetheoptera*) *alexandrae* Rothschild 1907

Text-figs 11, 14c, 16, 17, 18, 21, 48, 52-60; plate 4.

'It is indeed a new species, standing intermediate between *Troides victoriae* and *T. tithonus*, thus bridging the gulf that separated *T. victoriae* from *T. tithonus*, *priamus*, *goliath* and *chimaera*.'

W. Rothschild 1907.

'Mr. O. E. Janson exhibited specimens of *Ornithoptera alexandrae* selected from a series to show the extreme variations in the wing-markings.'

From the Proceedings of the Entomological Society of London, 1915.

'De kleur en teekening bij het ♂ wijken geheel af van al het vroeger bekende en geven aan dezen prachtige vlinder een zeer eigenaardig karakter.'

A. Moos 1909.

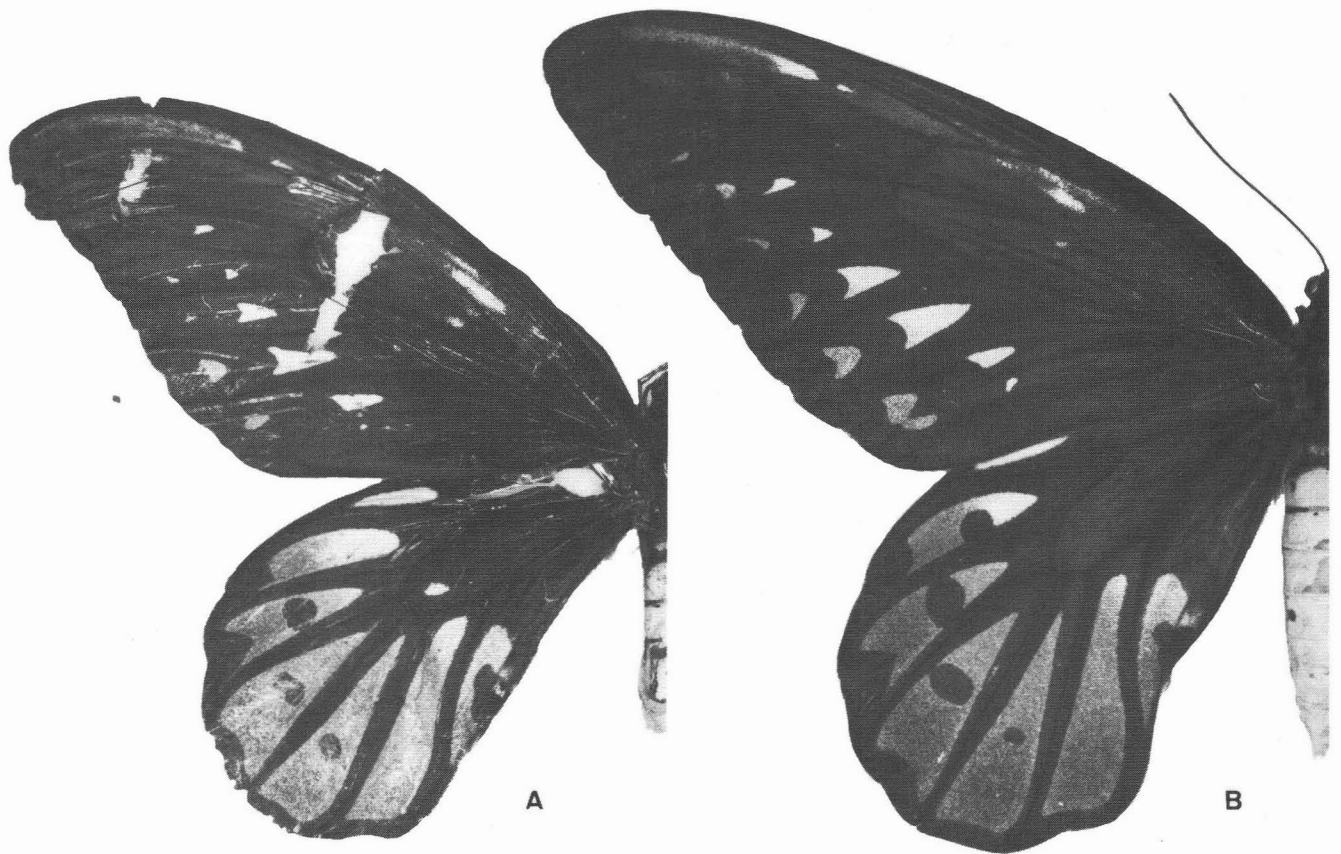
Blandin, P., 1973: Etudes sur le genre *Ornithoptera*: Remarques préliminaires sur les relations phylogénétiques entre *O. alexandrae*, *O. victoriae* et *O. priamus*. *Alexandria* 8 (1973): 63-64.

