



N E W S

of the LEPIDOPTERISTS' SOCIETY

15 APRIL 1970

Editorial Committee of the NEWS

E. J. Newcomer, Editor, 1509 Summitview, Yakima, Washington 98902, USA

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ANNUAL SUMMARY

The Annual Summary begins on page 6 of this issue. I want to express my appreciation to the Zone Coordinators and all the Cooperators who have provided this information during the last six years. The Summary gets better every year, and this year's is probably the best we have had. The reports all came in on time.

—E. J. Newcomer, Editor

ANNUAL MEETING — CARSON CITY, NEVADA, JUNE 19—21

It has just about been decided to hold a symposium Sunday morning, June 21 on Conservation. Anyone planning to attend should be prepared to talk on this subject informally. See 1 March NEWS for particulars of this meeting.

BIENNIAL MEMBERSHIP LIST

The Biennial Membership List will be issued this fall. If your name is not in it, if your address has been changed, or your collecting interests are now different, please fill out the form on the next to last page of this NEWS and send it promptly to Dr. John Downey. If he does not hear from you, your listing will remain as it is, or, in the case of members joining since that list was printed, you will not be in the list at all.

MR. TARO IWASE

It is with regret that we announce the death of Mr. Taro Iwase, President of The Lepidopterists' Society of Japan. It is hoped that information will be received that can be published in the Journal.

NOTICES

Lepidopterists' Society members may use this section free of charge to advertise their offerings and needs in Lepidoptera. The Editors reserve the right to rewrite notices for clarity or to reject unsuitable notices. We cannot guarantee any notices but all are expected to be bona fide. Notices should be sent to the Editor and should reach him at least two weeks in advance of publication date for any particular issue of the NEWS.

WANTED: Papered specimens in series of the following North American Pieridae: P. virginiensis, Colias barbara, C. harfordii, C. occidentalis chrysomelas, Anthocaris lanceolata lanceolata and L. australis. Will purchase or exchange. J. J. Robert, "Belemia," Avda. Dr. Fleming, 19, Vistahermosa, Alicante, SPAIN.

FOR SALE: Live chrysalids of Battus philenor hirsuta, 75 cents for one, 50 cents each for two or more. Immediate delivery postpaid. Also large quantities for special projects. E. Homer Edgecomb, 2132 Miller Street, Redding, California, 96001, USA.

WANTED: Male and female moths of the following in pairs in Riker Mounts: Actias luna, Hyalophora rubra, H. gloveri, Eacles imperialis. Send price and other details. Frederick H. Bower, 97 Olcott Street, Lockport, N. Y., 14094 USA.

FOR SALE: Limited supply of A-1 papered specimens of P. cynthia, A. polyphemus, A. luna and A. io. Write for details. Frederick H. Bower, 97 Olcott Street, Lockport, N. Y., 14094, USA.

EXCHANGE: Needed, 10-20 specimens each of U. S. butterflies, Hesperiiids, Saturnids, Sphingids, and Arctiids. Have South American butterflies and moths for exchange, Callicore, Morpho, Copiopteryx, etc., also birdwings. Send list of what you have. David Bouton, Box 27, Ouaquaga, N. Y., 13826, USA.

FOR SALE: At \$1.50 per copy: Lep. NEWS; vol. IV, nos. 1-9 and list of Members; vol. V, nos. 1,2,6,7,8 and List of Members; vol. VI, nos. 1,2,3; vol. VIII, nos. 1,3; vol. X, no. 3; vol. XI, nos. 3,4. Lep. Journal: vol. 13, nos. 1,4; vol. 14, nos. 1 and 2; vol. 15, nos. 1-4. vol. 16, nos. 1-4; vol. 17, nos. 1-4; vol. 18, nos. 2,3,4; vol. 19, nos. 1-4, vol. 20, no. 1. John R. Eyer, 1112 No. Canal Street, Carlsbad, New Mexico, 88220, USA.

COLLECTOR-DEALER invites correspondence with fellow collectors, breeders, dealers, world-wide who may have moths for sale or exchange. All letters answered promptly. Also want to buy many U. S. Sphingidae, Arctiidae, Geometridae, etc. Now offering large selection of Northeastern Catocalas, Sphingids, Arctiids, Geometrids, etc., all with full identification and data. Free lists. L. N. McLean, Rt. 3, Richfield Springs, N. Y., 13439, USA.

FOR SALE; Papered Formosa butterflies, moths, dragon flies, cicadas, praying mantids and other dried Formosan insect specimens in large quantity. Mrs. Chang Pi-Tzu, Box 873, Taipei, TAIWAN.

FOR SALE: Malaysian butterflies, over 200 different species available. Send 20 cents airmail returned with any order. G. D. Trebilcock, 42 Normandy Avenue, Barnet, Herts., ENGLAND.

FOR SALE OR EXCHANGE: Moths and butterflies of Washington, Texas and California. Would like in exchange any tropical spp. from any country. Also have Lep. NEWS, papers and literature as far back as 1947 to trade for exotic spp. Mrs. Emily Henriksen, 1027 Tacoma Avenue, Sunnyside, Washington 98944, USA.

WANTED: Specimens of Basilarchia from any locality illustrating hybridization between races or species, —particularly the White Admiral. Walter V. Krivda, Box 864, The Pas, Man., CANADA.

FOR SALE: 100 diff. named butterflies with data from Peru, including 10 Papilio, Catagramma, Heliconius, Ancylures, Chlorippe, Prepona, etc. Sent double boxed and postpaid for \$25. David W. Bouton, Ouaquaga, N. Y., 13826, USA.

WANTED: Colias eurytheme and C. philodice specimens and/or records of them, their hybrids and seasonal forms. Also exchange of any Lepidoptera with collectors on West Coast and the Northwest. Also specimens of Papilio machaon group and other scarce or local North American Papilio. Richard W. Sanders, 516 Park Lane, Richardson, Tex., 75080, USA.

WANTED; Papired specimens of Papilionidae of the World. Send offers to Dr. Riccardo Selvatico, San Lio, 5613, 30122, Venezia, ITALY.

WANTED: Specimens of Ornithoptera victoriae, O. brookiana, O. posedon (female only), and O. croesus. Also living cocoons of Attacus atlas (not in large quantities). David Sidman, 10 Garfield Rd., Belmont, MASS. 02178, USA. (Editor's note: I believe only male cocoons can be imported in 1970).

WANTED: At least one pair of Parnassius eversmanni thor, A-1 quality only. Will buy or exchange for Parnassius from Asia, e.g. P. charltonius romanovi, P. honrathi alburnus, P. eversmanni felderi, etc. Dr. Zdenek Weidenhoffer, Valcikova 8, Praha 8, CZECHOSLOVAKIA.

RESEARCH NOTICES

RESEARCH REQUEST: Urgently needed specimens of the genus Lethe (Satyridae) from the following states: Florida, Georgia, North Carolina, South Carolina, Virginia, West Virginia, Kentucky, Tennessee, eastern Arkansas, southern Illinois, Ohio, Indiana, Pennsylvania and New Jersey. Especially needed are specimens from Cane associated habitats. Will purchase or have many spp. of nearctic Lepidoptera for exchange from the Midwest and southern Texas. Richard Heitzman, 3112 Harris Avenue, Independence, MO, 64000.

FOR SCIENTIFIC STUDY: Ornithoptera: O. victoriae and urvillianus from Solomon Ids., Mrs. R. H. Morgan, 130 Hutchison Avenue, New Lynn, Auckland, NEW ZEALAND.

NEEDED: Papired specimens of Pieridae, both U. S. and world-wide, for comparative pigment study. Do not have to be in perfect condition, but would appreciate identification to species. Can use from one to 10 spec. of each sp. Edward J. Pfeiler, Jr., Dept of Zoology, Washington State University, Pullman, WA, 99163 USA.

NEWS NOTES

Julian P. Donahue reports that Thomas H. Clayhills, Borga, FINLAND, wants correspondence from persons having Plusia putnami, both sexes, to sell or exchange. Also other Lepidoptera.

UP WITH THE LEPIDOPTERISTS + + + (Mike Royko in Chicago Daily News) —

John Morrell: Your comments on the conspiracy trial are idiotic. Are you in favor of the country being taken over by anarchists?

COMMENT: Anarchists, no. But Lepidopterists, yes. And I'll admit it. I have long been a member of a political action group that has worked toward the day when Lepidopterists will control all political offices, all government agencies, police forces, boards of directors of major corporations, radio, television and newspapers. As radical as it may sound, it is what I believe in, and now is the time for people to speak out.

—Contributed by Bryant Mather.

NEW MEMBERS

BAIER, Jeffrey J.	Apt. 5, 20 Frey Place, Vallejo, Cal., 94590, USA
BACHELER, Jack S.	302-7 Diamond Village, Gainesville, Fla., 32601, USA
BOYD, Damien	14 Paragon, R. D. Weston, Toronto, Ont., CANADA
DuMAURIER, Eunice	1740 Palm Drive, Laguna Beach, Cal., 92651, USA
FEE, Frank D.	955 W. Erie Street, Allentown, PA, 18103, USA
GAYLORD, Thos. K.	Apt. 3, 2515 Shakespeare, Houston, Tex., 77025, USA
GIBBS, Dr. G. W.	Zoology Dept., Victoria Univ., Box 196, Wellington, N. Z.
HABECK, Prof. Dale H.	Dept. of Ent. and Nema., Archer Rd. Lab., Univ. of Florida, Gainesville, Fla., 32601, USA
HARVEY, Steve	20 Gerhard Rd., Plainview, N. Y., 11803, USA
LEEuw, Irwin	1219 Crystal Lake Rd., Cary, ILL., 60013, USA
LEHMAN, Robert D.	American School, % American Embassy, Tegucigalpa, HONDURAS
McGOWEN, J. H., Jr.	1904 Andreo Avenue, Torrance, Cal., 90501, USA
NAUMANN, Fred T.	Rt. 4 Forsyth, GA, 31029, USA
NUTT, Steven	8271 West Gunnison Street, Norridge, ILL., 60656, USA
ONISHI, Dana	142-10 Roosevelt Avenue, Flushing, N. Y., 11354, USA
PEARCE, Dr. R. M., M. D.	2185 So. 21st East, Salt Lake City, Utah, 84109, USA
PEIGLER, Richard S.	Box 6461, Clemson, So. Car., 29631, USA
SANDERS, Richard	516 Park Lane, Richardson, Tex., 75080, USA
SIDMAN, David A.	10 Garfield Rd., Belmont, Mass., 02178, USA
TOMKIEWICZ, Stanley	2812 Hiester Bl., Reading, Pa., 19609, USA
WHITESIDE, Samuel	Box 12, Waitsfield, VT., 05673, USA

REINSTATED MEMBERS

BROOKS, James C.M.D.	194 Riley Avenue, Macon, GA, 31204, USA
MORGAN, R. H.	Box 320, Honiara, Brit., Solomon Ids.

NEW ADDRESSES

GOODALL, C. J.	Box 78, Port Antonio, Jamaica, WEST INDIES
HALBERT, Richard L.	18804 Donnington, Glendora, Cal., 91740, USA
HARRINGTON, Peter T.	% Occidental of Libya Inc., Box 2134, Tripoli, LIBYA
HENVIT, H. Marlon	1108 W. Eymann, Reedley, Cal., 95654, USA
HUBER, Ronald L.	3203 No. Century, St. Paul, Minn., 55110, USA
KIEL, Warren J.	Rt. 1, Groveton, New Hamp., 03582, USA
McCLAIR, Leslie	Box 434, So. Lancaster, Mass., 01561, USA
McFARLAND, Noel	2 Gulf View Rd., Blackwood, SOUTH AUSTRALIA 5051
McMACKIN, Edward C.	62 Grandview St. So., Oshawa, Ont., CANADA
MONK, Harry C.	No. 5 Westminster Apts., 2013 Capers Ave., Nashville, Tenn., 37212, USA
MURDOCK, Dr. Larry	Fachbereich Biologie, Universitat Konstanz, 775 KONSTANZ, Postfach 733, GERMANY
ROSEN, Dr. Steven C.	Psychology Dept., State Univ. of N. Y. at Stonybrook, Stony Brook, N. Y., 11790, USA
TORBERT, Thomas B.	590 North Sunset Dr., Chandler, Ariz., 85224, USA

DISCONTINUED MEMBERS

The following, who are listed in the 1968 Membership List or in later issues of the NEWS, have been dropped for non-payment of dues. Should they later pay their dues, they will be listed as Reinstated Members.

Page 22	D. A. Lane
Page 3	Max W. Stone, James D. Trager, Yuzo Kawakami, Isao Makibayashi
Page 4	Jun Okami, Richard Ashton Carver, Mihaly Szabados
Page 5	pan Milan Chvala
Page 6	B. Laporte, Alain Six
Page 7	Leonardo Pedrollo
Page 8	Lon McLeod
Page 10	Alberto Muyshondt
Page 13	Walter T. Phillips, Dorothy Beals
Page 14	Robert F. Denno
Page 15	Jesse Johnston, Ron McFall
Page 16	Henry A. Madson, Dr. Jerome T. Pearlman, Dorothy Reeves
Page 17	Dale Stiver
Page 18	Wm. X. Shields
Page 19	J. Thiele
Page 21	Gary Tenen, John Paglisi, Dr. H. Stanley Thompson
Page 22	Dr. J. R. Turner
Page 24	Dr. Thomas F. Kiner
Page 25	Robert Biskeborn, Shirley Gurshman
Page 26	Alfred Gast
Page 28	Mrs. Peter C. Schmitt, Jr.
Page 29	Charles R. Crowe, Miss Marijo Tamburrino, Roy Van Driesche
Page 32	Lawrence E. Gilbert, Jr., C. L. Williams, Kim R. Kuebel
Page 34	Jan Thelander, Robt. H. Wuttken
Page 35	Brian F. Bergman, S. Jarasius, Philip A. Johnson

The following are not in the Membership List: Austin Chinn, Miss Berda Fletcher, Col. Frederick S. Hayden.

BOOKS

ANNOTATIONES RHOPALOCEROLOGICAE 1970. 70 pp. Ready April 15. Notes on butterfly generic names; a sequel to the same title of 1968. Copies \$3 post free (prepayment will be appreciated). From Charles F. Cowan, Little Gaddesden House, Berkhamsted, Herts., ENGLAND. The 1968 pamphlet, 20 pp., is still available at \$1.50.

Burns and Rotherham (1969), Australian Butterflies in Color, 112 pp., 51 color plates depicting 80 of the known spp., \$6.95.

Comstock, W. P. (1961), Butterflies of the American Tropics: The genus *Anaea*. xiii + 214 pp., 250 figs., 30 exquisite color plates, litho, in 9 colors folio size, limited to 3000 copies, \$27.95.

Curtis, Wm. (1782) reprint 1969. A Short History of the Brown-Tail Moth. 31 pp., 1 color plate, incl. introduction and entomological notes. This book is so rare that only two copies of the original edition are known. Cloth bound, \$9.30. These books obtainable from Entomological Reprint Specialists, Box 207, East Lansing, Mich., 48823, USA

NORTH AMERICAN ANNUAL SUMMARY FOR 1969

ZONE 1: ARIZONA, NEVADA, CALIFORNIA. Coordinator: Robert Langston. Contributors, C. Callaghan, G. Conner, J. Emmel, C. Ferris, G. Forbes, R. Funk, R. Garrison, G. Gorelick, C. Henne, P. Harlan, A. Ludtke, J. Mori, P. Opler, R. Prieststaff, A. Rubbert, C. Sekerman, O. Sette, O. Shields, M. J. Smith, R. Sternitzky, F. Thorne, R. Wells, R. Wielgus and D. Willis. *Cyn - Canyon.*

ARIZONA: Ferris reported generally very dry in eastern part of state until near end of August. Diminished number of species taken, esp. with respect to *Speyeria*. White Mts. dry to mid-August, then cold and heavy rains into early September.

Fe—Ferris, Fo—Forbes, Fu—Funk, Ga—Garrison, Go—Gorelick, M—Mori, R—Rubbert, Se—Sekerman, St—Sternitzky, T—Thorne and W—Wielgus.

EAST=Probable easterly range extensions (added by coordinator).

"Common" is stated when usually rare or not reported for several years.

No new STATE or COUNTY records indicated by collectors.

MIGRATIONS: Except for greater numbers of *Anteos clorinde* in southeastern part (Fo,St), no migrations reported. *Nymphalis californica* noted at Flagstaff and in Gila Co. (Ga), but not common.

MOTHS: *Hemaris senta*, Inner Basin, San Francisco Peaks, 10,500', Coconino Co., 23 June (Fu). *Seryda constans*, Oak Creek Cyn., Coconino Co., 29 July (Go). *Ctenucha venosa* and *Catocala amatrix editha*, 3 mi. SW Patagonia, Santa Cruz Co., 12 Oct. (R).

