



NEWS

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Season Summary 1992

NEWS
FROM
EUROPE
W. O. De Prins



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Plus, in this issue.... *New Additions to Endangered Species List* *Endangered Status for three foreign butterflies* *The Morality of Collecting: Who Cares and Why?* *4th of July butterfly count* *News From Europe* *A Visual Aid to the Incisalia irus Discussion Observations* *Techniques* *and More.*

The Editor received many reports that did not include data as per "Instructions to Contributors" [NEWS #5, 1992; pg 90]. Because of space limitations, many species lacking full data were not included in this Summary.

ZONE 1: THE FAR NORTH: ALASKA, YUKON/NORTHWEST TERRITORIES. Coordinator: Kenelm W. Philip (KWP)

Contributors: Henry Hensel (HH), Alan Royer (AR), James Troubridge (JT), and collectors for the Alaska Lepidoptera Survey (ALS). Previously unreported localities or species are emphasized; collecting by ALS volunteers unless noted. Species names follow Lep. Soc. Memoir #3. Note regarding Alaska Lepidoptera Survey: KWP and JT spent 19-23, 25-26 Jun collecting in the southern Yukon Territory, including Nickel Crk, Burwash Crk, Lk Laberge, and Montana Mtn. Late snow in the mountains and the disastrous effects of the spring weather combined to make collecting poor or non-existent at high elevations. Lk Laberge appeared normal, however. From 1 to 15 Jul, KWP collected the highway system around Nome on the Seward Peninsula. Weather was mixed, and collecting was variable: poor for the rockslide and fellfield species but excellent for Parnassius and Papilio. Pieris napi was super-abundant, even flying all through the town of Nome.

NORTHWEST TERRITORIES (NWT). Weather: HH reports that the season was weeks late at Eskimo Pt, with 80% ice cover in Hudson Bay into the second half of Jul.

MOTHS: Arviat (Eskimo Pt, west coast of Hudson Bay north of Churchill), 22 Jul-10 Aug (HH), GEOMETRIDAE - Aspitates orciferarius, NOCTUIDAE - Polia richardsoni, Euxoa churchillensis (Austin Is.), Xestia imperita, X. quieta. All species were quite scarce.

BUTTERFLIES: Arviat (Eskimo Pt), 2 Jul-9 Aug (HH), Papilio machaon, Colias hecla, C. boothii, C. nastes, Agriades franklinii (abundant!), Clossiana polaris, C. frigga, C. improba (Austin Is.), C. chariclea, Erebia rossii, Oeneis polixenes. All species scarce, with the single exception of A. franklinii. This locality has not been reported since the 1950 SS, so I give the complete list. The following species are additions to the 1950 report: P. machaon, C. boothii, A. franklinii, C. frigga, O. polixenes. Coppermine, 26 Jun-1 Jul (AR), additional species (see 1984, 1988 SS), Everes amyntula. Pontia occidentalis common near airport. Erebia rossii, E. disa, E. fasciata and Oeneis bore abundant. Inuvik (Chuk Park, birch taiga), 23-25 Jun (AR), additional species (see 1972-3, 1980, 1987 SS), Erynnis sp. Yellowknife (Frame Lk Tr), 15-18 Jun (AR), additional species (see 1949, 1974, 1984 SS), Erynnis icelus, Incisalia augustinus, I. polia, Clossiana frieja, Vanessa cardui, Polygonia gracilis.

Both HH and AR agree that the summer offered extremely poor collecting.

YUKON TERRITORY. Weather: AR reports that the season was locally considered late, and he saw very few butterflies along the Dempster Hwy from Eagle Plains to the NWT border, 19-23 Jun.

BUTTERFLIES: Rock Rvr Territorial Cgd, mile 281 Dempster Hwy, 19-22 Jun (AR), Erynnis sp., Papilio machaon, Pieris napi, Colias hecla, Euchloe sp. (prob. creusa), Glaucopteryx lygdamus, Celastrina argiolus, Everes amyntula, Clossiana freija, Polygona gracilis, P. faunus. All species except P. napi were quite rare. Koidern Rvr, historical mile 1167 Alaska Hwy (Bear Flats Lodge), 19 Jun, Erynnis persius, Colias canadensis, C. christina, C. philodice, Lycæides idas, Glaucopteryx lygdamus, Plebejus saepiolus (abundant!), Everes amyntula, Phyciodes pratensis, Clossiana freija. This site is normally an excellent place for collecting Colias christina, but they were uncommon this summer. Nickel Crk, summit of pass at 4200', 19, 25-26 Jun, no additional species. Fresh snow about 23 Jun—collecting was possible but poor. Montana Mtn, 23 Jun, tundra at 5500'-6000' recently emerged from snow and still brown, essentially nothing flying. Lk Laberge, Yukon Hwy 2, km 222, 20-22 Jun, no additional species. Parnassius phoebus on the verge (a few seen), Euphydryas anicia very abundant.