*Continued*

Type loc.: Kumusi River (Biagi), 1,600 m., S. E. New Guinea.

This magnificent butterfly, the female of which is the largest known rhopaloceran, was discovered by the naturalist A. S. Meek in January 1906. The original description by Lord W. Rothschild appeared in the *Novitates Zoologicae* in 1907. Meek had been commissioned by the Hon. Lord Rothschild, and was collecting for the Tring Museum from the early eighteen-nineties. On this occasion he was travelling from the north-eastern coast of (British) New Guinea, inland to the head-waters of the Mambare River. He had barely established his camp at Biagi, close to the head of the river, when he discovered the first female *O. alexandrae*. He observed the male flying high in the air, but could not get it. He noticed, however, that the male had conspicuously elongate wings whilst it was in flight.

*Continued*

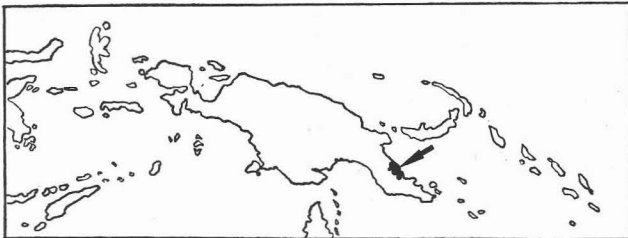


Text-fig. 54. *O. (A.) alexandrae*. A, female holotype, N. E. coast (inland) B. N. G. (Meek leg.); B, female topotype, N. E. Brit. N. G., Kumasi River (Meek leg.), coll. Haugum/Low.



**(A.) alexandrae, which runs to eight full pages in the monograph**

The geographic **distribution** is limited to a relatively small area in the extreme South-east of Papua New Guinea (Text-fig. 55). Earlier authors refer to *alexandrae* from Northern New Guinea, but this is erroneous, as the location Kumuzi (or Kumusi) River is also cited. The Kumuzi river is situated at 8,35' S., and 148 E., runs rather parallel to the Mambare River, and reaches the ocean in the Solomon Sea, just a little north of Popondetta and the 'Dyke Ackland Bay'; that is, in the North Eastern part of the Territory of Papua but in the South-eastern part of the Island of New Guinea.

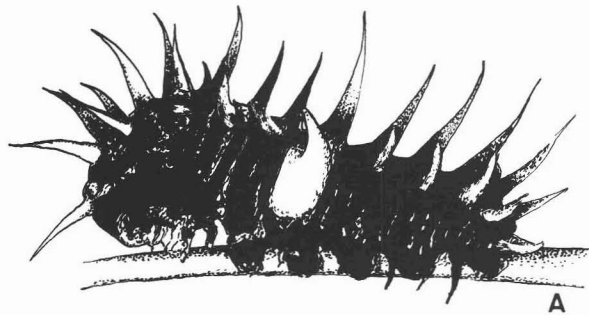


Text-fig. 55. Distribution of *O. (A.) alexandrae*.

*Alexandrae* inhabits the lowland forests on the north side of the Owen Stanley Range, and within its limited range there are many areas ..... *continued*

The *alexandrae* Birdwing has a rapid and strong flight and is very difficult to capture because it keeps to the tops of the trees; 'with an alternating flapping and soaring movement.' The first specimens seen in Europe were all somewhat damaged, as they had been shot down with a small bore shotgun! On his subsequent trips to the area, however, Meek found several females feeding on flowers and thus managed to procure almost immaculate specimens. The existence of two Kumuzi River topotypes (A. S. Meek leg.; season V-IX., 1907/N. E. Brit. New Guinea; Kumasi River/A. S. Meek) appear to be previously unrecorded. There is one such specimen in the reference collection of the authors (Text-fig. 54B), and another in the collection of the Birmingham Museum, ex coll. Kenrick. (M. Parsons, pers. comm.).