BUTTERFLIES: *Agathymus neumoegeni*, nr. Pine, Gila Co., 1 Sept. (Fe). *A. baueri*, N. of Sunflower, Maricopa Co., 9–10 Oct. (R and R); 7 Springs Cpgd., Maricopa Co., 25–26 Oct. —66 spms. (W); Cave Cr., Cochise Co., 1 Nov. (Ga). *Meg streckeri*, 4,22 mi. N. Holbrook, Navajo Co., 4 June (Fu). *Hesp. uncas lasus*, Holbrook, 4 June and nr. Sedona, Coconino Co., 11 June (Fu). *Pholisora alpheus* and *Pyrgus scriptura*, Holbrook and N., 4 June (Fu). *Chionides albifasciatus*, Peppersauce Cyn., Catalina Mts., Pinal Co., 4 April (M). *P. b. rudkini* sympatric with *P. p. asterius* nr. Desert Vista Point, Maricopa Co., 2 Apr., 3 May, 20 Sept. (W). *P. b. rudkini* (90% black forms *clarki*) 5 mi. NE Saguaro L., Maricopa Co. EAST, 31 Mar., 1 Apr. (M). *P. indra kaibabensis*, Roaring Spr., N. Rim., Coconino Co., 9–10 Aug. (W). *P. multicaudata*, Oak Cr. Cyn., Coco Co., 29 July (Go); Sierra Ancha Mts., Gila Co., 10 May (W). *Neophasia menapia*, Flagstaff, July (Fu and Ga). *N. terlootii*, mass flight of ♂♂, Hauchuca Mts., Cochise Co., Nov (St). *Pieris narina mogollon*, White Mts., Apache-Greenlee Cos., late Aug., much reduced over previous years (Fe). *Colias alexandra*, Webber Cr., ENE. Payson, Gila Co., 31 May (Ga). *Anteos clorinde nivifera*, Sonoita Cr., 14 mi. N. Nogales, S. Cruz Co., late Aug—early Sept., COMMON (Fo); Hauchuca Mts., Cochise Co., many coll. 1969, 140++ on the wing, last female on 11 Dec. (St). *Kric lyside*, Huachuca Mts., 3 in 1969 (St). *Anthocaris pima*, Lower Madera Cyn., Pima Co., 1 Apr. COMMON (Se), with *E. hyantis lotta*. *A. sara inghami*, vic. Cave Cr., Cochise Co., 30 Mar. (Fe), with *E. h. lotta*. *Apodemia mormo*, unusually large, 1 mi. SE. Bagdad, Yavapai Co., 7 Oct. (R and T). *A. m. mejicanus*, 3 mi. SW. Patagonia, S. Cruz Co., 12 Oct. (R and T). *A. nais*, Flagstaff and S. Fran. Peaks, 7-8000', Coconino Co., June-July (Fu). *Erora quaderna*, Oak Cr. Cyn., Coco Co., 31 July (Fu). *S. leda ines*, 3 mi. SW. Patagonia, 12 Oct. (R and T). *S. alcestis osleri*, Jermonie, Yavapai Co., 14 June (W). *Calloprys apama*, Flagstaff, June (Fu). *Pleb. icarioides* ssp., Oak Cr. Cyn., 29 July (Go). *Phil. battoides martini*, 2 mi. S. Sunflower, Mazatzal Mts., Maricopa Co., EAST, 3 Apr. (Se); nr. Bumblebee Yavapai Co., 13 Apr. (W). *Anaea andria*, Sedona, Yavapai Co., 12 Apr. (Ga). *Asterocampa celtis montis*, Madera Cyn., Pima Co., 11 Oct. (T). *Lim. asty. ariz.* and *wied. sinefascia*, Oak Cr. Cyn., 29 Jul. (Go) and nr. Pine, Gila Co., 1 Sept. (Fe). *Nymphalis californica*, Flagstaff, 22 May and Webber Cr., ENE. Payson, Gila Co., EAST?, 31 May (Ga). *Phyciodes texana*, common, 3 mi. SW. Patagonia, 12 Oct. (R and T). *P. mylitta thebais*, vic. Cave Cr., Cochise Co., 30 Mar. EARLY (Fe). *Melitaea theona thekla* and *M. pola*, 3 mi. N. Sonoita, S. Cruz Co., 14 Aug. (M). *M. fulvia*, Peppersauce Cyn., Catalina Mts., Pinal Co., 4 Apr. (M). *Euph. hermosa* "klotsi", 4 mi. S. Sunflower, Maricopa Co., common, 3 Apr. (Se); Oak Cr. Cyn., June-July (Fu and Ga) [Disparity in season — diff.sp.?]. *E. a. magdalena*, White Mts., Apache-Greenlee Cos., reduced nos. in 1969 (Fe). *Speyeria nokomis nitocris*, *atlantis* ssp., *mormonia luskii* and *aphrodite byblis*, White Mts., in reduced nos. (Fe). *S. atlantis nausica*, Rose Cr. Cpgd., Sierra Ancha Mts., Gila Co., 28 June (W). *S. a. shellbachi*, TOPOTYPES, Neal Spring, North Rim., Coco Co., 5 July, 8 Aug. (W). *Cercyonis pegala boopis* [after Emmel, 1969, J. Lepid. Soc. 23: 165] Oak Cr. Cyn., Coco Co., 29 July (Go), 31 July (Fu and Ga). *C. p. damei*, N. Kaibab Tr., North Rim., Coco Co., 4 July (W). *Oeneis alberta daura*, S. Fran. Pks., Coco Co., May and June (Fu and Ga).

LIFE HISTORIES: *Pholus satellita pandorus* larvae on *Parthenocissus quinquefolia*, Flagstaff, Coconino Co., Aug. (Fu). *Hemileuca neumoegeni* larvae on *Rhus trilobata* and *Forestiera neomexicana*, Merriam Crater and Meteor Crater, Coconino Co., June-July, emgd. Aug.-Sept. (Fu).

Pholisora alpheus ovipositing on *Atriplex canescens*, Winslow, Navajo Co., 3 June (Fu). *Papilio bairdii* larvae on *Artemisia dracunculul*, Flagstaff, S. Fran. Pks. and Merriam Crater, May-July, emgd. June-Aug. (Fu) [confirms host, Apache and Coco Cos., 1968 (M)]. *Euph. chalcedona* nr. *quino*, 3 mi. S. Hillside, Yavapai Co., 7 Oct., assoc. with *Pentstemon antirrhinoides* var. *microphyllus* (T). *Lim. a. obsoleta* larvae on willow, 3 mi. SW. Patagonia, 12 Oct. (T) [adults here 2 Sept. 1968 (M)].

NEVADA: Shields reported collecting somewhat hampered by cloudy, rainy weather in mid-June. However, for the state as a whole, conditions were favorable with many species taken from early April through Sept. It was a bonanza year, with four species considered NEW for Nevada, based on available records.

C—Callaghan, E-S — Emmel and Shields, H — Harlan, L — Ludtke.

COUNTY and STATE= New records for County and/or Nevada.

NORTH, EAST, etc. = Northerly, easterly, etc. range extensions.

MOTHS: "*Pseudohazis* moths common." Burton Cr., nr. Mt. Callaghan, Lander Co., 19 Aug. (C) Only report. Heterocerists — Nevada welcomes you!

BUTTERFLIES: *Ochlodes yuma*, Lida Summit, Esmeralda Co., 23 Sept. (H). *Hesperia pahaska martini*, Sawmill Cyn., E. side Sheep Range, Clark Co., 1-2 July (E-S). *Copaeodes aurantiaca*, Spring Mts., Clark Co., 5 Sept. (H). *Heliopetes ericetorum*, Arrow Canyon Range, Clark Co.,

14 Apr. (H). Parnassius phoebis rubina, Angel Lake, 26 July and Spruce Mt., Elko Co., 28 July (E-S); nr. Bonanza Gulch, Jarbidge Mts., Elko Co. NORTH, 22 July (E-S). Papilio bairdii brucei, Toiyabe Range, Lander Co., 25 July—few Nev. records, rare (H). P. b. rudkini (forms clarki and comstocki) McCullough Range, Clark Co., 11 Apr. (H). P. indra ssp., Peavine Cr., Toiyabe Range, Nye Co., 19 July (C). P. eurymedon, Jarbidge Peak, 10,789', Elko Co., 22 July (E-S). Pieris napi (? mcdunnoughi), Cleve Cr., Schell Creek Range, White Pine Co., 31 July (E-S). Anth. cethura morrisoni, Granite Range, Washoe COUNTY and NORTH, 28 Apr. (H) —few Nev. records: Clark Co. (H), Nye Co. (Langston). A. pima, McCullough Range, Clark Co., 11 Apr. (H) Apodemia mormo mormo, Jett Cyn., Toiyabe Range, Nye Co., 23 Aug., very common (C), and ssp., 9 mi. S. Caliente, Lincoln Co., 30 Aug. (C). A. m. deserti, Spring Mts., Clark Co., 5 Sept. (H). Satyrion fuliginosum, Angel Lake, 26 July and Spruce Mt., Elko Co., 28 July (E-S). Mitoura s. siva, McCullough Range, Clark Co., 11 Apr. (H). strymon sylvinus putnami, Snake Range, White Pine Co., EAST for Zone 1, 24 July (H). S. titus immaculosus and Lyc. arota virginensis, Austin Summit, Lander Co., 9 Aug. (C). Plebejus saepiolus, Kingston Cyn., Lander Co., 9 July (C). P. shasta, Angel Lake, Elko Co., 26 July and Bunker Hill, 11,474', Toiyabe Range, Lander Co., 5 Aug. (E-S). Fall brood of P. acmon, Everes comyntas, Jett Cyn., Nye Co., 23 Aug. (C). Philotes battoides glaucon, E. Slope Humboldt Range, Pershing COUNTY, 19 July (E-S); Sta. Rosa Range, Humboldt COUNTY, 20 July (E-S). P. enoptes ancilla, 9 July, Kingston Cyn. (C); 4 mi. W. Charleston Res., Elko Co., 24 July (E-S) P. mojave and P. speciosa, Arrow Cyn. Range, Clark COUNTY and STATE, 14 Apr. (H) [Both previously coll. in Nevada by D. L. Bauer, but not in 1968 Summary]. P. mojave, Delamar Mts., Lincoln COUNTY and EAST, 13 May (H). Scol. piasus, Kingston Cyn., 9 July (C); Jarbidge Peak, 10,789', Elko Co. NORTH for Zone 1, 22 July and Angel Lake, Elko Co., 26 July (E-S).

Lim. weidemeyerii nevadae, Kingston Cyn., 21 Aug. (L); Sawmill Cyn., Sheep Range, Clark Co. SOUTH, 1-2 July (E-S). vanessa virginensis in numbers, Wheeler Peak, White Pine Co., July (C). Melitaea acutus, Pyramid Lake, Washoe Co., 7 June (L). M. leanira cerrita, Blue Diamond, Clark COUNTY and STATE, 12 Apr., (H). M. pola monache, Spring Mts., Clark Co., 5 Sept. (H). Euph. anicia veazieae, Black Rock Range, Humboldt Co. EAST, 31 May (H). E. a. wheeleri, Mr. Grant, 10-11,000' Wassuk Range, Mineral Co., 15 July (E-S). E. editha nr. monoensis, Toiyabe Range, Lander Co., 9 July (C), 11 July (E-S). Speyeria nokomis apacheana, Troy Cyn., Grant Range, Nye COUNTY, range extension 7 July, EARLY! (E-S); Snake Range, White Pine COUNTY, EAST for Zone 1, 24 July (H), 11 Aug. (E-S); Kingston Cyn., Lander Co., 21 Aug. (L). S. egleis, Bald Mtn., Snake Range, White Pine Co., 30 July (E-S). S. egleis ssp., Jarbidge Peak, 10,789', Elko Co., 22 July (E-S). Euptoieta claudia, Sawmill Cyn., Sheep Range, Clark COUNTY and STATE, 1 July (E-S). Satyridae (all E-S): Coe. tullia mono, Mt. Grant, 10-11,000', Wassuk Range, Mineral Co., 15 July. Neominois ridingsii, nr. Bonanza Gulch, Jarbidge Mts., Elko Co., 22 July. Oeneis chryxus, North Schell Peak, 4 July and Bald Mtn., White Pine Co., 30 July.

CALIFORNIA: Rains through March in central and northern California, with heavy snowpack in Sierra. Spring emergences late, but with little precip. in spring, summer species about normal time in lowlands (L), late at high elev. (Sm). Parts of Mojave Desert good, following winter of heavy rains (Sm). Heavy rains late in season in southern Calif. helped some species (T), and delayed some a month (P), but improved numbers and species.

C—Conner, E—Emmel, F—Forbes, G—Gorelick, L—Langston,
Lu—Ludtke, M—Mori, O—Opler, P—Priestaff, Se—Sekerman,
St—Sette, S—Shields, Sm—Smith, T—Thorne, W—Wells, and
Wi—Willis. COUNTY (in caps.) = New county records as stated
by collr. NORTH, EAST, etc. = Northerly, easterly, etc. range
extensions.

MIGRATIONS: Annual appearance of Danaus plexippus noted from mid-Aug. through Thanksgiving in Bay Area (L), with large numbers at Pt. San Pablo, Richmond, 5 Oct. No reports on Vanessa cardui or Nymphalis californica.

MOTHS: Hemaris senta and Proserpinus clarkiae, Oso Cr., Santa Barbara Co., Mar. (P). Hyalophora euryalis, Pinnacles, San Benito Co., 13 Apr. (L). Calosaturia mendocino, Cyn. below Monticello Dam, Yolo COUNTY, 23 Mar. (C). Pseu. eglanterina, Dillon Beach, Marin Co., 12 Aug. (L). Alypia mariposa, Xylomyges februalis LATE, and Ichthyura apicalis, Pinnacles, 12 Apr. (L). Axenus arvalis very numerous, 3 Rivers and along Kaweah R., Tulare Co., 2 Apr. (L). Annaphila divinula, Folsom L., Eldorado Co., 20 Apr. (C). A. miona, Hobo Camp, Kern River, 31 Mar. (L). Catocala californica, Oso Cr., S. Barb. Co., Aug. (P), and 7 mi. SE. Cholame, S.L.O. Co., 8 Sept. (L). C. hippolyta, Berkeley, 24 Aug. (L). C. verrilliana, Oso Cr., Aug. (P). Ethmia discostrigella, N. of Calistoga, Napa Co., 17 May (L). Ramosia bibionipennis, 2 mi. S. Sausalito, Marin Co., 30 May (L).

BUTTERFLIES: Meg. yuccae maudae adults, nr. Painted Rock, Old Woman Mts., San Bdo. Co., 27 Mar. (E-S). Hesp. columbia, 9 mi. N. Calistoga, Napa Co., 17 May (L). Cart. palaemon, 2 mi. N. Indian Dick Guard Stn., Trinity Co., 14 June (W) in numbers, Castle L., Sisk. Co. NORTH for Zone 1, 20-23 July (O). Helio. ericetorum, 1 ♀, 9 mi. S. Big Sur, Mont. Co., NORTH for coast, 10 May (L). P. scriptura, nr. Bard, Imperial Co., 13 Oct. (T). Thorybes diversus [det. MacNeill], Castle L., Sisk COUNTY, 20-23 July (O). Eparq. clarus, Auburn Placer Co., 24 May (Lu). P. clodius baldur, Battle Cr. Cpgd., Lassen Park, Tehama Co., 8 July (G) and Wet Mdws., Tuol. Co., 9 July (L). P. phoebis behrii, n. slope Mr. Dana, 11,300', 6 Aug. (Sm) and above Gaylor L., Mono Co., 7 Aug. (Se). P. bairdii rudkini, Bonanza King Cyn., Providence Mts., S. Bdo. Co., 3 Apr. (Wi). P. indra common, crest W. of Tioga Pass, 10-11,400', Mono Co., 22-23 July (Se), 30-31 July (C-Lu). P. i. fordi, Coxcomb Mts., Riverside COUNTY and SOUTH, 26 Mar. (E-S); Sheephole Mine Cyn., 4 Apr. and vic. Old Woman Sprs., S. Bdo. Co., 6 Apr. (Wi). P. multicaudata, Yosemite Vy., Mariposa Co., 24 June (Lu) and 1 ♂ nr. Big Pines, L. A. COUNTY and SOUTH, 26 May (Sm) [S and W of Prov. Mts., 1968 rept. and far S of Sierra Nevada records]. Limekiln Cyn SE Lucia, Mont. Co. SOUTH, 10 May (E-L) and form castoria, Bear Vy. Marin Co., 22 June (L). P. sisymbrii, Sheephole Mts. S. Bdo. Co., 4 Apr. (Wi) and Pinnacles, San Benito Co., 12 Apr. (L). Zerene eurydice, Mark West Spr., Sonoma Co., 23 Mar. Early for north (L). A. lanceolata australis and A. cethura, Hobo Camp, Kern R.m 31 Mar. (L). A. c. morrisoni, caliente and E. hyantis lottia, Red Rock Cyn., Kern Co., 1 Apr. (L). E. hyantis, Big Mdws, Hwy. 4, Calav. Co. 5 July LATE (L). E. h. andrewsi common, vic. Crestline, S. Bdo. Co., 25 May (Sm). Apodemia mormo, Sheephole Mine Cyn. 4 Apr. and vic. Old Woman Sprs. 6 Apr. (Wi). A. mormo cythera, Lower Rock Cr., Mono Co. 8 Aug. (Se). Call. behrii abundant, 3 mi. NE, Weed, Sisk. Co. WEST, 9 July (G). S. fuliginosum, nr. Dorris, Hwy. 97, Sisk Co., NORTH for Zone 1, 9 July (G) and Sonora Pass, 1 Aug. (Lu). M. spinetorum, N. of Stan. R., Tuol. Co., 7 July (L). M. loki, small fall brood, Sentenac Cyn., S. D. Co., 28 Sept (Se). S. titus immaculosis, Lava Beds N. M., Sisk. Co. NORTH for Zone 1, Aug. 6 (M). S. auretteum, 3 mi. N. Ione, Amador COUNTY, 19, 23 May (W), 1 June (M) and 2 mi. S. Whispering Pines, Lake Co., 30 May (W). S. a. spadix common, nr. Cajon Pass, S. Bdo. Co. 21 May (Sm). Callophrys comstocki, Kingston Range, 29 Mar. (E-S) and Providence Mts., San Bdo. Co. 3 Apr. (Wi). C. lemberti, Castle L., Sisk. COUNTY and NORTH, 20-23 July (O). C. viridis Marina Beach dunes, Monterey COUNTY and far SOUTH, 11 May LATE (E-L). L. heteronea, Sonora Pass, 23 Aug. (Lu). L. phleas hypophleas, n. slope Mr. Dana, 11,300', 6 Aug. (Sm) and 12,800' on Mt. Starr, Fresno Co., 27 Aug. (C). L. cupreus, Big Mdws., Calav. Co., 5 July (L). Breph. exilis, nr. Coalinga, Fresno Co., 6 Feb. early (O). L. argyrognomon "ricei", Grayback Pass, Sisk. COUNTY and STATE, July (J. Powell). L. melissa, E. of Wildrose Stn., Panamint Mts., Inyo Co. 15 May (O). P. monticola, SE. of Horse Thief Sprs.,