ALASKA: Weather: Interior Alaska had a warm spell in early spring followed by heavy snow and severe cold in May. Summer thus began very late. This was a weather pattern that I have not seen in Fairbanks (since I arrived in 1965), and it was presumably responsible for the catastrophic decrease in numbers of most species of butterflies (except blues) that was observed throughout the summer in Interior Alaska and parts of the southern Yukon. I assume that the warm spell advanced the development of butterflies to the point where the following unseasonable cold caught them at a vulnerable stage. Estimated population levels for most species were 10-15% of normal, based on individuals seen and collected at a number of often-visited sites. The blues, on the other hand, were doing very well indeed! The summer also ended early, with a 20-inch snowfall and sudden cold in early Sep (which quick-froze the leaves on the trees, where they remained). What this presages for 1993 is anyone's guess... On the Seward Peninsula the early warm spell came during winter and presumably did not advance the development of butterflies, and collecting conditions were more or less normal during the summer.

The skies at sunrise and sunset had an odd coppery opalescent sheen that I have never seen before...almost certainly the dust from the eruption of Mt Pinatubo in the Philippines, 12-13 Jun. That eruption may have been a contributing factor to the unusual weather in late summer.

MOTHS: SOUTHEAST ALASKA - SPHINGIDAE - Smerinthus cerisyi, Dyea Road, near Skagway, 24 Jun. This species appears established at Skagway, but is currently not known from other Alaskan sites.

BUTTERFLIES: SEWARD PENINSULA - Pilgrim Hot Springs, 7 Jul, additional species (see 1990 SS), Colias philodice, C. palaeno. This lush, flowery site still has a surprisingly depauperate fauna. Southwest face Anvil Mtn, 5 Jul, Parnassius evermanni, Papilio machaon, Pieris napi, Colias nastes, C. palaeno, Euchloe creusa, Procllossiana eunomia, Coenonympha kodiak, Oeneis polixenes, Erebia rossii. From 1 to 15 Jul, KWP also collected the usual sites along the Teller, Kougark, Council, and Glacier roads...no additional species reported. However, at mile 28 Teller Road (Sinuk Rvr vy) there was a major flight of Parnassius phoebus from 8 to 15 Jul, nearly all males. Papilio machaon and Pieris napi were also very abundant at most sites. No individuals were seen of Pontia occidentalis, Clossiana distincta, or Erebia mackinlevensis. SOUTHEAST ALASKA - 5.4 mile Dyea Road, near Skagway, 24 Jun, Vanessa cardui.

ZONE 2: THE PACIFIC NORTHWEST: IDAHO, OREGON, WASHINGTON, BRITISH COLUMBIA.

Coordinator: Jon H. Shepard (JHS)

Contributors: Lars Crabo (LC), V. Covlin (VC), Rod Crawford (RC), C.D. Ferris (CDF), D.G. Grimble (DG), Paul Hammond (PH), John Hinchliff (JH), John Lane (JL), R.A. Long (RL), Norbert Kondla (NK), Stephanie McKown (SSM), Jon P. Pelham (JPP), Gary Pewters (GP), Robert M. Pyle (RMP), Cris Schmidt (CS), Sigrid M. Shepard (SMS). General Collecting Conditions: The spring season was extremely early in southern Idaho and Oregon (JS, CDF, SSM, JH). Further north it was also early. Though NK reports poor numbers for NE British Columbia, he records many species from many localities.

MIGRATORY SPECIES: V. cardui in numbers through ID, OR, WA & southern BC by April 28 (JHS). H. lineata arrived at Sproule Cr, BC by 5 May. Autographa californica appeared at Sproule Cr 3 May; though present suddenly in large numbers they were fresh and may have overwintered.