In the primary forest, the larval foodplant reaches to the top of tall trees, sometimes above 40 metres from the ground. Here oviposition ..... *continued*  
The **genitalia** of males of *alexandrae* (Text-fig. 58) are quite distinct and are easily separable from those of *victoriae*. The claspers are large and rounded, and not prominently elongate. There are two ..... *continued*



Text-fig. 60. A, 3rd instar larva and B, pupa of *alexandrae* (after Straatman 1971).

The ovum is generally laid singly on the underside of an old leaf of the larval foodplant, *Aristolochia schlechteri* Lauterbach, 1905, a vine having thick leaves and tough cork-covered stems. .... *continued*

There appears to be another (*Aristolochia*) foodplant, locally, in the highest areas of its distribution. In a mountain range near Popondetta *alexandrae* females have been observed to oviposit on a plant similar to *A. schlechteri* but of enormous size, with unusually long leaves (up to 1 m. in length) and about 30 cm. long, green, fruits. This species is apparently unnamed.

**The pupa** (Text-figs 52B, 60) is light brown to reddish grey, with the wing-cases yellowish to yellowish-brown and a broad, light-brown, streak along lower margin. The abdominal segments are brown ventrally and yellow dorsally, the dorsal saddle-mark a bright yellow, covering the segments from the metathorax to segment four. The thorax is dark brown. The pupa ..... *continued*

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The work is primarily intended for specialists and students, nevertheless, it will, without doubt, have a great appeal to the general collector and will prove an invaluable addition to the library.

Part 1 is scheduled for publication in May, 1978. C. 96 pp., 60 text-figs., 4 plates, paper bound. Formate of the monograph will be 21 × 28 cm (as this brochure). Paper as used for this brochure. The composition of text and text-figures will appear from pp. 2-3, but note that the text cited is only fragmentary. The whole treatment of *O. alexandrae* comprises 8 pages of text and brings 16 text-figures apart from the colour plate.

Price of part 1 US \$ 14.- or D.kr. 85.- postage extra. Prices for subsequent parts will vary between 14 and 18 \$ depending on size. Enter your standing order now! Use the order form below.

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Phoebis and Anteos materialized to any extent. In Mérida, Welling saw a few oddities in his own back yard, things not usually found in the state, Gynaecia (Colobura) dirce as an example. Black lighting was done near Valladolid, with a few species making up the bulk of the catch. Phlegethontius florestan made a showing, along with Pholus vitis, and a few Automeris metzli.

**QUINTANA ROO:** This state was a little island in a sea of drought and an almost butterflyless season, at least in the northern part of the state. Probably more butterflies flew in 1977 here than in the last 5 years put together, yet nobody was around to collect them. In one single looking, 15 to 20 Parides iphidamas could be seen sipping forest flowers, accompanied by as many Heliconius petiveranus, in the early morning. One man relates of seeing 400 Caligo memnon along a 20 km stretch of forest trail, probably true because Welling noticed many flying in all directions along another 35 km stretch. Graphium protesilaus swarmed in huge numbers probably representing the heaviest flights in 10 years, in July. Because of drought conditions and mass destruction of the northern part of the state's forests, it will probably be a long time before any such flights will be seen again. How a single area can abound with great abundance while everywhere else nearby for a thousand kms in every direction was nearly devoid of insects is unbelievable. Welling did manage to do a little blacklighting, finding many common widespread species of Sphingidae, and a few Leucorrhamptus triptolemus, Xylophanes juanita, and Nannoparce poeyi as rarities.

**CHIAPAS:** The only report received was from collecting on the southern coastal plain and in nearby mountains, where populations of butterflies were low, and scarcity being the order of the day. Urania fulgens was out after an absence in 1976, but in low numbers. The season came to an abrupt end in September, scarcely anything flying after that month.

**PANAMÁ:** Austin visited the Canal Zone and spent one day at the famous Cerro Campana locality, from March 15-20, noticing general scarcity of butterflies. Moths were scarce at low elevations, more abundant at higher elevations, the same trend noticed in Columbia, Ecuador, and Jamaica by Austin.