Kingston Range EAST!! and NORTH, 29 June (E-S). "Agriades glandon ssp." Castle Lake, Sisk. Co., 20-23 July (O) —may be new for STATE. P. battoides bernardino, nr. Gorda, Mont. Co. NORTH for coast, 6 July (G). P. e. tildenii, Polonio Pass, Hwy. 46, S. L. O. Co. 8 Sept., new colony (L-St). P. mojave, Coxcomb Mts., Riv. Co. 26 Mar. (E-S); Carroll Cr., Inyo Co. NORTH for Sierran escarpment, 14 May (O); and symp. with P. speciosa, nr. Lucern Vy., S. Bdn. Co. 9 Apr. (J. Lane and Se). P. sonorensis, Oso Cr., Santa Barb. Co., Mar. (P); 9 mi. S. Big Sur. 10 May, LATE for sea level (L); and summit Garnet Pk., 6000', S.D. Co., 17 May HIGH elev. (T). Scol. piasus catalina, Laguna Mts. at 5200', 17 May, rare in S.D. Co. (T). G. lygdamus ssp., E. of Wildrose Stn., Panamint Mts., 15 May (O) —nr. oro in 1960 (L). Lim. archippus obsoleta, Palo Verde Marina, Imperial Co., 19 June (F). L. weid and hybrid fridayi, N. shore Mono Lake, 21 July (Se). N. milberti, Barton Flats, S. Bdn. Mts. SOUTH, 9 Aug. (P). Chlosyne californica, vic. Old Woman Sprs, 6 Apr. (Wi). C. gabbii, Marina Beach dunes, Monterey Co. NORTH for coast, 11 May (E-L). C. damoetas malcolmi, Tioga Crest, 11,400', 30-31 July (C) and Mt. Dana, Mono Co. 6 Aug. (Sm). C. leanira wrightii, Oso Cr., S. Barb. Co. Mar (P) and 4 mi. N. Santes, S.D. Co. 8 June (Se). C. alma, E. of Wildrose Stn., Panamint Mts. 15 May (O) —here in 1957, 58, 60 SOUTH (L). E. anicia wheeleri, S. of Bodie, Mono Co. 14 July (E-S) and Bristle Cone Area, 10,000', White Mts. 11 July (Se). E. editha, Santa Barbara area, May LATE (P) and wrightii, Miramar Mesa, S.D. Co. 4 Apr. (T). S. zerene behrensii, Battle Cr. Cpgd., Lassen N. P., 8 July (G). S. egleis clemencei, 3 mi. S. Pozo, S.L.O. Co. 11 June (M). N. ridingsii, Sonora Pass, 9700', 1 Apr. (C). C. oetus, nr. Dorris, Hwy. 97, Sisk. Co. NORTH for Zone 1, 9 July (G). O. ivalda, Donner Pass at 7400', Placer Co. 12 June, low elev. and early (E-S) and N. Carson Pass, Alpine Co. 23 July (C-Lu). O. chryxus stanislaus, E. of Saddlebag L., 11,400', 30 July (C-Lu) and Patterson Peak, Mono Co. EAST almost in Nev. 20 Aug. (Herlan).

LIFE HISTORIES: Hyalophora gloveri larvae on willow, Tom's Place, Mono Co. 5 Aug. (Sm). Hemileuca electra larvae abundant on Eriogonum fasciculatum. Gavilan Hills, Riverside Co. 4 Apr. (Sm). Tegiticula paradoxa adults in flowers of Yucca brevifolia, 5 mi. E. Monolith, Kern Co. 1 Apr. (L). Apodemia mormo (70% intermed. to langei) numerous adults on Eriogonum latifolium indictum, Polonio Pass, S.L.O. Co., 8 Sept. (L-St). Incisalia fotis bayensis larvae on Sedum spathulifolium, Montara Mts., San Mateo Co. SOUTHEAST range ext., 29 Apr. (E).

ZONE II: PACIFIC NORTHWEST: BRITISH COLUMBIA, WASHINGTON, OREGON, IDAHO, MONTANA.

Cordinator: E. J. Newcomer. Contributors: C. Durden, E. Gage, E. Newcomer.

WEATHER: Unusually cold weather in late December and early January probably contributed to the scarcity of some species in 1969.

WASHINGTON: Newcomer took Oarisma garita at 3000 ft., so slope, Mt. Spokane, Spokane Co., June 13-15. NEW COUNTY RECORD. It had been taken in Coeur d'Alene Co., immediately north of Spokane Co., in 1965 by Jon Shepard. Callophrys unusually scarce. Yakima Co.; B. selene very numerous in Moxee Bog, Yakima Co., August 21-22.

MOTHS: In 1966 and 1967, 15-20 light traps were operated by the U. S. Department of Agriculture in the Yakima Valley in connection with experimental work on the codling moth. Most of them were in an abandoned orchard near Toppenish Creek, so that there was a variety of plant growth nearby, —orchard, the usual trees and shrubs along a creek and desert. Among the very large numbers of moths taken were the following (Sphingidae and Catocalas by W. Sieker; others by Lloyd M. Martin): Pacysphinx modesta, Paonias myops, Smerinthus cerisyi pallidulus, Celerio lineata, Protoparce quiquemaculata, Sphinx perelegans, S. drupiferarum utahensis, Catocala breisis, C. aholibah, C. pura, C. relictella, C. allusa (?), Ralphia elbea, Acronicta hesperidus, Euxoa silvia, E. hollemani, E. andera, E. misturata, E. pluralis, E. remota, E. atomaris, E. costata, E. brocha, Pseudorthosia variabilis, Agrotis vetusta, A. venerabilis, Feltia ducens, Spaelotis havilae, Peridroma margaritosa, Graphiphora c-nigrum, G. conchus, Setagrotis planifrons, Pseudoglaea olivata, Abagrotis vittifrons, A. mirabilis, A. trigona, Rhynchagrotis exsertistigma, Scotogramma trifolii, S. proxima, Admetovis oxymorus, Polia nugatus, P. adjuncta, Lacinipolia stenotis, L. acutipennis, L. pensilis, L. stricta, L. illudabilis, Anepia jola, Orthodes hanhami, O. semicarnea, Xylomyges rubrica, Ceramica picta, Xylena nupera, Septis centralis, Crymodes devastator, Oligia violacea, Andropolia diversilineata, Platyperigea meralis, Proxenus nitens, Prodenia praefica, Cosmia canescens, Acontia flavipennis, Autographa falcifera, A. atlas, A. abrota, A. californica, Caenurgina crassi, Synedroida divergens, S. stretchii, Ichthyura apicalis, Schizura paradisis.

OREGON: Newcomer noted large numbers of P. occidentalis August 1, at 4200 ft. on desert around Steens Mt., Harney Co.

MONTANA: Durden, so. and central Montana, August and early September, reported weather unusually hot but collecting good. Especially noted: Polygonia silenus, Carbon Co., Aug. 19, Colias meadii elis, including white females, and C. pelidne skinneri, Carbon Co., Aug. 18, Col. christina alberta, Golden Valley Co., Aug. 26, Lycaena hypohlaeas, Carbon Co, Aug 22-23. Fifteen subspecies of Speyeria were taken, mostly in Carbon and Golden Valley Co., and some in Fergus and Stillwater Cos. These included: S. edwardsii, halcyone, platina, bremnerii, albrighti, h. sakuntala, atlantis electa, a. hesperis, a. helena, dennisi, mormonia eurynome, m. artonis, aphrodite ethne, leto letona.

ZONE III: ROCKY MT. AREA. ALBERTA, WYOMING, UTAH, COLORADO and NEW MEXICO.

Coordinator: Donald Eff. Contributors: C. Callaghan, P. Conway, E. Dornfeld, C. Durden, J. Emmel, C. Ferris, M. Fisher, G. Forbes, R. Funk, G. Gorelick, N. Greitzer, D. Groothuis, B. Mather, J. Scott, O. Shields, R. Stanford, K. Tidwell, and R. Wielgus.

In general it appears that most areas had a good snowpack for the winter, but an early spring. After that Mother Nature, as she so often does, treated various sections of the Rocky Mountain Area in different ways.

ALBERTA: Legge reports early spring and noticeable decline in number of species inhabiting lower altitudes. Papilio nitra missing entirely, and even such common species as P. glaucus were almost absent. The higher altitude and alpine species in about normal numbers. Gorelick found good numbers of Plebejus saepiolus, Colias alexandra and Coenonympha tullia at Johnson Lake near Banff July 14. On the same day Gorelick and Greitzer took one fresh specimen of Sthenopsis quadriguttatus at light in alder forest habitat, Happy Valley Recreation Area, north of Calgary. Legge took good series of Lycaena phlaeas arethusa on Plateau Mt.

Life History. The most exciting news from this area was the discovery by Legge of the food plant for Boloria astarte. It is Saxifraga bronchiatis. Apparently it takes two years to complete the life cycle of this butterfly.

WYOMING: This state was well covered this year. Ferris notes that Wyoming experienced a mild winter and unusually warm, dry weather in April and May which resulted in an advanced season, with collecting particularly good in May. Then came June with torrential rains, hail, snow, high winds and near freezing temperatures. The alpine collecting was later than usual because of heavy snows on June 23 and 24. July and August provided good collecting but where last year Ferris was still collecting in mid-October, this year both Wyoming and Colorado had heavy snows early in the month.

Records, Choice Species, Extension of Range, Relative Abundance.

In Wyoming the season began about May 5th with the appearance of Callophrys sheridani and Incisalia schryverii. Ferris took two fresh males of Papilio nitra in Albany Co., a new county record. He also found I. schryverii in the Sherman Range and took Boloria frigga sagata on Pole Mt. for the first time. On the prairie near his home some unusual species were taken, including Yretta rhesus and Hesperia nevada, and in dry washes at 7500', a small series of Plebejus shasta minnehaha. This butterfly has always been considered a denizen of gravelly slopes in the alpine reaches above timberline. Recently a number of specimens have been taken in territory that is far from typical, as just indicated. A couple of Lep members are presently undertaking a study to see if a sibling species may be involved. Fisher took a few Hesperia uncas and some 30 specimens of Strymon californica near Laramie. Collecting in general was good throughout Wyoming, although Conway found Togwotee Pass, in Teton Co. extremely poor. This is usually an excellent collecting spot. Turpin Meadows, on the Buffalo River nearby, was only fair, but the sagebrush hills did yield Lycaena editha montana, Boloria selene tollandensis and kriemhild among others. Collecting in the Snowy Range was fair to good with Dornfeld taking a good number of Parnassius. Pyrgus centaureae loki was common here as it was over most of Wyoming. Groothuis, Ferris, Conway and Eff all managed some Boloria eunomia laddii. A bumper crop of female Colias meadi noted in the Snowy Mts. Gorelick and Greitzer collected in Yellowstone Park and the Teton and the adjacent Park County. In the Park at Mt. Washburn and on the slopes above Tower Jct. good numbers of Parnassius clodius gallatinus, Colias alexandra and Coenonympha haydeni were taken along with other species which are to be expected, such as Plebejus saepiolus and Glaucopsyche lygdamus. The following day the Cascade trail near the base of Mt. Moran in Grand Teton Park provided some excellent collecting. Lycaenids were especially abundant with Lycaena mariposa and helleides predominant. A good catch was a small series of Hesperia manitoba, but the best record was Lycaena phlaeas arethusa. Groothuis also recorded this species from Beartooth Pass on the Montana-Wyoming border. Durdin found Erebia callias less common than the previous year over much of the range, but at Clay Butte, Park Co. it was swarming. At Dead Indian Hill, Sept. 2, Hesperia juba, not previously recorded from this area was captured. The Beartooth Pass area produced an unusual record. Groothuis took 3 specimens of the white female form medi of Colias meadi. Gorelick noted a comparative scarcity of Lycaenids at Granite Pass in the Big Horn Mts., Sheridan Co., but general collecting was very lucrative. Euphydryas a. bernadetta was among the more interesting captures which included Lyc. cupreus snowi and a fresh Lyc. nivalis browni female (Greitzer). Groothuis recorded Satyrus fuliginosus and Colias pelidne skinneri and Ferris got one specimen of Colias astraea, but the Big Horns did not produce up-to-standard collecting in spite of this. In the NE corner of the state Groothuis recorded captures of many species usually associated with the Black Hills of So. Dakota. The following were taken on a USFS road in Crook Co., near Beulah, and included Speyeria atl. lurana, Colias alexandra krauthi, Atrytone delaware logan, Parnassius ph. dakotaensis, and Coen. inornata which here seems to be closest to benjamini. Beartooth Pass produced good quantities of Oeneis taygete edwardsii, Colias meadi, (nr. elis), an interesting Boloria eunomia series and at 10,200' a series of Euphydryas editha hutchinsi alt. fm. montanus. Groothuis had good collecting on Teton Pass for Parn. clodius gallatinus, phoebus montanulus, and Speyeria hydaspe sakuntula, especially. Several collectors took Boloria titania ingens, kriemhild, Colias pelidne skinneri and Euphy. gillettii, all regarded as good catches. Conway collected near Hoback Jct.; Eff. Groothuis & Ferris in Granite Creek and the latter two around Trail's End Campground near Fremont Lake, Sublette Co. Lycaena argy. longinus was fairly common especially in the Clear Creek area above Green River Lakes where Eff took not only this but Erebia ethela in good numbers. But by far the biggest Wyoming collecting news was provided by a repeat attempt on the part of Conway and Groothuis to take Boloria napaea halli. This year, joined by Ferris and Eff, the back-packing trek to the Palmer Lake-Summit Lake area of the Bridger Wilderness Area met with near-defeat. Ferris captured one specimen...the first in 30 years since Klots discovered and named this subspecies. But Dennis Groothuis persisted and making the long and arduous hike again about 10 days later by himself, his efforts were finally rewarded. Collecting in the Bridger Wilderness Area was not nearly as good as we have expected, probably because we were a little early, but Oeneis lucilla, jutta reducta, Melitaea damoetas and Erebia magdalena were taken. Disappointing was the absence of Speyeria egleis maddunoughi. The Sierra Madres of south-central Wyo., one of the collecting hot-spots was visited by Fisher and Stanford and Eff, but produced little. The best item was Callipsyche behrii taken by Eff. Various new county records were established by both Ferris and Groothuis and will be published at a later date.

Life History. Last year Sorenson and Nordin had found the food plant of Euphy. gillettii to be Lonicera involucrata (Twinberry). This year gillettii was once again observed ovipositing on the plant. Also Ferris in Wyoming and Stanford in Colorado discovered simultaneously that the food plant of Incisalia schryverii was Sedum lanceolatum. These two collectors have joined forces and will soon be publishing their findings.

UTAH: The winter of '68-69 was very wet, but spring was dry and warm, resulting as elsewhere in early emergence and short flight periods... and a scarcity of specimens.