MOTHS: Several collectors gave records of moths for the first time. Most of these are COUNTY Records. However, the individual records are not listed. As the various parts of the Atlas of Western Moths are published we will begin to publish individual, new records in the Sea Sum. In the meantime, all such records will be welcomed by this coordinator who is working with Opler, et. al. The first part to be published will be the Saturniidae. If anyone wishes to start collecting moths, the coordinator will provide identifications!!!

IDAHO (ID): Contributors: JL & SSM. A drought (6th year) continued for southern ID. Forests and rangeland were so dry that high-risk forestfire warnings were issued by the Boise NF in early Apr!. Eventually close to 1 million acres of federal and state land were burned in wildfires in ID. Unusually high temperatures early in the year prompted sightings of Nymphalis antiopa and Aglais milberti at Boise on 18 Feb (SSM). Temperatures in the low-to-mid 70°'s were recorded at Boise in early Mar.

BUTTERFLIES: E. hyantis, T13S R2W S31, Owyhee Rvr, 28 Apr OWYHEE CO (SSM). Remainder of records are from JL and were from Kelly Cn Ski Area, MADISON CO, 12 Aug 1991. P. rutulus, E. ausonides, P. napi, L. editha, L. helloides, S. behrii, S. saepium, S. sylvinum, S. cybele, S. coronis, S. zerene, S. callippe, S. mormonia, C. palla, P. campestris, P. mylitta, N. antiopa, V. Atalanta, V. annabella, B. weidemeyerii, C. tullia ochracea, H. comma harpalus, C. sthenele ssp.

MOTHS: 45 COUNTY RECORDS reported by SSM.

OREGON (OR): Contributors: VC, CDF, DG, JH, GP, RL, JHS, SS.

BUTTERFLIES: T. diversus, LAKE CO, Kelly and Crane Crks, 30 May (JH). E. persius, Aldrich Mtn LO, GRANT CO, 2 Jun (JH). P. coras, nr Ukiah,

UMATILLA CO, 14 Jul (DG). P. sonora, nr Ukiah, UMATILLA CO, 9 Jun (DG); Ochoco NF, FR #2600/600, WHELLER CO, 22 Jun (CDF). C. interior, FR #3935, HARNEY CO, 24 Jun (CDF). C. affinis, Echo Cr Rd just of Hwy 20, LINN CO, GRANT CO, 3 Jun, (JH); Aldrich Mtn LO, 2 Jun (JH). I. mossi, T3S R34E S7, UNION CO, 26 Apr (VC). M. spinetorum, Spout Spgs Ski Area, UNION CO, 6 Jun (JHS/SMS). S. melinus, Wilson Cr nt Loeb St Pk, COOS CO, 20 May (JHS/SMS). G. lygdamus, Arbuckle Mtn, T4S R29E S31, MORROW CO, 31 May (VC). B. epithore, T7S R35E S2, GRANT CO, 18 Jun (VC). D. plexippus, Canby, CLACKAMAS CO, Aug (GP); Bandon, COOS CO, Jul and Aug (RL).

MOTHS: PH reports 170 COUNTY RECORDS of Noctuidae for UNION and UMATILLA COS that were gathered by a USFS survey prior to BT spraying. JHS collected 82 COUNTY RECORDS of Geometridae for TILLAMOOK, LINCOLN, LANE, COOS AND CURRY COS all in late May along the immediate coast.

WASHINGTON (WA): Contributor: RMP

BUTTERFLIES: All records are from RMP. C. affinis, S shore Sprague L, ADAMS CO, 27 May. E. comyntas, Le Clerc Crk, Pend Oreille Co, 26 May. E. battoides, P. saepiolus, S Shore Sprague L, ADAMS CO, 27 May. A. bredowii, Grays Rvr, Swede Park, WAHIKUM CO, 26 Jun.

MOTHS: LC reports 312 COUNTY RECORDS of Noctuidae from LC, RC & JPP. Some of the JPP records were also taken by JHS.

BRITISH COLUMBIA (BC): NK and CS collected in the Peace Rvr and nr Tumbler Ridge getting much more distributional data for NE BC. LJ continues to collect many records of moths nr Cranbrook adding species and range extensions to BC Lep fauna, the most new records in Southern BC in recent years.

BUTTERFLIES: C. pelidne, Gray Crk Pass, 15 N of Gray Crk, 2 Aug (CS).