**JAMAICA:** Austin spent March 22-28 finding collecting spotty. Moths were found in fair numbers at Hardwer Gap, but little else found elsewhere. The highlands were cloudy and no good collecting for butterflies afforded; most of the still few butterflies were taken in the lowlands, where it was very dry.

#####

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NOTICE

The new membership list will be issued in September or October in place of the regular early fall issue of the NEWS. If you have any further changes which you would like to have made under your name, send them to the Secretary, JULIAN DONAHUE at once. No further new members or changes of address will appear in the NEWS until the JAN/FEB 1979 issue.  
Jo Brewer, Ed. The NEWS.

Address for Julian Donahue:  
Dept of Entomology, Los Angeles CO. Museum of Natural History,  
900 Exposition Blvd, Los Angeles, CA 90007

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- Adelberg, Donald B. Box 206 RD #3 Blairstown NJ 07825
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*The book announcement on the preceding four pages is not a paid advertisement. It is included with all costs borne by the publisher at the request of Leif Lyneborg, Manager of the Scandinavian Science Press, Ltd. Dr. Lyneborg is a member of the Lepidopterists' Society. The inclusion of the announcement results in no cost or profit to the Society.*

ALL CONTRIBUTORS TO THE SEASON SUMMARY, PAST & POTENTIAL, PLEASE NOTE

Contributions for the Annual Field Summary:  
Guide-lines for Contributors and  
Regional Editors.

Annual Field Summaries have had a long history in the Lepidopterists' Society. Originally they were conceived by Dr. Remington as a way to allow all members to document new additions to our knowledge of native lepidoptera in a somewhat objective manner. Through the years the summaries have evolved so that they now encompass many kinds of information. This is very desirable, but all members should now realize that increasing costs make publication of the summary more expensive each year. I feel that by adopting a blanket format acceptable to contributors, the summary can become more useful without necessarily reducing its content or adding to its length. It would also ease the load on the coordinators, and might, at least, keep price increase to a minimum. I suggest the following:

1. NAMES: Scientific names should be based on usage in the most recent revision, general treatment or check list. At present Howe (1975) should be used for butterflies, although the appearance of a new check list will take precedence. For moths the most recent treatment in M.O.N.A. or the up-coming check-list should be relied upon. In past Summaries, some misidentifications have appeared. Members are encouraged, when in doubt, to seek the help of specialists, or deposit examples of "problem bugs" in institutional collections. *Sight records of most Lepidoptera should not be reported.*

2. DISTRIBUTION RECORDS : These may be new State, Regional or County records: They may also be the records of new colonies of "rare" or "choice" species, or they may represent range extensions. All such reports should be identified: e.g. "Xus albus, Jonesville, Smith Co. (NEW STATE RECORD). (See also Annual Summaries for Calif, Ariz, Nev in recent years.)" The most recent treatment of your State or Region should be a standard of comparison, as well as reference to past Field Summaries (See William Fields (1974) compendium of State lists.)

The presence of species at previously known localities should not be reported, unless a span of many years has passed since last report, nor should locality or county records for common widespread species be included. Strays should be distinguished from presence of established colonies, if known.

3. DATES: All records should be identifiable by date. Early or late records for any life stage should be so designated. The appearance of extranumerary broods or individuals at abnormal times may always be reported. Connection with unusual weather conditions should be cited if possible.

4); ABUNDANCE: Exceptionally high or low abundances may be reported, although some absolute measures would be helpful so as to allow comparison between years. *Any attempted correlations with weather phenomena in the absence of direct evidence are of little value.* Statements such as : "Aus bus was not encountered in 3 field trips during its flight period" are to be preferred over: "Aus bus did not fly in Kansas this year." Actual population estimates employing marking methods such as those of Erlich & Davidson would also be useful.

5). PERMANENT CHANGES such as loss of previously known habitats or the recent colonization or invasion by Lepidoptera of well studied areas, should always be reported. (eg Adopaea lineola & Coenympha tullia).