Records, Choice Species, Extension of Range, Relative Abundance

Callaghan and Tidwell again took Papilio rudkini in the Beaver Dam Mts., near the end of March. (This butterfly had been recorded last year by Callaghan but unfortunately was omitted by this coordinator.) Chlosyne neumoengeni was taken in Washington Co. April 12 and on April 13 Papilio multicaudatus was recorded for the earliest date of capture known. Callaghan had excellent collecting in the LaSal Mts., San Juan Co., in early June. Besides Euptychia dorothea, Euphydryas a. wheeleri and others, a new record was the capture of Hesperia pahaska martini. David Bauer and Wm. Howe spent the first half of July collecting in the Wasatch Mts., netting Speyeria n. harmonia, zerene pfoutsii, atl. wasatchia and others at mint. Males of Speyeria letona were taken only on thistles however. It was noted that the pale disc pfoutsii was prevalent at low elevations, gradually changing to platina at higher elevations. Anthocharis sara browningi was scarce and a small colony of Euphydryas a. mariae was found in Bear Canyon. Limenitis weidemeyerii was met with frequently and a few of the erratically flying Arctiid, Platyprepia virginalis were found here. The last part of the month they collected in the LaSal Mts. Here Speyeria atl. chitone was found on Mill Creek above the Pack Creek Road. A trip to 10,000' Geyser Pass found the season in this alpine area much retarded and only one Plebejus saepiolus gertschi was taken. In the lower elevations among the pinion, juniper and oak, Cercyonis dami was visiting tamarisk, but little else was to be found. One perfect pair of Speyeria cybele charlotti (more likely carpenteri?) was taken, but by far the biggest prize and surprise was a perfect male of Papilio indra minor. On alfalfa blossoms at the outskirts of the city of Moab. Occurrence of this butterfly here is further confirmed by John Emmel, who observed one for several minutes feeding on Poliomintha incana 5 miles SE of the Devils Garden in Arches Nat. Monument. He noted Lomatium parryi in quantity, a known food plant, in San Juan Co. Emmel and Shields also confirmed the occurrence of a third brood of Chlosyne acastus as they reported last year. And they added some new locality records for the much sought-after Speyeria nokomis. Three

of these are in Garfield and Washington counties, but a new and apparently large colony was located in Duchesne Co. near Mountain Home. It is interesting to note that roughly 39% of the specimens were closest to apacheana, 45% were intermediate, and 16% were nearest nokomis with the brown disc. Eff and Stanford took a few specimens of nokomis from the Vernal locality. Howe and Bauer spent one day in the Abajo Mts., San Juan Co., where Speyeria chitone was abundant. All were silvered and appeared identical to the LaSal population. Callaghan wrapped up the season by returning to the Beaver Dam Mts., Washington Co., in late August where fall broods of Celestrina pseudoargiolus, Euptychia dorothea and Limenitis bredowii eulalia were taken.

Life History. Along the Virgin River, south of St. George, Callaghan and Tidwell had collected Apodemia mormo larvae from the stems of Eriogonum inflatum in the spring. Investigation now showed that the colony had been parasitized.

COLORADO: There seems little doubt but what this was one of Colorado's poorest years. An early spring produced good collecting but early May brought the rains, and flooding. June continued in the same vein with 15 days of rain in the first 17 days of the month. The last half of the month featured poor weather with snow in the high country. Fisher, Stanford and Groothuis note the extremely dry conditions on the Western Slope and the fact that the season there was advanced by 3 or 4 weeks. Stanford notes that last year on July 24th on Rabbit Ears Pass in mediocre weather he and his wife took over 200 specimens; this year on July 27th, with perfect weather, he got just 21 specimens at the same locality! This year, for the first time, reports reflect several contradictory opinions. One report says that Papilio polyxenes was scarce in the Front Range, the next says they were common; Fisher reports E. magdalena scarce on Loveland Pass, but Jae found them abundant at the same locality. My one check of this species on Corona Pass found them in normal numbers but about 10 days later than usual. Last year Stanford found the 10-day period between June 20 and 30 the most productive for variety of species; this year it was from June 10-20. Generally speaking collectors agreed that it was a good year for skippers, but poor for others.

Records, Choice Species, Extensions of Range, Relative Abundance,

One of the more interesting records is a report of Heliconius charitonus on the Woodbine Camp property in Jarre Canyon west of Sedalia, Colo. This was a "sight" record, usually not reported but in this instance William Laspe of Denver was able to approach within 3 feet of the specimen while it was on a flower, and the shape of the wings, and color makes it unlikely that it could have been confused with any other species. Greg Forbes of San Diego, reported Lycaena nivalis abundant along the Pine River, 9 miles north of Bayfield, LaPlata Co., on August 15-20. Stanford and Fisher found it 9 miles SW of Pueblo near the St. Charles River and Fisher also took it at Rock Creek, El Paso Co. Scott found it on the Wilson Ranch in Sand Canyon, Baca Co., near the state line on June 6th. It was recorded in late May, early June and early Sept. Jim Scott and his father Glenn uncovered the first eastern slope records for Chlosyne acastus. It was found in Droney Gulch nr. the Arkansas River and at Eagle Rock, one mile west of Salida, both localities in Chaffee Co. Also one mile up Bear Creek in Fremont Co. All captures in mid-June. Stanford turned in some interesting records. In a small stand of hardwood trees along Lodgepole Creek in the town of Ovid (Sedgwick Co.) in NE Colo. he took the first state records of Polygonia comma, plus a number of interrogations which has been recorded for the state, but is always rare. He also took a single specimen of Zerene caesonia fm. rosa, and in the nearby town of Julesburg, a fresh Vanessa caryae, a possible eastern extension. Near Golden in Jefferson Co. he also record Battus philenor. Earlier in the season he had found Stinga morrisoni in numbers near Deckers, Douglas Co.. He and Fisher found a colony of Polites mystic dacotah near Westminster, Jefferson Co. and Ray also took a single specimen of Polites coras, another record. They also found Pholisora alpheus along the McElmo Creek, SW of Cortez, Montezuma Co. (May 2). Mike Fisher also took Limenitis bredowii near Gateway, Mesa Co., a northern extension and record, previous captures all having been in the extreme SW corner of the State. He took a nice series of Oarisma edwardsii at Rock Creek, El Paso Co. and found Hypaurotis crysalus fm. citima common at the Black Canyon Nat. Mon.; a single specimen of Strymon acadica coolinensis on Buffalo Pass, Routt Co., Papilio bairdii and brucei on hill tops near Cotopaxi, Fremont Co., Papilio nita on Lookout Mt, Jefferson Co., May 18th, and Amblyscirtes simius in Larimer Co. west of Ft. Collins. Another good record was Euptychia dorothea on Fall River, Mesa Co. while collecting for Papilio indra minori. Other notations from Fisher include the decline in numbers after last year's population explosion of H. crysalus and Mitoura spinetorum as reported by Ellis for the Western Slope. Fisher also took several things farther out on the plains than recorded heretofore: Glau. lygdamus oro, Pieris sisymbrii elivata and Euchloe olympia rosa about 20 miles SE of Denver, Douglas Co.. Inc. eryphon abundant in the Ponderosa forests. Hesperia ottoe was scarce but pawnee much more common in August. Minois meadii down in numbers but Lycaena arota shellbachi common, especially in the Sugar Creek area near South Platte. Jae notes that Anthocharis sara julia was common in Boulder Canyon in early May. Dornfeld invaded Colo. for the first time and collected the Crested Butte area in July, where Pieris napi macdunnoughi was quite common. No real rarities were taken, but he had several captures of note, especially Callophrys sheridanii from Kebler Pass, Plebejus argy. sublivens from Schofield Pass and Ple. acmon lutzii and Lyc. nivalis browni from the same general area. Gorelick collected the Fall River Rd. and Fall River Pass areas in the RMNP, finding Pyrgus centaureae loki rather common, and also Oeneis lucilla. Other expected captures such as P. napi macdunnoughi Erebia callias, and episodesa, Pieris occidentalis, Ple. shasta minnehaha, etc. in lesser numbers. He also collected in the Dinosaur Nat. Monument, Moffat Co. in late July and took Speyeria coronis nr. snyderi, Melitaea palla flavula, Cercyonis p. olympus, oetus charon and others, but of special interest was his note that Mitoura siva and Atlides halesus were very common on composite flowers in Mesa Verde Nat. Park. Eff found Ple. shasta minnehaha in an arid, lower altitude habitat near Kremmling, Colo. where I also took a short series of an odd Melitaea arachne. While I was collecting Boloria e. caelestis nr. timberline at the head of the Roaring Fork River on Independence Pass, Ron Wielgus was doing likewise on Lost Man Creek nearby in Pitkin Co. in mid-August. Ron also found several Speyeria including charlotti, a coronis ssp., atl. nikias and zerene sinope along Rifle Creek, north of Rifle, Garfield Co.. One of the better collecting areas in Colo. this year had to be Pagosa Spgs. where Rev. B. Rotger and O. D. Spencer took a goodly number of Speyeria carpenteri, and others. I found carpenteri on the Taylor Fk. of the Dolores River, NE of Stoner, Colo. Fisher and Stanford report the occurrence of 3 broods of Pyrgus xanthus in the South Platte River Canyon, SW of Denver. Stanford notes the unusual appearance in numbers of Aglaia antiopa, July 3rd. Ferris tried Colo. collecting in early August and declared it a complete waste of time.

Life History. Reference is to Inc. schryverii noted under Wyoming. In addition Ray Stanford has found that the food plant of Hesperia nevada is the grass... Festuca ovina.

NEW MEXICO: The only information about weather and conditions was reported by Ferris whose cousin in N. Mex. observed that the spring season was unusually dry and continued so into August. Collecting in the SW part of the state was almost nil. Ferris found the Mogollon Mts. green at higher elevations, but everything else was burned brown. The usual endemics were scarce or missing, even after the Sept. rains.

Records, Choice Species, Extensions of Range, Relative Abundance.

With one exception there seems to be no records of real note, although Papilio bairdii was taken by Funk nr. Bluewater, Valencia Co. on Sept. 14 and Holland recorded it from the Manzano Mts., Torrance Co. on July 12 & 20. Holland also notes other records of interest as

Asterocampa c. antonia from the Sandia Mts., Bernalillo Co. and Conchas Lake, San Miguel Co. in June, and Amblyscirtes osleri and Pholisora mejicana from the Manzano Mts. in July. Fisher and Stanford took fresh Sandia macfarlandi on March 29th, but Holland notes capture of this on June 26th, a very late date. Holland also collected the Magdalena Mts. intensively for the first time and sent a list of 69 species taken, indicating the relative abundance or scarcity. Noted with interest was his indication the Euptychia dorothea, rubricata, Cercyonis meadii and oetus were all taken here, all common. Ferris found Speyeria nokomis nitocris in mountain meadows in Catron Co. and Fisher and Stanford took Hesperia woodgatei near the type locality of Jemez Spgs. in the Jemez Mts., Sept. 6th. They also note Celestrina argiolus and Hesperia viridis, and the fact that H. harpalus was extremely thick throughout most of northern N. Mex. C. J. Durden, B. R. Vogel, and U. N. Lanham collected SE N. Mex. in late April. In Los Alamos Canyon, Santa Fe Co., they found Pieris sisymbrii and Mitoura siva, April 25. The Sandhills, 4 miles NE of Loving, were poor April 29 with only some Pholisora alpheus and Hemiargus isola found. Good desert collecting was had April 28 and 29 on Black River, 7 miles W. of Malaga with Melitaea dymas, elada, Phyciodes picta, phaon, tharos, Pieris protodice, Leptotes marinus, H. isola, Copaeodes aurantiaca, Ancyloxipha arene, Ambly. eos, Pholisora catullus and alpheus, Pyrgus xanthus and communis taken. The top item of interest were submitted by Bryant Mather reporting on the identification of some captures by M. E. Roshore. Two were excellent Crambid moths, Crambus cyrilellus and Thaumatopsis magificus taken at Edgewood, N. Mex. on July 12th. On the same date and at the same locality Roshore also capture the 8th. known specimen of a new and as yet undescribed Eurema.

ZONE IV: GREAT PLAINS, CANADA TO TEXAS IN THE PLAINS REGION

Coordinator: H. A. Freeman. Contributors: Conway, Doyle III, C. Durden, Ferris, H. Freeman, E. Froemel, Funk, Mrs R. Harrison, Heitzman, Howe, Johnson, Kendall, Kohler, Rickard. Coverage very spotty over general area, best in Nebraska and Texas.

GENERAL CONDITIONS: Reports variable, however most indicated that collecting in 1969 above average and some very interesting records reported.

SOUTH DAKOTA: Ferris reported collecting good in Lawrence Co. over the 4th July week-end. With following results indicated: P. glaucus near canadensis common; P. phoebus dakotaensis limited in numbers; S. mormonia at its peak; other Speyeria just coming on; E. claudia fairly abundant; the endemic P. machaon group swallowtail, gothica-hudsonianus taken along with one battered P. nitra; males of C. alexandra krauthi abundant, but females scarce; P. saepiolus abundant at mud puddles; the geometrid moth, Rheumaptera hastata, was swarming near Aspen trees. In all, 30 species taken.

NEBRASKA: Johnson reported that collecting during past season very good and complete results will soon appear in a publication on the Butterflies of Nebraska. Conway reported that in Wildcat Hills Recreation Area, Scotts Bluff Co., July 24, results poor, following collected: Colias eurytheme, Melitaea ismeria carlotta, and Cercyonis pegala ssp. At Ash Hollow State Park, Gardner Co., same day results much better, following species collected: Atalopedes campestris, Hesperia ottoe, Pholisora catullus, Pyrgus communis, Pieris protodice, Lycaides melissa, Speyeria idalia, Euptoieta claudia, and Cercyonis pegala ssp. Froemel reported that most of his collecting during past season confined to black light with fairly good results. Unusual species obtained were Catocala whitneyi, C. abbreviatella, and Telsa polyphemus. The usual Sphingidae present in good numbers. Few butterflies seen in the area. Kohler reported the following: Graphium marcellus, Barada, Richardson Co., 31 July. Colias alexandra, Crawford, Dawes Co., 24 June. Incisalia henrici henrici, Barada, Richardson Co., 2, 3, & 9 May; near Nebraska City, Otoe Co., 2 May. Strymon falacer, near Gretna, Sarpy Co., 13 & 18 June. S. acadica montanensis, Kearney, Buffalo Co., 2 July; Cozard, Dawson Co., 13 July; Valentine, Cherry Co., 15 July; Rushville, Sheridan Co., 18 July; Broadwater, Morrill Co., 19 July; Memphis, Saunders Co., 5 July; Holdredge, Phelps Co., 23 July. S. liparops aliparops, Cozard, Dawson Co., 13 July; Valentine, Cherry Co., 15 July. Feniseca tarquinius, Bellevue, Sarpy Co., 6 May, 30 June, 8 July; Louisville, Cass Co., 26 July, Aug. 15. Libythea bachmanni, Bellevue, Sarpy Co., 19 Aug. Asterocampa clyton clyton, Bellevue, Sarpy Co., 30 June. Polygonia progne, Valley, Douglas Co., 3 July. Chlosyne lacinia, Lincoln, Lancaster Co., 10 Aug. Euphydryas anicia bernadetta, Crawford, Dawes Co., 24 June. Boloria selene nebraskensis, Valley, Douglas Co., 1, 3, 8 & 21 July, 15 Aug.; Dead Timber, Dodge Co., 14 Aug. (Also reared many from eggs on cultivated violet.). B. selene, Dewey Lake, Cherry Co., 15 July; Smith Lake, Cherry Co., 5 Aug. Speyeria edwardsii, Crawford, Dawes Co., 24 June. S. idalia, near Crete, Lancaster Co., 21 & 28 June; Valley, Douglas Co., 1, 3, 8 & 21 July; Dewey Lake, Cherry Co., 15 July. Lethe eurydice possibly fumosus, Valentine, Cherry Co., 15 July; Rushville, Sheridan Dewey Lake, Cherry Co., 15 July. L. portlandia anthedon, near Gretna, Sarpy Co., 13 & 18 June; Bellevue, Sarpy Co., 30 June.

KANSAS: Howe reported 1969 season greatly improved over last 5 years. Papilio polyxenes, P. glaucus, P. cresphontes and Battus philenor out in fair to moderate numbers. In August and September numerous Phoebis sennae eubule observed in general flight. At Chippewa Hills, Franklin Co., Zerene caesia, Agraulis vanillae, Euptoieta claudia, Eurema lisa, Precis coenia and Lycaena thoe abundant. E. nicippe appeared in small numbers. Danaus plexippus common in the autumn. Vanessa cardui appeared in the spring. Anaea andria and Asterocampa celtis abundant. A formerly unrecorded sphinx moth, Protoparce albiplaga, collected, 14 August, in Ottawa by Thane Hodson. This is apparently a new United States record.