6) LIFE HISTORY: The life history of most N. American Lepidoptera are undescribed, and even the food plants have not been reported for many. Any *new* food plant records should be reported. Include the plant's scientific name followed by family name in parentheses. If possible deposit a pressed specimen in some museum. Detailed life history descriptions are usually published as journal papers or scientific notes.

7). OTHER BIOLOGICAL INFORMATION: Flowers used as nectar sources should be reported (see above), as should other unusual adult foods. Unusually successful collecting methods might be briefly mentioned. Parasites, when encountered in the course of rearing or in the field should be sent for determination and reported in the summary. Other biological phenomena relating to Lepidoptera should also be reported as the cases warrant.

8). GENERAL: Individual reporters should always condense their data or add explanatory notes, as appropriate. The above guidelines are intended as suggestions. They may differ somewhat from the formats of individual Regional Editors. It is hoped that they may prove useful in the coordination of future Annual Field Summaries.

Paul A. Opler, U.S. Fish & Wildlife Service, Washington D.C. 20240.

LIFE HISTORIES ANONYMOUS

Lists of apparently unrecorded or incomplete life histories (see NEWS p.13, Mar/Apr 1978) are grouped geographically for the butterflies, starting with the eastern U.S. (zones 5-6-7) and using the following notations: Taxon; range by state (USPS abbreviations) and/or season summary zones; immature stages unknown (ISU), life history incomplete (LHI), or a specific comment re deficit; foodplant (fp) if known or suspected. Sources for this section: species listed by Howe (Butterflies of N.A. 1975), plus species known to the editor to have deficits, less those for which published information has been located.

\* \* \* \* \*

- DANAIDAE: Danaus eresimus: s.FL; fp in FL.  
Lycora ceres: s.FL; fp in FL.
- SATYRIDAE: Lethe creola: Z 6; LHI; fp probably Arundinaria tecta.
- APATURIDAE: Asterocampa alicia: coastal Z 6; LHI.  
Asterocampa flora: coastal Z 6; ISU.
- NYPHALIDAE: Eunica tatila tatilista: S.FL; ISU.  
Precis evarete zonalis: FL; fp in FL,? Verbenaceae.  
Anartia jatrophae guantanamo: FL; further study of fp in FL,? Bacopa: Scrophulariaceae.  
Spiroeta stelenes biplagiata: s.FL; fp if breeding,? Blechnum: Acanthaceae.  
Polygonia gracilis: Zn 6 & n7; LHI.
- LYCAENIDAE: Chlorostrymon maesites s.FL; ISU.  
Satyrium kingi: Z 6: ?LHI ?fp Azalea & other.  
Satyrium caryaevorus: Z 5 & 7: LHI; fp Carya, Fraxinus, Crataegus, Castanea.  
Strymon columella Modesta: FL; fp in FL,? Sida: Malvaceae.  
Erora laeta: Z 5 & 7; LHI; fp Corylus,?Fagaceae  
Lycaena epixanthe: Z 5,7,11; LHI; (some entries in Tietz seem erroneous)  
Lycaeides melissa samuelis: Z 5,7: LHI for overwintering generation.
- PIERIDAE: Phoebis agarithe maxima: s.FL; LHI, problems re late instars in wild. fp Pithecellobium sp.
- HESPERIIDAE: Oligoria maculata: Z 6 & TX; fp not clear.  
Amblyscirtes linda: TN, AR, OK; ISU.  
Amblyscirtes alternata: Z 6 & TX; ISU.  
Atrytonopsis loammi: Z 6; ISU.  
Euphyes dukesi: Z 6 to OH & MI; ISU.  
Euphyes bimacula: Z 5,7,11; ?LHI; fp Carex stricta.  
Euphyes berryi: FL; ISU.  
Poanes massasoit: Z 4,5,7; ?LHI; fp Carex stricta.  
Poanes hobomok & P. zabulon: Z 5,6,7; old LH data allegedly scrambled as to species.  
Poanes aaroni: Z 6, s.7; LHI.  
Poanes yehl: Z 6; ISU.  
Problema bulenta: Z e6; ISU.  
Hesperia pawnee: Z 4,5 prairies; ISU.  
Hesperia attalus: Z 4,5,6,7 ; ISU.  
Hesperia meskei: Z 6 & TX; ISU.  
Hesperia dakotae: Z 4,5, prairies; ISU.  
Oarisma powasheik: Z 4,5, prairies; LHI  
Nastra lherminier: Z 5,6,7; LHI; fp Andropogon scoparius.  
Nastra neamathla: GA & Gulf strip; ISU.  
Pyrgus centaurae: mnts. Z 6,7; ISU.  
Erynnis zarucco: Z 6; need verification of fp, Rohinia pseudoacacia, others probable & uncertain.  
Thorybes confusus: Z 6 s.7; ISU.  
Epargyreus zestos: s.FL; ISU.