TEXAS: Mrs. Harrison reported capture of two unusual specimens at Odessa during the past year: Eunica monima Cram. on a fig leaf, 5 Aug., and Eunica tatila H.-S., on a squash vine, 4 Sept. Funk reported Atalopedes campestris going E. on U. S. Hwy. 66 just W of Shamrock, Wheeler Co., 15 Sept., at 50 mph. with a strong wind blowing toward S, a heavy migration, with counts of 14, 25, 26, 27, and 36 individuals per minute passing in front of car. Doyle reported the following: Aransas Wildlife Refuge, Aransas Co., 22 Aug., Panoquina panoquin (new state record), P. panoquinoides and P. ocola. Bexar Co., 13 July, Gesta invisus; 20 Sept., Panoquina ocola; 1 Oct., Achalarus toxus; 1 Nov., Achlyodes thraso. Cameron Co., Southmost, 13 Dec., Strymon clytie, Callophrys miserabilis; Santa Maria, Eurema boisduvaliana. Brewster Co., Marathon, 11 Aug., Apodemia palmeri. Dimmit Co., Carrizo Springs, 12 Oct., Anaea aidea and Metamorphosa s. biplagiata. Hidalgo Co., Santa Ana Reserve, 25 May, Synapte malitiosa pecta. Jeff Davis Co., 15 Aug., roadside park north Alpine, Phyciodes p. canace. Maverick Co., Normandy, 26 Oct., Asterocampa 1. cocles and Ancyloxipha arene. Presidio Co., Shafter, 12 Aug., Pyrgus albescens. Durden collected Austin region 2 Feb. to July 27, and 20 Sept. to Nov. 9; 100 spp., 1683 specimens, on 48 collecting days. WEATHER limits 5 Jan. low of 22°, 11 Aug. high of 105°, annual rainfall 3.3% above average. First half of year good; last part poorer than 1968, probably affected by short severe drought and heatwave. Relatively early hard frost made slim winter collecting. SEASON OPENERS: C. eurytheme, P. coenia, N. iole, V. atalanta, V. virginensis, P. sennae, E. nicippe on 2 Feb. Hays Co., vic. Wimberly; C. eurytheme on 7 Feb. at Austin; C. eurytheme, B. philenor on 23 Feb. Llano Co., Sandy Creek; E. nicippe, C. eurytheme, I. henrici, V. virginensis, P. communis, A. andria on 1 March SE Llano Co.; COMMONER THAN 1968: P. agarithe, E. nicippe, C. eurytheme, Z. cesonia, Cercyonis texana, P. vesta, C. nycteis, V. virginensis, P. coenia, L. astyanax, L. bachmanni, Everes texanus, C. beon, E. clarus, H. viridis. RARER THAN 1968: P. glaucus, P. sennae, E. lisa, D. plexippus, D. gilippus, E. rubricata, E. sosybia, A. vanillae, D. julia, H. charitoni (abs.), C. lacinia, V. cardui (abs.), L. archippus (abs.), A. andria, Asterocampa all spp., C. nemesis,

C. perditalis, *A. halesus*. SPECIALS: *K. lyside unicolor* (11 Oct. Burnet Co.), *T. elada ulrica* (5 & 6 Apr. Uvalde Co.), and 11 Oct. Burnet Co., *T. theona bolli* (11 Oct. Burnet Co.), *Poladryas minuta* (30 Apr. Baylor Co.), *B. exilis* (30 Apr. Baylor Co., 19 Oct. Travis Co.), *Z. cyna* (6 Apr. Uvalde Co.), *Panthiades m-album* (10, 18 May, 5, 20 July Travis Co.), *M. g. gryneus* (20 Apr. Bastrop Co.), *M. smilacis X castalis* (includes 1 mosaic gynandromorph, 3 of 114 *M. smilacis X castalis*, Travis Co.), *Cogia outis* (21 June, Travis Co.), *Pholisora mejicanus* (27 Apr. Ward Co., 12 July, Travis Co.), *G. gesta* (20 Apr. Bastrop Co.), *P. albescens*: intermediates: *P. communis* -2:5:69 (Travis Co.), *P. philetas* (21, 22, 28 June, 5 July, 28 Sept. Travis Co.), *P. oileus* (5 Apr. Uvalde Co., 15 Apr. Gonzales Co.), *S. pulverulenta* (22, 28 June, 12, 20 July, 19 Oct., Travis Co.), *C. nessus* (11 Oct. Burnet Co., 13, 19 Apr., 5 May, 22, 28 June, 5, 12 July, Travis Co.), *A. atene* (6 Apr. Uvalde Co.), *A. numitor* (20 July, Travis Co., 8 June Williamson Co.), *C. aurantiaca* (N to Baylor Co. 30 Apr.), *Copaodes* sp. (aff. but not minima) (2, 13 Apr., Travis Co.), *Amblyscirtes oslari* (30 Apr. Baylor Co.), *Meg. v. kendalli* (19 Apr. Travis Co., on white yarrow flower). Occurrence of *Pyrgus xanthus* Black R., Eddy Co., New Mexico suggests search in Culberson Co. may add to Texas list. Heitzman reported his collecting in Texas as follows: extremely dry weather in southern part of state had very bad effect on Lepidoptera populations. Two of the best collecting spots of 1968, Santa Ana Reserve and Bentsen State Park burned dry. Goose Island State Park dry and poor as most of the desirable species were scarce. A few *Heliopetes macaira* and *Pyrgus philetas* were found along with *B. philenor*, *P. cresphontes*, and *E. lisa*. Moth collecting at Lake Corpus Christi State Park good with following species collected: *Semiothisa punctolineata*, *Semiothisa cyda*, *Itame graphidaria*, *Anacamptodes defectaria*, *Chlorochamys chloroleucaria*, *C. denticularia*, *Nemoria zygotaria*. Butterflies less numerous with *Caria ino melicerta* and *Calephelis perditalis* being the most abundant. Collecting good in the Brownsville area and following collected: *C. xami*, *Pholisora* sp., *Eunica monima*, *Libythea carinenta*, *E. hegesia*, *A. maerula*, *M. petreus*, *J. coenia* (dark forms also), *M. clytie*, *C. miserabilis*, *H. ceranus*, *D. julia*, *U. procne*, *E. boisduvaliana*, *H. laviana*, *P. s. marvellina*, *E. hermes*, *C. albofasciatus*, *N. julia*, *L. dysaules*, *H. macaira*, *A. celia*, *P. vibex praeceps*, *C. stallingsi*, *L. sessilis*, *P. agarithe*, *E. nise*, *B. polydamus*, *E. g. freemani*, *S. s. sarita*, *C. beon*, *S. columella istapa*, *L. cassius*, *C. calchas*, *H. domicella*, *P. lilea*, *X. tryxus*, *A. fulgurator azul*, *A. arene*, *M. amymone*, *A. clorinde*, *P. philea*, and *U. doryssus*. Rickard reported a number of very interesting catches including a new United States record: *Strymon alea*, 9 Feb. San Patricio Co., Lake Corpus Christi State Park. *Eurema boisduvaliana*, common, July-November, Santa Maria, Cameron Co. *Eunica monima*, abundant many areas from Brownsville to Del Rio, July-August. *M. clytie*, July-Aug., common in Valley. Presidio Co. *Ascia josephina*, abundant in Valley during October. *Appias drusilla*, 18 Aug., Brownsville and 9 Nov., Mission. *T. ruptifasciatus*, 14 July, Brownsville; 24 Aug., Bentsen State Park; 19 Oct., Brownsville and Mission. *Spathilepia clonius*, 9 Nov., Mission. *Decinea percosius*, 8-9 Nov., Brownsville. *Chionides zilpa*, 25 Oct., Mission. *Vidius perigenes*, 26 Oct., Brownsville. *Aguna metophis* (Latr.), 6 Sept., Bentsen-Rio Grande Park (new United States record). *Xenophanes tryxus*, common Brownsville, July-November. *Phocides lilea*, common Brownsville, 18-19 Oct. *Euptoieta hegesia*, not uncommon, McAllen area, Oct. *Papilio a. idaeus*, 9 Nov., Mission. *Battus polydamus*, 14 July, Brownsville; 25 Oct., Mission. *Astraptes anaphus*, 8 Nov., Brownsville. Taken throughout the Valley and seen migrating in late August through Labor Day: *Marpesia petreus*, *M. chiron*, *Anteos maerula*, *A. clorinde*, *Myscelia ethusa*, and *Ageronia februa*. Kendall reported collecting in Big Bend section of the state very good, also in the Valley. Several interesting species found in the Davis Mts: *Amblyscirtes aenus*, *A. erna*, *A. nereus*, *A. texanus*, and *A. oslari*. Freeman found the usual species in fair numbers in Brownsville area during June and August. In Laredo area few butterflies observed during first and middle parts of July. Due to very dry weather during the summer few butterflies were present in the Dallas section, however spring collecting slightly above normal.

ZONE V: CENTRAL REGION – MISSOURI TO WEST VIRGINIA, NORTH TO ONTARIO. Coordinator: J. R. HEITZMAN. Contributors: R. ARNOLD, G. BLACK, R. BRACHER, P. CONWAY, C. COVELL, L. FERGE, R. GATRELLE, J. HEITZMAN, R. HENDERSON, E. KINCH, B. MATHER, E. SHULL, W. SIEKER, J. and L. WOOD, E. VOSS, J. REDMAN, M. NIELSEN.

GENERAL CONDITIONS: Dry summer weather in western section along with widespread mosquito abatement programs blamed for reduced numbers of Lepidoptera. Eastern section reported good collecting in most areas outside of large population centers. *Vanessa cardui* rare or absent over entire area after tremendous flights of 1968. A few migrations of *Danaus plexippus* reported but these not as notable as last year.

MISSOURI: Wet spring and dry summer hampered collecting in western part. A very poor year for butterflies. Summer broods reduced in numbers or absent. Moth collecting fairly good in the Ozarks. A male *Sphinx canadensis* taken 27 July, Randolph Co., county record and the third state record. In late September Heitzman and Kinch found excellent collecting near Macks Creek, Camden Co. *Colias cesonia rosa*, *Danaus plexippus*, and *Junonia coenia* abundant. Hundreds of *coenia* larvae also collected. Several specimens of *Utetheisa o. bella* and *Schinia septentrionalis*, along with one *Aellopos titan* visiting wild aster flowers. Gatrelle, near Ally Spring, Shannon Co., found *Speyeria cybele* the commonest butterfly. *B. philenor* common. *Papilio troilus* and *cresphontes* present but uncommon. *Lethe anthedon* taken 7 August, *Hesperiidae* all down in numbers, especially *Erynnis martialis*, *Thorybes confusus*, *bathyllus*, and *pylades*. Notably absent were *Anaea andria* and *Graphium marcellus*.

KENTUCKY: Reports reflect some of the best collecting in Zone V. Henderson found good to excellent collecting in Meade, Jefferson, Shelby, Oldham, Lyon, and Powell Cos., especially for skippers. Moth collecting fair with both black light and sugar bait.

STATE RECORDS: *Hesperia metea*, 26 April, Meade Co. and *Amblyscirtes aesculapius*, 9 August, Jefferson Co. Abundant summer and fall species were *Thorybes bathyllus*, *Polygonia interrogationis*, *P. comma*, *Asterocampa celtis*, and *A. clyton*. Choice species included *Anthocharis midea*, *Euptychia gemma*, *E. hermes sosybius*, *Melitaea nycteis*, *Libytheana bachmanii*, *Satyrrium edwardsii*, *Callophrys gryneus*, *C. henrici*, *Lycaena thoe*, *Feniseca tarquinius*, *Poanes hobomok*, *Hesperia leonardus*, *Autochthon cellus*, *Amblyscirtes samoset* and *Lerodea eufala*. Absent for the third straight year were *Nathalis iole*, *Calycopis cecrops* and *Euptoieta claudia*. The Woods' report good season in western Kentucky except for absence of *Papilio*s. Unusually abundant species included *Lycaena thoe*, *Limenitis archippus*, *Asterocampa clyton*, *Libytheana bachmanii*, *Adelocophala bisecta*, *Anisota rubicunda*, *Automeris io*, *Cisseps fulvicollis*, *Prionoxystus robiniae*, *Herse cingulata*, *Darapsa myron*. Choice collections were *Erebus odora*, *Sphecodina abbotti*, *Deidamia inscripta*, and *Ceratomia undulosa engeli*. Unusually scarce species were all *Papilio*, *Polygonia interrogationis*, *P. comma*, *Asterocampa celtis*, *Eurema nicippe*, *Limenitis astyanax*, *A. polyphemus*, *C. angulifera*, *C. promethia*, *E. imperialis*, *Catocala piatrix*, *Celerio lineata*, *Darapsa choerilis*, and *Pachysphinx modesta*. Species entirely missing included *Vanessa cardui*, *Eurema lisa*, *Feniseca tarquinius*, *Lycaena p. americana*, *Euptychia cymela*, *Anthocharis midea*, *H. cecropia*, *Catocala viduata*, *Manduca quinquemaculata* and *Paonias excaecatus*. Covell took *Cabera quadrifasciaria*, 29 May, at Louisville, probably a new state record; *Lycaena thoe*, 9 May, Providence, Hopkins Co., a good southern record; and *Papilio* spp., esp. *troilus*, more common than usual. Greg Florence, a 4-Her, took 2 *P. palamedes* at Woodbine, Whitley Co., possibly a state record; and Burt Monroe, Jr., reported *Euchloe olympia* and *Glaucopsyche lygdamus*, 26 April, Jenny Wiley State Park.

WEST VIRGINIA: The only report was by Mather who found 13 species of butterflies at Morgantown. Normal summer species including *Graphium marcellus*, *Papilio glaucus* and *Papilio troilus*.

IOWA: Some outbreaks of the army worm, *Pseudoletia unipuncta*, reported by Mrs. Black. In some areas late corn crops seriously damaged by

the larvae. After the tremendous numbers of Vanessa cardui in 1968 there were almost none this season. A large fall migration of Danaus plexippus observed, and a population explosion of Colias eurytheme and C. philodice in late August and September with alfalfa fields turned yellow by their numbers. Speyeria idalia extremely rare in 1969; one specimen noted by Gatrell on a thistle flower along 65 highway south of Mason City.

INDIANA: Polites mystic, 6 June, Mongo Bog, Lagrange Co., Polygonia satyrus, 25 June, Kosciusko Co. County records; Wabash Co., Erynnis icelus, 6 May; Nastra Iherminier, 3 July; Lephelisca borealis, dozens in July; Poanes massasoit, 26 July. Nymphalis antiopa common all over the state after several years of scarcity. Vanessa virginianensis common in Wabash and Kosciusko Cos. late April to late September. Species noticeably absent were Vanessa cardui, Speyeria aphrodite, Eurema lisa and Satyrus acadica. Lephelisca muticum abundant in Mongo Bog, Lagrange Co., 2 August. Lethe eurydice up in numbers. Scarce species were Polygonia progne, 25 August, Kosciusko Co. (one only); Speyeria idalia, 30 June, Wabash Co. (one); Eurystrymon ontario, 23 June, Kosciusko Co. (uncommon). Other choice captures were Erynnis lucilius, Euphyes dion, E. conspicua, Hesperia leonardus, Boloria s. myrina, hybrid Limenitis arthemis X astyanax and Eacles imperialis. Sphingidae and Saturniidae were well represented again this year. Bracher observed greater variety of butterflies in Granger area but most species uncommon. Papilio troilus quite common as was the first brood of P. glaucus; form turnus was absent this year. P.p. asterias reappeared after several years absence. Eurema lisa more numerous than in previous years. A thin migration of D. plexippus noted in late August along entire length of Indiana toll road from Ohio border to Illinois. No swarms but numerous individuals flying low, north to south. C. promethia cocoons found to be 80% parasitized.

ILLINOIS: Arnold considers 1969 the poorest ever experienced for Lepidoptera with all species down in numbers except for D. plexippus. Conway found the season about normal but rainy weather hindered collecting. A marked increase among marsh associated species. Euphyes conspicua, Atrytone deleware, Problema byssus, Lycaena p. americana, L. thoe, and L. x. dione taken in greater than normal numbers. One interesting collecting area was Goose Lake Prairie in Grundy Co. This large tract of virgin prairie contains many interesting species including Lethe eurydice, Boloria s. myrina, and Lycaena p. americana.

OHIO: Redman reports Callophrys henrici, 20 April; Lephelisca borealis, 29 June; and Boloria toddi, 26 July, all from Germantown; 14 Nymphalis milberti taken 21 September near Dayton.

MICHIGAN: Voss noted Carterocephalus palaemon in northern Lower Michigan near the Straits of Mackinac, the first record in over 20 years. Thymelicus lineola continues to spread over northern Michigan. A late cold spring resulted in later than usual dates for moths in June and July. Conway found good collecting in Barage and Ontonagon Counties 30 May. C. palaemon fresh and common, Celastrina argiolus and Papilio g. canadensis both fresh and common. Qeneis chryxus strigulosa (Baraga Co.), and Pieris virginianensis (Ontonagon Co.) fresh and common. Scarce species were Callophrys augustinus, C. nippon clarki, Lycaena p. americana, Strymon melinus, and Polygonia faunus. Collecting good 15 June at Yankee Springs state recreation area, Barry Co., with 15 species taken. Most numerous were Poanes hobomok, Polites mystic, L.p. americana, Boloria s. myrina, and Euptychia cymela. Other species included Papilio troilus, Thorybes bathyllus, and Lethe eurydice. Nielsen turned in his usual excellent report covering collecting conditions and many interesting and unique records. Winter colder than normal, spring very dry with many grass fires throughout southern Michigan. Summer temperatures above normal with average rainfall. Flight periods about normal.

STATE RECORD: Mocis texana, several collected by Dale Cospers, 16 June in Berrien Co. Other interesting and unique records: Erynnis lucilius, 24 May, and Pyrgus centaureae, one by R. Holzman, 24 May, both Alpena Co. records. Euphyes dion and E. conspicua both 26 July for Shiawassee Co. records. Thymelicus lineola taken by J. Newman from Luce and Chippewa Counties for new records, also extremely abundant in Otsego Co., 19 July to 2 August. Hesperia leonardus, common in Otsego, Monroe, and Allegan Cos., also collected in Schoolcraft Co. Lephelisca muticum, several in Shiawassee Co. for new county record. Lycaena dorcas, new county records are Delta and Shiawassee. Qeneis jutta ascerta in fair numbers in Schoolcraft Co. bogs, 19-21 June. Reared on cotton-grass sedge from the bog to 3rd instar larvae by September. Sphinx canadensis, two specimens at UV light in Otsego and Schoolcraft Cos. Sphinx lucitosa, several pupae from larvae reared on willow by Warczynski emerged in June. Cynthia inopinatus, larvae found on butterfly weed in Barry Co. for new county record. Larvae determined by J. P. Donahue. Apatela lanceolaria, one taken 20 June in Schoolcraft Co. for county record. Euxoa sinelinea, several at UV and fireweed flowers in Schoolcraft Co. for county record. Polia cristifera, one at UV, Schoolcraft Co. record. Oligia includens, one at UV, 4 July Lenawee Co. record and second state record. Papaipema appassionate, reared from pitcher plants in Alpena County for new county record. Exyra rolandiana, larvae found in pitcher plants in Alpena, Barry and Montcalm Counties for new county records. Syngrapha alias, S. octoscripta, S. rectangula and S. selecta, several from fireweed flowers at dusk along edge of Schoolcraft Co. bogs, 2-6 August. Cissusa spadix, one taken by Dale Cospers in Berrien Co., 16 June, county record and second state record. Anticarsia gemmatilis numerous at UV and building lights in October in Ingham and Lenawee Cos. for new county records, reported by J. Donahue and J. Newman. Magusa orbifera, 3 October at UV by Newman for a Lenawee Co. record. Heterocampa subrotata, two fresh males at UV, 3 July in Lenawee Co.