If you have knowledge of publication of the life history on any of the above, please cite chapter & verse for me to include in a subsequent issue; if you have details on unreported LH they should be worked up for the JOURNAL if complete, or reported through this column if partial. Any volunteers for assistance with a sub-family or tribe of the Heterocera? These will be dealt with on a systematic, rather than a regional basis.

Please direct all correspondence relating to this column to Dave Winter, 257 Common St., Dedham, MA 02026, U.S.A.

# Ripples

Dear Jo:

Just a note of interest to collectors of Catocalae: While working on the top floor of the Lamar Life Insurance Building at studios of WJDX in Jackson, MS in 1935, I noticed thousands of Catocalae parked on the roof and all over the walls every night. It was probably late summer or fall. The bright lights which lit up the roof or tower of the building shone all over the city and countryside and no doubt attracted them. As the night wore on more and more flew in.

They were mostly of the black-winged varieties. Every one seemed a bit different in shades or markings, which might be a basis for some sort of study on these variations. There was also a small percentage of the red or yellow hindwing varieties, both regular and smaller sizes. Since I have not been there for over 40 years, I don't know whether or not they still gather there. The lights are probably still there. It would be interesting to see if the moths still go there in such numbers.

Don Thomas, 837 Majorca Coral Gables, FL 33134.

PS I started Harry Clench collecting butterflies when he was 14, so he named the little blue Lycaenid *H. thomasi* after me.

\* \* \* \* \*

Dear Jo,

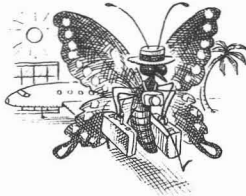
As you can see from the enclosed *Papilio polyxenes* does get around and made TIME Magazine.

I can well remember when I was a little boy (I'll be 70 years old in April), my father used to pick the *P. polyxenes* (then known as *asterias*) larvae off the carrot tops, but in the 17 years we have lived here, we have found only 1. That goes to show you how scarce butterflies have become in these parts. Perhaps we will now have a new colony of northern *P. polyxenes* in Florida. It looks like the "Sunbelt" for everyone after the big blizzard of 1978.

Ray. W. Bracher, 17145 Cherokee Drive, South Bend, IN 46635.

TIME: March 27 1978

► In South Kingstown, R.I., Barbara Silva picked some caterpillars off the carrot tops in her garden last July. Instead of killing them, she decided to keep them on her kitchen windowsill so that her three children could watch them hatch into butterflies. Last week five baby swallowtails began emerging, and Mrs. Silva realized that they would die of cold. She eventually persuaded an airline to jet them to safety in Fort Lauderdale, Fla.



Dear Jo,

In filling in my records with the coordinator for Zone 1 this year (Bob Langston) I included a sight record for *Battus philenor* (a fresh specimen) for Point Loma, San Diego CO. June 5, 1977. This is highly unusual, but since it was not a capture, Bob suggested that I notify you, for inclusion in the NEWS.

Glenn Gorelick, Citrus College, 18824 E. Foothill Blvd, Azusa, CA 91702.

\* \* \* \* \*

Dear Jo,

I would like to submit the following item for the SPREADING BOARD column.

Recently I needed a pair of *H. euryalis* to complete a photo essay I was doing for my Master's degree project. I had the moths, but they were papered and had to be relaxed & mounted in a realistic position. Time was of the essence, & I tried to think of a fast relaxing method. After some cogitation, I suddenly thought of our microwave oven. After all, everything else is done so rapidly in the Microwave, why not try it for rapid relaxing?

I injected a small amount (about .2cc) of water into the thorax of each moth, placed them back inside their envelopes & put these inside a plastic bag. The whole thing was then put into the microwave oven, Not knowing what setting to use, I tried 30 seconds on the high setting.