WISCONSIN: Sieker took a male Sphinx lucitosa near Baileys Harbor, Door Co., the first specimen of this species after collecting this locality for 40 years. Some choice Catocala species were collected. C. abbreviatella and C. meskei in Sauk Co. and C. semirelecta in Door Co. In the latter part of the season collecting good for Noctuids, Geometrids, and Notodontids, also many species of microlepidoptera taken. Ferge reporting primarily for Marathon Co. found collecting fairly good. Epargyreus clarus was very abundant 8 June, Callophrys nippon clarki locally common 7 May in stands of Pinus banksiana. Pieris napi extremely abundant locally in Lincoln Co., 4 May and 30 June at mud puddles. Polygonia interrogationis and Vanessa cardui absent. V. virginianensis, D. plexippus (two only), F. tarquinius, and L. astyanax rare, E. olympia not uncommon locally. Catocala common, especially antinymphe. Also present were C. briseis, ilia, concupens, parta, relicta, ultronia, and grynea. E. imperialis taken 26 July. Brephos infans common 13 April. Sphingidae numbers average with 13 species collected including Sphinx kalmiae, S. drupiferarum, and Darapsa versicolor.

ZONE VI: SOUTHEAST: ARKANSAS, LOUISIANA, TENNESSEE, MISSISSIPPI, ALABAMA, FLORIDA, GEORGIA, SOUTH CAROLINA, NORTH CAROLINA, VIRGINIA.

Coordinator: Bryant Mather. Contributors: R. Arnold, R. Jae, R. Gatrell, B. Mather, (with data from W. Martin, W. Luke, & G. Strickland), B. Boscoe (data from C. Curtis), G. Shaley, R. May, J. Mitchell, L. Paullissen, R. Heitzman, D. West.

ARKANSAS: Martin took 20 spp. at Henrico Plantation, Snow Lake, Desha Co. (no previous report from this area known): L. accius, S. mazans hayhurstii, E. clarus, C. Philodice, L. astyanax, P. tharos, H. cingulata, X. tersa, T. ni-brasscae, P. includens, P. rufimargo, A. gemmatilis, P. asopialis, T. amaturaria, S. gnophosaria, A. defectaria, and P. transversata.

Paullissen reported late spring in NW Arkansas, with relatively few storms and little rain. July hot; August unusually pleasant; fall not unusual.

Dry spells in July and September. Lack of tornados and spring storms may have accounted for general absence of migratory butterflies. A. vanillae and V. cardui very scarce and E. mexicana and funeralis completely absent. P. s. eubule produced a large local brood; and D. Plexippus present as usual. Local spp. in fair to good numbers. Outstanding captures in Washington Co. were male and female G. lygdamus, a new county record, and only third county in state. Also, a colony of E. Phaeton ozarkae discovered. Unusual spp. included female yellow P. glaucus and male lucia-like C. argiolus. P. cressphontes appeared in greater numbers than before recorded, esp. in August. Two new state records of Sphingids recorded: S. kalmiae by R. Heitzman, and A. fadus by Paulissen, both in Washington Co. Other choice Sphingids included A. nessus and S. abbottii, also five P. juanita reared from over-wintering pupae. A pair each of E. odora and T. zenobia taken at store lights, also Catocalas and Sphingids in fair to good numbers. Arctiids and Saturniids at low levels. Haploa spp. in exceptional abundance, for instance, H. clymene. Schinias very few. Heitzman took Cerura scolopendrina (det. Riotte), unusual for this area. Also Nemoria mimosaria, N. rubrifrontaria and Ch. tepperaria, all in Washington Co.

MISSISSIPPI: Three spp. of butterflies added in 1969 to list of those known in the state, bringing the total to 131. They were M. yuccae, R. Strickland, Pipes Lake recreational Area, Homochitto Nat. Forest, Adams Co., 20 March (det. Roever); a female of P. byssus, Bryson, State College, Oktibbeha Co., 30 July (1968) (det. Heitzman), and B. pseudofea, Kargosien, Bay St. Louis, Hancock Co. (summer of 1968). Kergosien also supplied first positive record for Mississippi of yellow female P. glaucus, Bay St. Louis (summer of 1968). Mather, G. Strickland, R. Strickland and W. Luke, vicinity of Fort Adams, Wilkinson Co., 24-25 May and 11-12 Oct. took 170 and 282 spec. from area before little collected. These included second record for Mississippi of Eurythra phasma, Natchez, 24 May; a series of 14 males and 19 females of P. texana seminole, prev. known in state by single specimen, Fort Adams, 11 Oct. (A female, Clinton, Miss., 20 May, 1963 was among paratypes of Nemoria saturiba Freg., desc. in his revision of Geometrinae, Yale, 1969). A specimen taken at Jackson, 5 Sep. '65 was det. by R. W. Hodges as Walshia exemplata, new for Mississippi).

ALABAMA: Arnold, 2 mi. N. of Reform, Pickens, Co., last wk of July, found collecting very good; took only the summer brood of P. troilus and obtained a slight record of E. nicippe to supplement previously reported data.

FLORIDA: Jae, August, found Marpesia Petreus common; took Anaea floridalis (2) in Everglades; a few Lim. archippus floridensis, Pap. Palamedes common, also P. Philenor and glaucus. Gatrell regarded collecting in Pensacola as down, comp. with '68; four spp. found in '68 not seen in '69 (H. meskei, A. d. alabamiae, A. halesus, and H. c. antibubastus); following were more numerous in '69: cecrops, G. marcellus, P. cressphontes, C. eurytheme, L. a. watsoni, and L. astyanax; following were at same level: L. virginensis, S. melinus, P. coenia, P. interrogationis, A. andria, D. plexippus, A. vanillae. The following were down in numbers: E. cymela, E. h. sosybia, E. areolata, C. pegala, P. tharos, B. philenor, P. p. asterius, P. palamedes. He also took Dahana atripennis, rearing one from larva on Spanish moss. Between 9-13 June, in area from Miami south, he found P. sennae, A. monuste, H. c. tuckeri very common; A. dursilla and P. agarithe common on the keys. D. g. berenice locally common W. of Miami; D. juba rather scarce, found on keys; A. jatrophae common in Everglades; A. vanillae not common; M. petreus common at Matheson Hammock; Eunica tahla common at Plantation Key; P. phaon, L. cassius and H. thomasi common on lower keys; L. archippus, E. zestos locally common at Royal Palm Park where P. syrictus was also found. P. cressphontes not common; P. palamedes less common. May made observations at following localities between 26 Nov. and 10 Dec: Ocala (O) 26; Cypress Gardens (C) 27; Lake Wales (W) 28; Sanibel Id. (S) 30, 1; Naples (N) 2, 3; Everglades Nat. Pk. (E) 4, 5, 6; Loxahatchee N. W. Refuge (L) 7; Daytona Beach (D) 8; and Tomoka State Park 10. He recorded: P. sennae (O, C, W, S, E, D, T), E. h. sosyba (O, W, E, D,), E. nicippe (O), E. lisa (O,W), N. iole (O), O. proteus (O,C,W,S,E,T), D. plexippus (C,S,E), P. glaucus (C), H. charitonius (W,E), A. vanillae (W,S,E,T), P. 1. coenia (W,N,E,L,T), P. philenor (W), P. polydamus (L), A. jatrophae (S,N), D. gilippus (S,N,E,L), H. thomasi (S), P. agarithe (S,N,D), A. monuste (S,E), P. tharos (E,T), L. archippus (E), A. floridalis (E), P. communis (E), H. ceraunus (T), Syntomeida epilais (E).

NORTH CAROLINA: Boscoe and Curtis, 11 to 19 July, in Graham and Swain Cos., saw several S. diana females, one taken in Natchala Gorge. E. clarus very abundant, six noted at lights, also one S. falacer. Most larger moths present in smaller numbers than previously. Sphingids included C. jasminearum (3), C. amyntor (1), C. undulosa (1), A. plebeia (2), S. kalmiae (2), L. coniferarum (1), S. jamaicensis (1) (the only new sp. for the area comp. with prev. yrs.), P. excaecata (1), C. juglandis (6), P. satellitia (8), A. versicolor (2), A. myron (2), and D. pholus (1). Fourteen spp. prev. recorded in the area not found in 1969. Also taken were C. angulifera (2), A. luna (1), I. polyphemus (1), A. io (2), A. stigma (12), A. rubicunda (2), C. regalis (1), C. sepulchralis (9), E. imperialis (1), A. vittata (12), and E. deflorata (1). Sepulchralis more numerous than in previous years, others less numerous, and some spp. not taken. No new Catocala recorded and 14 spp. previously found were not taken. The records and comments follow: C. epione, less common than prior to 1964; C. serena, C. judith, large decrease in abundance; C. flebilis abundant as in 1962 but not other years; C. residua, C. sappho (twice as many as in former years), C. dejecta, population dropping back to "normal", C. lachrymosa, normal; C. paleogama (has not been common since 1960), C. nebulosa (first since 1962), C. neogana, C. ilia, C. gracilis, returning to normal, C. andromedae, less abundant, C. herodias, C. coccinata, C. miranda, first since 1960, C. ultrona, C. grynea, C. praeclara, C. blandula, C. micronympha, returning to normal, C. connubialis, C. amica, scarce since 1960, E. nubilis, scarce, E. elonympha.

VIRGINIA: Mitchell, Montgomery Co., all spp. found in 1968 were found again in '69 and the following: E. laeta, 27 Apr., I. irus, 2 May, S. titus mopsus, 3 July, S. liparops, strigosa, 1 July. J. coenia, absent in '68, common in '69; G. lygdamus nittangensis one record, 68, common '69. Believes laeta and irus records may be new county records. He took 2 Thymelicus lineola in late June. Straley collected in several counties from the mountains to the coastal plain, and reported the following Henry County records: Hesperia metea, Incisalia niphon and Staphylus mazans hayhurstii, 5 specimens (This is 200 miles west of the nearest record for this species, the first record outside the coastal plain.) Late June in the Green Valley area of Giles County collecting was excellent. Twenty-seven species of butterflies were taken one day, June 29. Collecting in Virginia Beach and adjacent areas in late summer and fall was very good yielding the choice Euphyes dukesi, E. dion, Poanes yehl (common), P. viator, Lephelisca virginensis, and Atlides halesus. Nocturnals abundant around lights at 4-H camp on Smith Mountain Lake, Franklin County, June 8-13. Levin and West collected in Giles and Montgomery Cos., Virginia, in spring and summer: Battus philenor unusually scarce in summers of 1968 and 1969. Compare with 1966 data where 108 specimens were taken at Godwin's Ferry (Giles County) in one afternoon. Levin collected only 7 philenor (1 female and 6 males) spending some 40 days in the field (1969). Papilio glaucus: 1969 populations down over 1968. About 75% drop in numbers as estimated from samples of females. Papilio troilus: very common in 1968 and 1969. Papilio polyxenes: unusually abundant in 1968 and 1969 as compared with previous years. Papilio cressphontes: unusually abundant. On August 8, 1969, observed 30-40 in field of swamp milkweed. In 1967 and 1968 observed only 2 or 3 specimens for entire summer. West noted that the data on relative abundance in the philenor mimetic complex are of value in ecological genetics and evolutionary studies.

GEORGIA: J. Carter, Vicinity of Atlanta, took Amblyscirtes samoset, A. vialis, Atrytonopsis hianna, Poanes hobomok pocahontas, Problema

byssus, Lerema accius, Autochton cellus, Papilio aristodemus ponceanus (1), Anthocharis genutia, Mitoura gryneus, (and one aberration), Incisalia nippon, Strymon titus mopsus, S. edwardsii, S. falacer, Asterocampa clyton, A. celtis, Melitaea ismeria, M. nycteis, Lethe portlandia, Euptychia gemma.

ZONE VII: NORTHEAST: PENNSYLVANIA to LABRADOR.

Coordinator: L. P. Grey. Contributors: W. Boscoe, P. Catling, G. Ehle, J. Holmes, M. Israel, R. May, C. Majka, M. Okolowicz, D. Schweitzer, A. Shapiro, R. Smith, L. Taggart, P. Ward.

QUEBEC: Reporting for Gaspesian Park region: Mt. Albert, a male P. brevicauda, July 12, at 2,000 ft. in open forest. The mountaintop Oeneis and skipper endemics were taken by Catling and by Grey and Weber who climbed on the 17th. An uneasy feeling remains that Mt. Albert still is only half-explored, and now an even larger enigma is shaping up: Brower got in to Mt. Jacques Cartier, in season, many years ago, and failed to locate any resident alpine butterflies. Since Catling's July 17 visit this year was equally fruitless, what are we to conclude? We must not let this huge distributional incongruity pass unnoticed! Already the theory spinners are hard at work, the best hypothesis being that the serpentine rocks on Albert provide a more suitable ecology for arctic species than is true for the granites on Cartier. Vegetational changes on Albert, we now see, are obvious and dramatic at the granite-serpentine contact lines. Space is taken to mention this because it might well prove to be of importance to collectors who probably soon will be exploring new access roads opening into Quebec hinterlands. Cherchez les serpentes!

NEW BRUNSWICK: Majka reported Polygonia low, L. eurydice and portlandia high. E. laeta, central Albert Co., (this on May 27, 1966). A new Province record claimed for A. numitor, which was having a big year in Maine and Nova Scotia, thus not surprising that Majka found it in York, Garleton and Victoria Cos. T. pylades and C. interior high.

NOVA SCOTIA: Ward reports the sympatry of five species of Incisalia on heath barrens at Gold River, Lunenburg Co., May and early June, comprising the "usual" augustinus and nippon, and the local polios, with henrici as a bonus, and lanoraieensis as an exciting new record! Of the latter, one of the dates is utterly astonishing: a male, April 27! A series of S. melinus, June 1-7 (leg. F. Scott, K. Neil, R. Edsall), also at Gold River, this species very rare and erratic in the upper Northeast zone. Arzama diffusa, Truro, July 14 (probably a new Province record), and Syngrapha microgamma on Prospect Rd. bog, Halifax Co., June 26, always a fine catch. Two general observations of interest: The vic. Halifax lineola skipper population still strong and spreading. Melanis Semiothisa and Eupithecia turing up at u-v in environments suggesting an industrial melanism factor. Ward acknowledges help from friends, viz, R., J. and G. Edsall, and K. Neil, whose records are lumped with his, above.

MAINE: Schweitzer took Pap. inquaesita commonly in Sept. in the Camden area. And a schinia nudina male Aug. 29. Catocala poor but better than in '68. Diurnals dismal, a couple N. j-album taken in bait traps. Taggart collecting in coastal southern Maine, Sebago Lake and Westbrook regions, observed Ctenucha virginica swarming this year, as was noted by several other observers in this Zone. Also, he located a colony of P. interrogationis and confirms that E. cymela is well-established in the Westbrook area. Tremendous outbreaks of the satin moth, especially on lands in the Millinocket-Katahdin region which have grown into poplar after disastrous fires of the 30's. Hundreds of acres entirely defoliated by early July. Mt. Katahdin, incidentally, put on a rare, rare show, over the Fourth weekend, a warm, sunny, cloudless day! Eichlin, Kiel and Grey fought their way through swarms of Oeneis. A note of alarm: The Lee-Springfield (Penobscot Co.) topotype area for Lyc. dorcas claytoni is far gone; the Potentilla stands have been mostly destroyed (a variety of agencies). Migrants low in Maine this year as elsewhere, in general a dull normal year. Erosion of butterflies continues, hardly noteworthy any more. The bewildering thing is that Maine, still largely wooded and rural, should be hit so severely. We miss Brower's usual contribution to the records of these population declines: he summered in Churchill, Man., and later in Hawaii and gathered extensive anthropological notes (Eskimos vs. hula girls).

NEW HAMPSHIRE: Okolowicz filed accounts of diurnals (mostly common sp.) observed in various localities: B. titania montinus down at 3800-3900 ft., Mt. Washington, Aug. 3, near Hermit Lake, is worth citation. (This species is a denizen of the scrub zone and often strays below it). Also, the concentration of B. selene which he encountered in ski runs at Mt. Sunapee State Park, Aug. 11 (10-20 individuals per sq. yd.!) is the most dense swarm of this species to be reported in recent years. Lennox found it in comparable numbers in the 40's, in the No. Conn. Lakes region. Results of the extended survey Anthony made this year of the Mt. Washington semidea will be published elsewhere. It is suggestive of localized separate "colonies". How little we know about the dynamics of populations! H. Laurentina taken in Colebrook area and collectors interested in this northern skipper can procure it in August, on goldenrod, in the No. N.H. hill country. Collectors also should know about Jefferson Notch, one of the highest to which a car can be driven in the Northeast.