Upon examination of the specimens, their bodies were soft & the wings were movable. After 20 more seconds in the Microwave the legs & antennae were pliable enough to mount the specimens.

I have since tried this relaxing technique on other large bodied moths & it always works exceedingly well. The advantages are obvious --seconds instead of hours or days. Also there is no mold to contend with during the relaxing process. I have not tried it with butterflies, but I am sure a similar system could be worked out. I would welcome hearing from others if they try this technique.

Bob Grossman, 8340 Mono Lake Drive, San Diego, CA 92119.

Dear Jo,

The "Three's Company" io cocoon is a winner. Which one did the spinning; or was it a joint effort? Energy conservation seems to have reached the lower orders. Warren Kiel, P.O. Box #2, Whitefield NH 03598.

## ANNUAL MEETING NEWS

Here is the final bulletin regarding the 29th Annual Meeting of the Lepidopterists' Society which will take place at the University of Louisville, Louisville, KY, Charlie Covell Jr., Host, on July 6 through July 9, 1978.

Papers are solicited. Those wishing to submit papers for the meeting, should send titles, authors, and length of time required. The latter is very important, and should be strictly adhered to.

Pre-registration: Those wishing to pre-register should send registration fee (\$5.00) to Dr Covell (Address below) before June 9. Pre-registrants will receive a packet containing informational material about local motels, camp sites, & the University Campus, as well as available information about the meetings. Maps & brochures will also be included. Lodging in the campus dormitories is \$5.00 per night per person. The cost of the Saturday night banquet will be \$7.55 per person.

Door prizes: Contributions of books, specimens or artifacts to be used as door prizes would be welcome.

Field trip: A field trip is planned to the habitat of *Speyeria diana* and *Aurora leta*.

So copy the following form if you don't want to mutilate your copy of the NEWS, and send it to:

CHARLES V. COVELL JR, BIOLOGY, UNIVERSITY OF LOUISVILLE, LOUISVILLE KY 40208

Before June 9 ! ! !

-----  
Please pre-register me for the Annual Meeting, for the nights of July \_\_\_\_ to \_\_\_\_.

Name: \_\_\_\_\_ Institution \_\_\_\_\_

Wish to present paper: Title: \_\_\_\_\_

Author(s): \_\_\_\_\_ Time needed: Be realistic PLEASE. \_\_\_\_\_

Yes, I will bring a book() artifact() specimen() for a door prize. \_\_\_\_\_

NOTICES - Buy, Sell, Exchange

Members of the Lepidopterists' Society are invited to use this section free of charge to advertise their offerings in Lepidoptera. We cannot guarantee any notices, but all are expected to be made in good faith. By decision of the Board, prices of specimens offered for sale will not be published henceforth. Please be brief, clear, and check spelling. Notices will be limited to two appearances. The Editor reserves the right to alter or reject unsuitable copy.

- FOR SALE: From Western Ecuador, 500 papered Lepidoptera, mostly Sphingidae & Saturniidae, undetermined, but with data. From south Florida 1200 papered butterflies, determined and with data. Sell to highest bidder. Write for details. Morris Spelman, 6505 Winfield Blvd B-15 Margate, FL 33063.
- FOR SALE: Large numbers of Formosan butterflies, moths, beetles, praying mantids, dragonflies, cicadas and many other insect specimens for collectors, educational programs, etc Also viable cocoons and ova of Attacus atlas and Saturnia pyretorum. Mrs. CHANG PI-TZU, P.O. Box 873, Taipei, Taiwan (Formosa)
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- EXCHANGE: Have copy of "The Lepidoptera of Rapa Island" by J.F. Gates Clarke (bound). Will trade for "Butterflies of Southern California" by Brown; "Moths of Australia" by d'Abbrera or what have you. Also require a copy of "Lepidoptera of Iraq" by Wiltshire. Alan J. Hanks, 34 Seaton Drive, Aurora, Ontario, L4G 2K1, CANADA.
- WANTED: Live specimens, any stage, of Swallowtails of Eastern U.S.A. C.B. Blossom, 1185 Union Commerce Building, Cleveland, Ohio. 44115.

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