MASSACHUSETTS: Holmes, reporting for Essex Co., Rockport area, found all migratory butterflies low. High: native swallowtails and theclines. He has filed a list of local moth captures noted as rare in his area. Samples: A. versicolor, July 20-31; Cryptocala acadiensis, July 21-Aug. 3; Schinia marginata, Aug. 5; Dolba hylaeus, June 30; Argyrostromis anilis, July 5; Cerura scolopendrina, July 29 at Dunstable.

RHODE ISLAND: Okolowicz remarks on E. lisa being absent this year after the big migration in '68. V. virginensis also much less common although building up a bit late in the season. The lineola skipper well established practically throughout, flies mid to late June. A specimen of the "pallida" form taken June 21 at W. Barrington.

CONNECTICUT: Okolowicz notes A. celtis, July 4, on a hilltop near Norfork, and A. lyciades July 6 in a weedpatch near Falls Village. A colony of I. irus on a dry hill near Pomfret, observed for the past 3 years, seems to be diminishing. Only one taken, June 7.

NEW YORK: Israel reports a colony of P. viator at Kings Point, L. I., late July-mid Aug. Okolowicz, in Taconic State Park, Dutchess Co., found a great abundance of E. phaeton, July 2. Also sympatric were large numbers of L. eurydice, the phaeton all fresh, the eurydice both fresh and worn, going by. A colony of L. thoe was sampled here July 2-6; the second brood (Sept.) was not found despite visit at appropriate time. Shapiro's report is extensive. In general, an "unpleasant season", with species delayed in spring and ending earlier in autumn as compared to '68 collecting. Records extend from January (P. vernata and A. pometaria, to late November (S. bicolorago).

MIGRATIONS: An intrusion of P. coenia, Oct. 7-11. A flight of S. melinus in mid-Aug. (N. B.: There are grounds for suspicion that melinus migrated northward this year in considerable numbers). The monarchs and vannesids notably low, here and almost everywhere.

STRAYS: H. phylaeus, Newfield, Oct. 11, second county record; Syssaura puber, So. Lansing, Sept. 25; Anticarsia gemmatilis, Ithaca, Oct. 14; E. nicippe, Inlet Valley, May 20. Among species reported "up" special mention goes to the Spring Azure, small spring brood but huge concentrations in late July: 50 taken in 30 minutes in a population estimated at 1,000, South Hill, July 31. Among the "downs", Shapiro avers obvious damage to Colias in alfalfa fields sprayed for weevil control. A specimen of the "fasciata" form of L. phlaeus, new record for Steuben Co., Aug. 14, at Painted Post. This report condensed but like the others is available on loan to specialists and area students. Mention here seems essential for his capture of a bilateral gynandromorph P. rapae, Sept. 18, Cayuga Inlet Valley. Also, H. leonardus, a few pairs seen in room-sized openings in pitch-pine barrens, South Hill; G. lygdamus ssp., Sixmile Creek; and, of course, the E. laeta record: a fresh female April 26, Mt. Pleasant, another seen May 1, habitat being a second-growth beech-hemlock forest, along a logging road; the foregoing all Tompkins Co.

NEW JERSEY: Schweitzer's notes include records of S. hayhursti taken at Higbys Beach, Cape May, by Ted Lis, in June and again in late Aug.; not uncommon; definitely a colony here. For the Burlington Co. pine barrens, Schweitzer, collecting mostly vic. Batsto and Weekstown, found Ulolonche culea swarming at light, late May, early June. Also, less commonly, U. modesta. Oncocnemis perscripta, June, uncommon. Lithophane patefacta, found in all areas in good numbers, Mar.-Apr. and Oct.-Nov. L. viridipallens, none before Nov. 7, 6 specimens thereafter, at bait, other Cucculinae very common in the fall. Catocala herodias: 4 fresh females at light July 4, Over a mile from any Quercus ilicifolia although both Q. stellata and marilandica nearby. General collecting he says was good to excellent all season, even during the rains. At Batsto bogs, N. J., temperature was 32° F., despite which moths were flying, a number to lights and some Nolidae on bait. A worn female of the "summer form" of P. interrogationis was taken in a bait trap at Batsto, Nov. 7. Also, 3 examples of Orthodes oviduca were obtained in Oct.-Nov.

EARLIER STAGES: Lithophane laticinerea: larva found on black oak matched Forbes's description; died in aestivation. L. patefacta reared on Prunus serotina. Olene pini (plagiota) reared on all sps. of pine, older larvae also will accept and continue to grow on spruce. O. aridensis will eat wild cherry but always took oak when both offered. Olene "atomaria" (obliqua in Forbes): 1 larva found on black oak in May, also reared ex ova on oaks and wild cherry, the parent female rubbed beyond recognition, the offspring normal. Experiments with Sphinx gordius ex ova: larvae refused apple, three Rubus sp., grape and Rosa ssp.; took blueberry and huckleberry in preference to anything else but also took Myrica and Azalea sp. freely, birch not so freely. Larvae hatched before July 10 matured in late Sept. but most of them failed to pupate. H. maja was found on oak and reared on cherry, 10 male and 1 female pupae secured. Some Datana larvae found on B. populifolia produced adults which match specimens and descriptions of the heath-feeding D. major! Perhaps these are aberrant D. drexelii? Attempts to mate the F1 were unsuccessful. Some undetermined Datana larvae found on Leucothoe racemosa are now in pupae. Shapiro has located a (presumably introduced) colony of Plebejus acmon, at Camden, and promises to watch it closely and publish more on it later. May observed a local "explosion" of S. acadica in the Hatfield swamp, 21 seen including 9 at once on a clump of milkweed (sounds like some sort of a record for this erratic and usually rare hairstreak). Less beautiful was the gypsy moth outbreak he reported he observed in the Morristown region. Moth records considered choice include: B. infans, 3 in Hatfield Swamp, late Mar.-early Apr; an A. nessus from Morris Co., Pine Brook Bridge; 1 C. juglandis at Caldwell, mid-July; D. inscriptum at Roseland, early May; H. clymene, Franklin Lakes, Aug. 2, first seen in 10 years; Cat. innubens, Aug. 8., the latter being May's first record for the species. Monarchs were away down, also Papilio.

EARLIER STAGES: A few N. antiopa found on willow, all parasitized. A "brown inchworm with four long tentacles on its back" was confined and produced a specimen of Ania limbata, emerging June 18. A swarm of collectors (Dr. and Mrs. dos Passos, Lemmer, Muller and Grey) sampled the swarming lineola at Lakehurst, June 15; numerous "pallida" were taken.

PENNSYLVANIA: Ehle, in Lancaster Co. expresses disappointment that the upward trend noted in butterflies after the disastrous dry years, had a set-back in '69 despite ample moisture and spells of favorable weather. Incisalia and Erynnis dipped, Strymon continued scarce, monarchs very few, even the "pest" species not abundant. One exception was H. sassacus, never very common, which was frequent and early (one record female taken in April!). Another was E. cymela, abundant over an unusually long flight period. For diurnals, it was a mixed bag, this year, perhaps the only safe and glaring correlation being in the scarcity of most migrants and the buildup in E. cymela. A short report from Boscoe and Curtis, of diurnals in Montgomery Co., follows Ehle's quite closely although more species are noted as abundant or high: P. rapae, P. tharos, E. cymela, L. phlaeus, E. comyntas and both Colias sp. A new Montgomery Co. record: A. lineola extremely common, North Wales, in June. Schweitzer's notes for Strafford Co. include a striking observation: Heavy rainstorms (nearly 16 in. in June-July) were prevalent but beginning around July 21 P. rapae flew abundantly even on the rainy days. Schweitzer has some fine moth records: T. alurnia, Mch.-Apr., for the 3rd consecutive year; C. spadix, a worn specimen at light May 7 (one was caught nearby in April of '64). This he suggests may be an important capture, raising the question if this normally Southwestern species may not breed in Penna. A. anna, on June 20, new for eastern Penna. C. angulifera seemed even commoner this year, the other saturnians being low but promethia and cecropia coming back. Considerable disease noted among reared and wild larvae. A fresh, melanic E. hortaria was taken Sept. 29, latest date ever seen. A distressingly poor year for Catocala, but lucetta and judith taken for the first time. Sphingids better than normal but still scarce.

EARLIER STAGES: P. myops ova found on Prunus serotina, reared to eclosion. On this same foodplant lithophane grotei ova found and 1 adult obtained. Added notes: A female Sphinx luscitiosa was taken in Greene Co. at a gas station, by C. H. Myers, early Aug. A fresh male Heliothis phloxiphaga taken by Ted Lis in a meadow at Valley Forge Park, late July.

RECORDS OF MATING TIMES: L. unipuncta: 8:20 A. M., black light trap. O. hibisci: 11:00 P. M., early Apr., black light. E. vinulenta: 7:20 P. M., bait trap. These all Strafford. Other matings: L. phlaeus, 2 prs. on Jun. 26, hazy day, Newtown Square, and 1 pr. Jun. 27, all between 3:20 and 3:30 P. M. P. asterius observed mated at 12:30 P. M., broke up at 1:05; female is the carrier. Schweitzer adds that Eupsilia, Graptolitha and canker worm moths have been active in Feb. 1970, although no collecting done as yet.

MARYLAND: Smith's report for Baltimore and Harford Counties is one of the few secured in recent years. Some good catches, e.g., A. celtis common in late June and again in late Aug. around hackberry nr. Baldwin; colonies of bolorians and of the Baltimore butterfly located. E. zarucco taken at Rock Creek State Park, July 13. M. gryneus in red cedar grove at Phoenix, late April.

ZONE VIII: THE FAR NORTH. Coordinator: Kenelm W. Philip. Contributors: A. Brower, James Ebner, John Legge, K. Philip (and the following collecting for Philip: R. Beach, W. Berry, C. Fahl, D. Klein, M. Marchall, W. Mills, E. and K. and M. and P. Pyne, R. Rausch, D. Roseneau, and R. Weeden) and Walter Phillips.

NORTHERN MANITOBA: Brower and Ebner report from Churchill, and both note that the season was delayed (between 1 and 3 weeks, according to Brower). Brower arrived 22 June, but found no appreciable collecting until 8 July. Ebner's material was taken 15-25 July.

Butterflies: (Brower and/or Ebner) Pyrgus centaureae, Pieris napi, Colias hecla, C. gigantea, C. palaeno, C. nastes moina, Plebejus aquilo, Boloria frigga saga, B. polaris, B. freija, B. chariclea (and B. chariclea/titania), B. eunomia dawsoni, B. e. tricularis, Oeneis taygete, O. jutta, O. melissa assimilis, O. polixenes, Erebia rossii ornata, E. theano canadensis. Brower notes that most species were scarce, except Colias nastes (hard to capture, as usual!), Boloria polaris, Oeneis taygete, O. polixenes.

Moths: (Brower) Parasemia parthenos, Agrotiphenos, Agrotiphila churchillensis, Agrotimorpha staudingeri (this and the preceding species associated with Hedysarum mackenzii), Lasionycta subdita, Sympistis zetterstedti labradoris (common), other Sympistis, Holarctias sentinaria, Aspilates sp., Phlyctaenia inquinatalis, Crambus browerellus, C. trichostomus, Polopeustis arctirilla, Olethreutes sps., Tortrix moeschleriana, Cnephasia niveosana, and a variety of common species. One new tortricid taken and reared.

NORTHWEST TERRITORIES: Ebner received material from Baker Lake, taken 8 July to 15 August. The species recorded are: Colias hecla hecla, C. boothii, C. palaeno chippewa, C. nastes subarctica, Lycaena phlaeas feildeni, Boloria napaea, B. frigga, B. improba, B. polaris, B. chariclea hectica, B. eunomia tricularis, Oeneis taygete, O. melissa assimilis, O. polixenes, Erebia rossii rossii, E. fasciata. Ebner reports that the season was much delayed.

YUKON TERRITORY: Ebner received material from Haines Junction and Mayo Lake. One range extension is reported: Parnassius thor from SW of Haines Junction, the farthest south that this species has been found. From the mountains SW of Haines Junction, 20 June to 5 July, species recorded are: Parnassius eversmanni thor, P. phoebus yukonensis, Papilio machaon aliaska, P. glaucus canadensis, Pieris napi pseudobryoniae, Colias hecla, C. philodice vitabunda, C. alexandra christina, C. pelidne, C. palaeno, C. nastes aliaska, Euchloe (creusa?), undetermined blues, Euphydryas anicia helvia, Boloria napaea, B. improba, B. polaris, B. eunomia, Speyeria mormonia opis, Coenonympha mixturata (yukonensis), Oeneis chryxus, O. polixenes, Erebia rossii gabrieli, E. youngi, E. theano alaskensis. At Mayo Lake the season was early, with good weather, but heavy smoke from forest fires interfered with collecting. For the period 10 May to 27 July, species recorded are: Erynnis persius avinoffi, Parnassius eversmanni thor, Papilio machaon aliaska, P. glaucus canadensis, Pieris protodice occidentalis, P. napi, Colias hecla, C. philodice vitabunda, C. palaeno chippewa, Euchloe creusa/ausonides, Lycaena dorcas, Lycaeides argyrognomon, Plebejus optilete, Glaucopsyche lygdamus, Celastrina argiolus, Polygona faunus, Boloria napaea, B. frigga, B. improba, B. freija, B. chariclea/titania, Coenonympha mixturata (yukonensis), Oeneis melissa, O. polixenes, Erebia disa mancinus, E. discoidalis.

ALASKA: Ebner, Legge, Philip (and his collectors) and Phillips report from various parts of Alaska. For this and future reports the state will be broken down into major physiographic divisions (see USGS paper 482, Wahrhaftig) as a (hopefully) biologically relevant way of organizing data from this area.

Range extensions: A range extension for Boloria distincta was reported by Legge, who found a colony on Eagle Summit in mid-June. This is 200 miles south of any previous Alaskan locality for this species (although not totally unexpected in view of Ebner's SE Yukon Territory records). It begins to look as if B. distincta may have a much wider distribution than was originally thought. (Note: the Coordinator requests that collectors exercise reasonable restraint with regard to the Eagle Summit colony until more is known about the abundance of B. distincta in the Yukon-Tanana Upland. This is the only known colony of this species that is conveniently accessible for biological study - do not destroy it!) Extension of the range of Erebia youngi to include the Seward Peninsula, rather than "... central eastern Alaska" (Ehrlich and Ehrlich) should be noted here, since, this fact does not seem to have been mentioned in previous Summaries. The record given below is not, however, the first for this species for Nome. Two specimens of Euchloe creusa (det. Paul Opler) were taken 24 and 30 May at Eagle Creek, near Eagle Summit, at 2700 ft., by Weeden. The only previous records for E. creusa from interior Alaska were from Eagle, 130 miles to the east. The Euchloe that Ebner records from Nome is a major range extension whether it turns out to be creusa or ausonides. A single specimen of the Arctiid Paractia subnebulosa was taken at Camp Denali, near Kantishna, just north of McKinley Park, 2000-2500 ft., 14 June, by P. Pyne. This species had so far been recorded only from coastal areas in Alaska (although there was one inland record from Markovo, eastern Siberia).

New Collecting Spots: Sledge Island, off the Seward Peninsula, supports an exceedingly large population of Parnassius phoebus golovinus, although this species was only seldom seen on the adjacent mainland. Owing to the recent oil discovery on the North Slope, the state is about to construct an all-weather gravel road from Fairbanks to Prudhoe Bay on the Arctic Ocean. This road, which may be ready in 1972, will be open to the public; and will make the Kikrine-Hodzana Highlands (an essentially uncollected area north of the Yukon river), the Brooks Range and the Arctic Coastal Plain accessible to anyone who can afford the trip to Fairbanks. Road construction progress bulletins will be issued in future Summaries.

Arctic Coastal Plain: Carter Creek, east of Collinson Point (C), 18 June (Mills); Point Barrow (B), late June (Berry). Both localities are generally low moist tundra, except that the town of Point Barrow is on a gravel bar. The species recorded are: Papilio machaon aliaska (C), Gynaephora rossi (B) ex pupa 21 June.

Franklin and Romanzoff Mountains (east Brooks Range): Lake Schrader (S), 2800 ft., 4 and 22 July (Klein and/or Mills; McCall Glacier (M), 5650-6100 ft., 10 and 16 July (Fahl). Locality (M) is on the ice of the glacier, specimens presumed blown up from lower elevations. (S) is moist tundra. The weather in this region was unusually poor during July and August, producing a very small yield of specimens. The species recorded are: Butterflies: Colias boothii (S), C. palaeno (M), Boloria napaea (S), B. chariclea (S), Oeneis bore (S), Erebia rossii (S). Moths: Epipsilamorphia alaskae (M), Psychomorpha prob. suttoni (M), Syngrapha divergens (M), Clepsis moeschleriana (S).

Seward Peninsula: Nome and vicinity (N, where no letter, N is understood), 0-1250 ft., 27 May to 10 August (Ebner and/or Roseneau); Sledge Island, 5 miles off shore about 20 miles W of Nome (I), 6 July, (Rausch); Serpentine Hot Springs, northern Seward Peninsula (S), 11 June (Roseneau). Locality (N) is mixed moist and dry tundra and willow brush. Localities (I) and (S) are moist and dry tundra.

Butterflies: Parnassius eversmanni, P. phoebus golovinus (N,I), Papilio machaon aliaska, Pieris protodice occidentalis, P. napi, Colias hecla, C. palaeno, Euchloe (creusa?), Plebejus optilete, Boloria napaea, B. frigga (N,S), B. polaris, B. freija, B. chariclea, B. eunomia, Coenonympha mixturata, Oeneis melissa, Erebia rossii, E. disa steckeri, E. magdalena, E. youngi.

Moths: Lygris destinata, Heterusia topazata, Xanthorhoe algidata, Aspilates forbesi, unidentified zygaenid.

Yukon-Tanana Upland: Fairbanks and vicinity (F), 600-1300 ft., 8 April to 31 July; Upper Birch Creek, mile 90 Steese Highway (U), 2300 ft., 28 June and 6 July; Ester Dome and Cleary Summit, about 12 miles W and 20 miles N of Fairbanks respectively (Es), 2200-2400 ft.,

20 May to 12 July; Murphy Dome, about 20 miles NW of Fairbanks (M), 2700-2800 ft., 14 and 22 June; Eagle Summit and vicinity (E), 2700-4000 ft., 24 May to 15 June, 28 June, 6 July. All localities collected by Philip, (E) also by Weeden (24 May - 15 June) and Legge (28 June and unspecified date mid-June), (U) by Legge (same dates). The season was early, with good weather but severe interference from forest fire smoke through mid-summer. August was very cold and rainy. The species recorded are: Butterflies: Hesperia manitoba (F), Carterocephalus palaemon (F), Erynnis persius (F,M), Parnassius eversmanni (E), Papilio machaon alaska (Es, M, E), P. glaucus (F), Pieris protodice (Es), P. napi (F, U, M, E), Colias hecla (M,E), C. philodice (Es,M), C. gigantea (F), C. palaeno (F,Es,M,E), C. nastes (E), Euchloe creusa (E), E. ausonides (F), Incisalia augustinus (F), I. polios (F), Lycaena dorcas (F), Lycaeides argyrognomon (Es), Plebejus saepiolus (F), P. optilete (F,U,Es), Glaucopsyche lygdamus (F,Es,M), Celastrina argiolus (F,Es,M,E), Limnitis arthemis (F,Es), Nymphalis antiopa (F,Es), Polygonia faunus (F), P. gracilis (F), Phyciodes campestris (F), Boloria napaea (E), B. frigga (F,M), B. improba (E), B. polaris (Es,M,E), B. freija (F,Es), B. distincta (E), B. titania (F), B. chariclea (F,U,Es,M,E), B. eunomia (F), Coenonympha mixturata (F,U), Oeneis taygete (U,Es,M,E), O. jutta (F,m,e), O. melissa (M), O. polixenes (F,E), Erebia rossii (E), E. disa (F), E. magdalena (E), E. fasciata (M,E), E. discoidalis (F,M,E), E. theano (U), E. youngi (E), E. epipsodea (F). Hesperia manitoba, Boloria polaris, B. chariclea, Oeneis jutta, O. polixenes below timberline, and Erebia disa appear confirmed as odd-year species in the Fairbanks-Eagle Summit area. Papilio glaucus was very scarce this year.

Moths: Hemaris thysbe (F), Parasemia plantaginis (F), Alypia langtoni (Es), Epipsilamorphia alaskae (E), Anarta cordigera (F), sympistis melaleuca (Es,E), S. zetterstedti (E), Polychrisia moneta trabea (F), Caenurgina crassiuscula (F), Brephos infans (F), Cosymbia pendulinaria (Es), Carsia paludata (F), Heterusia topazata (F), Epirrhoe sperryi (F), Xanthorhoe luctuata obductata (E), Deilephila borealis (F), Isturgia truncataria (F), Itame fulvaria (F,Es,E), I. nr. anataria (Es), Aspilates taylori (F), Crambus innotatellus (F), C. trichostomus (E), Platyptilia petrodactyla (E), Argyroproce inquietana (E), Aethes nr. deutschiana (E), Martyrhilda sp. (F), Adela purpurea (F).

Life Histories: Philip reared Polygonia gracilis from Goldstream valley, near Fairbanks, on Ribes triste and Ribes glandulosum; and Papilio machaon alaska from Ester Dome and Murphy Dome on Artemisia arctica. One P. machaon ovum was found on A. arctica and reared, showing that this plant, in addition to being an acceptable foodplant, is actually so used in the wild.

Alaska Range and Northern Foothills: Big Delta River, near Black Rapids (B), 2000 ft., 16 July; Savage River, McKinley Park (S), 2600-3000 ft., 17 July; Toklat River, McKinley Park (T), 3100 ft., 17 July; Highway Pass, McKinley Park (H), 4000-4400 ft., 17 and 19 July (all the preceding Philip); Stony Creek, near Thorofare Pass, McKinley Park (Tp), 3000-4000 ft., 16-17 June; Kantishna and vicinity (K), 1750-3800 ft., 6 June to 6 July (these two E., K., and P. Pyne); and Wonder Lake. McKinley Park (W), 2000-2400 ft., 21 June (E., K., M., and P. Pyne) and 18 July (Philip). Localities (B) and (S) are near timberline, (K), runs from just below to 1800 feet above timberline, (T), and (W) are nominally above timberline but contain patches of scrub willow and aspen, while (H) and (Tp) are above timberline, dry and moist tundra. Species recorded are: Butterflies: Hesperia manitoba (K), Parnassius eversmanni (Tp,K), P. phoebus alaskaensis (H,K), Papilio machaon alaska (Tp,K,W), Pieris protodice (K), P. napi (S,Tp,K,W), Colias hecla (H,K), C. boothii (Tp), C. philodice (B,S,T,K), C. palaeno (S,H,K), C. nastes (T,K), Lycaena phlaeas (T), Lycaeides argyrognomon (B), Plebejus optilete (K), P. aquilo (H), Glaucopsyche lygdamus (K), Boloria napaea (S,H,K,T), B. polaris (Tp,K), B. chariclea (S,H,K,W), B. eunomia (H), Coenonympha mixturata (S,K), Oeneis bore (Tp,K), O. jutta (K), O. melissa (H,Tp), O. polixenes (Tp), Erebia rossii (W), E. disa (K), E. magdalena (Tp), E. theano (H,K,Tp), E. youngi (H,K,Tp).

Moths: Pararctia subnebulosa (K), Arctia caja opulenta (K), Epipsilamorphia alaskae (K), Anarta richardsoni (H), Syngrapha octoscripta epsilon (W,H), Dysstroma nr. walkerata (K), Xanthorhoe ferrugata (K), Dasyuris polata (H), Eulype subhastata (K), Isturgia truncataria (K), Itame fulvarie (W,K), I. nr. anataria (W,K,S), Aspilates taylori (K), A. forbesi (H), Selenia alciphearia (K), Aphania nr. capreana (K).

Clearwater Mountains (S side of Alaska Range, E of McKinley Park): Maclaren River (R), 2900-3200 ft, 16 July; Maclaren Summit, 3900-4700 ft., 16 July (both Philip). Both localities are on the Denali Highway (mile 32-46) and are above timberline, dry tundra with occasional wet grassy flats. The species recorded are: Butterflies: Colias hecla (R,S), C. palaeno (R,S), Boloria napaea (S), B. chariclea (S), Coenonympha mixturata (S).
Moths: Pachnobia tecta (S), Syngrapha octoscripta epsilon (R), Lygris destinata (S).

Upper Matanuska Valley and Copper River Lowland: Palmer (P), 50-2000 ft., 28 May to 12 July (Phillips); Index Lake, mile 95 Glenn Highway (I), 1700 ft., 30 May (Phillips); Mile 57 Richardson Highway (T), 1400 ft., 5 July (Marshall).

Species recorded are: Carterocephalus palaemon (P), Erynnis persius (I), Papilio machaon alaska (P,I), Pieris protodice (I), P. napi (P), Colias hecla (P,I), C. philodice (P,I), C. gigantea (P,R), Euchloe ausonides (I), Plebejus saepiolus (P,I), Evers amyntula (P,I), Glaucopsyche lygdamus (I), Nymphalis antiopa (P), N. milberti (P), Polygonia faunus (P), Oeneis jutta (I), Erebia disa (I), E. discoidalis (P).

Kenai-Chugach Mountains: Lazy Mountain, near Palmer (L), 2000-3700 ft., 19-30 June (Phillips); Russian River Campground, E of Soldatna (R), 400 ft., 3 June (Beach); Tikel River, mile 57 Richardson Highway (T), 1300 ft., 5 July (Marshall). The species recorded are: Parnassius phoebus alaskaensis (L), Papilio machaon alaska (L), P. glaucus (R), Colias philodice (T), C. palaeno (L), C. nastes (L), Lycaeides argyrognomon (L), Plebejus saepiolus (T), P. optilete (L), Boloria polaris (L), B. frigga (L), B. chariclea (L), Speyeria mormonia nr. opis (L,T), Coenonympha mixturata (L), Oeneis bore (L), O. polixenes (L), Erebia theano (L).

Note: The determinations above of Oeneis taygete and O. bore within Alaska are exceedingly shaky. For practical purposes, it might be better to consider all these as just Oeneis taygete/bore until the material is examined by a specialist.....

Moths: Crambus nr. dumetellus/whitmerellus (T).

Note: All determinations of moths in the Alaska sections above are by D. C. Ferguson, U. S. National Museum.

ZONE IX: THE NORTHERN NEOTROPICS:

Coordinator: Eduardo Welling, M. Contributors: E. Welling M., William Noew, David Schwehr, Ralph Wells, James Mori, R. Wind.

The outstanding feature of 1969 was the extreme climatic chaos throughout the region, especially in the southern part. It was one of the stormiest seasons on record, Northers were numerous and dry from November to April, and after the rains, continuous deluges, large areas flooded, roads out; then tornados with large hailstones, followed by three hurricanes and with extreme heat — even during rainstorms.

MEXICO:

BAJA CALIFORNIA SUR: Wells at Miraflores and Los Barriles in the extreme southern part of the peninsula during March. Besides the widespread lowland tropical Pieridae, he found a Libytheana sp., Anaea aidea, Myscelia sp., Euptoieta hegesia, Phyciodes texana.

Leptotes cassius, an Apodemia probably or near palmeri, Strymon leda and festata, Papilio philenor and several widespread skippers.

SONORA: Mori, Nogales to Querobabi, Guaymas, Bahia San Carlos, Alamos, Navojoa, to the Sinaloa border during September. Vegetation was lush north of Guaymas and inland toward the mountains near Alamos. Pieridae were seen in immense numbers, Lycaenidae conspicuously absent. Interesting records were Asterocampa celtis, Anaea aidea, Myscelia sp., Hamadryas feronia, Apodemia palmeri, Strymon melinus, Eurema boisduvaliana, Microtia dymas and elva, Papilio cresphontes. Myscelia were possible migrating from west to east at about 15-20 specimens per mile of roadway.

SINALOA: Mori, Sonora border to Mazatlan on the coast and inland on the road to Durango up to 1,200 m. above sea level, during September. In the north he took an Anaea (near glycerium??), Heliconius charitonius, Adelpha fessonia, etc. Further south common Pieridae dominated, besides Victorina steneles and most above mentioned species for Sonora. In the mountains toward Durango, vegetation very lush, with great clouds of butterflies everywhere, including Battus polydamas, belus (coordinator's note: I cannot verify this record and it seems too far north for the sp., but is possible). Several other sps. of Battus, Papilio near anchisiades if not that, thoas, Hamadryas feronia and sp., widespread Pierids, Dismorphia "melite", and Pyrrhopyge araxes.

VERACRUZ: Howe and Schwehr near Fortin de las Flores during late August. Between rains each collected over 1000 specimens, identified only about 1/4, the most common ones. They took Victorina steneles, Athena chiron, Smyrna karwinskii, Mestra amymone, Chloryne janais, Callicore anna, Hypanartia lethe, Adelpha fessonia, Dismorphia "melite", Phoebis neocypris, Morpho sp. (probably peleides), etc. By contrast moths were sadly lacking in quantity. One day in Orizaba found Papilio astyalus, thoas, polyxenes, Eurema proterpia and Anteos maerula.

OAXACA: Season began late due to lack of rain during June and July; many species down in numbers from 1968.

CHIAPAS (R. Wind). Flights. A most interesting flight of butterflies occurred through the San Cristobal Valley, lasting three days, July 26-28. It passed over the entire four-mile width of the valley, heading southeast. It was made up of at least 23 species captured and noted; possibly others were involved. The flight was heaviest each day from 11 to 1, during which times there were 1,000 to 1,200 individuals passing any given point per hour. The vast numbers passing the width of the valley per hour can hardly be imagined! The species captured and the approximate percentage of each in the flight was as follows: Papilio multicaudata 1%, Pieris protodice 1%, P. kueschei 10%, Anteos maerula 5%, A. clorinde 3%, Phoebis sennae 5%, P. agarithe 2%, P. phileo 2%, Eurema mexicana 20%, E. proterpia 2%, E. perimede 10%, Nathalis iole 1%, Actinota leucomelas 2%, Eunica monima 20%, Marpesia chiron 1%, M. petreus 1%, Adelpha sp. 1%, Vanessa carye 2%, Nymphalis antiopa 3%, Euptoieta claudia 3%, Dryas julia 1%, Agraulis vanillae 2%, Urbanus sp. 2%. A flight of Eurania fulgens lasting from the middle of September to the middle of October, heading southeast was observed throughout central Chiapas and southern Vera Cruz, not heavy but about 100 per hour passing a given point, mostly from sunup to 11 a.m.

NEW RECORDS FOR MEXICO: As far as known the following have not before been reported from Mexico: Automeris (Leucanella) contempta new ssp., Rothschildia erycina, Citeronia lotesis, Copiopteryx semiramis ssp., Rhescynthis hippodamia morax, Paradomonia andensis Dirphelia albofasciata.

Collecting in central Chiapas in a triangle from the San Cristobal las Casas to Ocoцинco and Comitán yielded the following:

MOTHS: 64 species of Saturniidae including the new records above and such unusual spp. as: Metosamia godmani, Automeris cecrops, A. iris, A. montezuma escalantei, Coloradia euphrosyne, Eacles masoni, E. ormondei, E. magnifica, Arsenuras championi, Thysania agrippina, T. zenobia and what appears to be a new sp. of Thysania; 72 spp. of Sphingidae including such rarities as Cocytius lucifer, Adhemarius donysa, A. globifer, Nyceryx riscus and Pholus elisa.

BUTTERFLIES: 25 spp. of Papilionidae including Battus philenor acauda, Papilio polyxenes americanus, P. pilumnus, P. abderus electryon, Graphium marchandi, G. lacandonea; 41 spp. of Peiridae including Dismorphia praxinoe, lunce, fortunata, nemesis and jethys; 82 spp. of Nymphalidae including Chlosyne marina, Adelpha bredowii, Sidronea memesis, Anaea excellana; 22 spp. of Danaidae; 26 spp. of Satyridae; 27 spp. of Erycinidae; 65 spp. of Lycaenidae including a new Mitoura; and 102 spp. of Hesperidae including a very odd and interesting Megathymus; a total of 299 spp. of butterflies.

BRITISH HONDURAS:

STANN CREEK DISTRICT: During late January and early February, 1970, Welling, because of rains at Middlesex found almost nothing.

Memoirs of the Lepidopterists' Society, Number 1 (Feb. 1964)
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Cyril F. dos Passos

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Membership in The Lepidopterists' Society is open to all persons interested in any aspect of Lepidopterology. Prospective members should send the Treasurer the full dues for the current year (\$8.00 U.S.A.) together with full address and special Lepidopterological interests. Remittances in dollars (U.S.A.) should be made payable to The Lepidopterists' Society. Individual members will receive the JOURNAL (published quarterly) and the NEWS (published eight times a year). Institutional memberships will receive only the Journal. A biennial membership list will also be received. Back issues of the Journal may be obtained from the Treasurer. Information on membership in the Society may be obtained from the Treasurer, Stanley S. Nicolay, 1500 Wakefield Drive, Virginia Beach, Va, 23455 U.S.A. Changes of address should be sent to the Treasurer. Please DO NOT send requests for membership or change of address to the Editors of the NEWS or JOURNAL.

Other information about the Society may be obtained from the Secretary, Dr. John C. Downey, Department of Biology, University of Northern Iowa, Cedar Falls, Iowa, 50613, U.S.A.

Manuscripts for formal publication in the JOURNAL should be sent to the Editor of the JOURNAL, Dr. J. A. Powell, 201 Agriculture Hall, University of California, Berkeley, Cal., 94720, U.S.A.

Items for inclusion in the NEWS should be sent to the Editor of the NEWS, E. J. Newcomer, 1509 Summitview, Yakima, Wash., 98902, U.S.A.

Please (UP-DATE, CHANGE, REVISE, ADD) my name in the 1970 membership list to be issued this fall as indicated below.

*Please print or type and mail to J. C. Downey, Biology Department
University of Northern Iowa
Cedar Falls, Iowa, U. S. A. 50613*

Name _____ Title _____
(LAST - FIRST - MIDDLE) (PROF. - DR. - MR. MISS - etc.)

Address _____
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My Special Interests are:

☐ All Lepidoptera ☐ Rhopalocera ☐ Macro-Heterocera ☐ Micro-Lepidoptera

Special families or genera _____

Life history, parasites, other _____

☐ Collect ☐ Exchange ☐ Buy ☐ Sell