ZONE 3: THE SOUTHWEST: ARIZONA, CALIFORNIA, NEVADA

Coordinator: Robert L. Langston (RL)

Contributors: Robert P. Allen (RPA), George T. Austin (GTA), Richard A. Bailowitz (RAB), Greg Ballmer (GB), Adrienne Boyd (AB), Bret Boyd (BrB), Bruce Boyd (BB), Jim P. Brock (JPB), Richard M. Brown (RMB), Ken Davenport (KD), Kelly A. Davidson (KAD) Thomas E. Dimock (TED), Julian P. Donahue (JPD), John F. Emmel (JFE), Clifford D. Ferris (CDF), Gregory S. Forbes (GSF), Bruce M. Griffin (BMG), Kevin G. Hinisa (KGH), Greg Kareofelas (GK), Richard V. Kelson (RVK), Ron H. Leuschner (RHL), Ron S. Lindeman (RSL), Sterling O. Mattoon (SOM), Lauritz Muehlbach (LM), Scott North (SN), John G. Pasko (JGP), Floyd & June Preston (FJP), Kelly M. Richers (KMR), Kilian Roever (KR), Patrick J. Savage (PJS), Charles A. Sekerman (CAS), Arthur M. Shapiro (AMS), Oakley Shields (OS), W. P. Sochor (WPS), Ray E. Stanford (RES), William L. Swisher (WLS), Paul M. Thompson (PMT), John B. Vernon (JBV) and Ralph E. Wells (REW).

ARIZONA (AZ): Contributors: RAB, JPB, KD, CDF, RLL, RHL, LM, KMR, RES and WLS. The 1992 season includes 25 COUNTY records for butterfly species, the vast majority in the usually uncollected western part. One USA and STATE record included with 3 COUNTY records for moths, among many records for the usually ignored families.

Well above normal rains each month, Nov 91 thru Mar 92 at Phoenix (5.63") and Tucson (5.56") encouraged early spring plant growth (WLS). Feb and Mar were unusually mild and rainy in Yavapai Co, followed by a warm and nearly rainless Apr (LM). From 4 Jan to 3 Apr a series of six El Niño storms in the Southwest brought above normal rains all across AZ to the NM border (WLS). In southeastern AZ several species were unusually common in the spring such as Pyrgus oileus, Eurema boisduvalianum, E. lisa, E. nise nelphe and Chlorostyrmn simaethis sarita. Upwards of 10 days of rain in May in Tucson allowed the spring flights of these species to continue (RAB). In western AZ it was sunny and warm in mid-May, becoming very hot (up to 105°) in Yuma and La Paz Cos on 18 May (RES). Strays (including C. s. sarita) were everywhere, resulting in 20 COUNTY records (RES). By 19 May it became mostly cloudy (RES), and Yavapai Co had the wettest May on record, while precipitation during the "monsoon" months of Jul and Aug was much less than expected (LM). By early Aug in southeastern AZ there was an unusual amount of moisture, the vegetation was extremely lush with numerous nectar sources (CDF). Many normally dry arroyos were running water, and several small flash floods were observed the week of 2 Aug (CDF).

MIGRANTS and STRAYS: Zerene cesonia & Phoebis sennae marcellina in central third of Mohave Co, 20 May (RES). Three P. agarithe seen in Tucson, Pima Co, 17 May (RES) & a few in Sycamore Cyn, Atacosa Mtns, Santa Cruz Co, 3 Aug (CDF). Vanessa cardui: Lacking the huge numbers reported from CA, this migration in Chino Vy, Yavapai Co. occupied the entire month of Apr (LM); initially on 31 Mar, conspicuous on 3 Apr, then throughout month flying NW to NNW with no correlation to wind direction (LM); peak flights on 6-7 Apr with an average 20 per minute passing in mid-afternoons; by 28 Apr numbers had diminished, and none were seen after 30 Apr in Chino Vy (LM); generally absent during summer, a few appeared 2-10 Sep and mostly worn ones 3-6 Nov, Yavapai Co (LM). Danaus plexippus: Only a single ♀, Chino Vy, Yavapai Co, 25 Apr, and no evidence of local summer breeding (LM); the autumnal migration began 9 Aug with only singles moving SW; a weak "peak" between 6-11 Sep of only about a dozen flying SW, and after a lapse of four weeks a single ♂ in Chino Vy on 11 Oct (LM).

MOTHS: SESIIDAE - Synanthedon exitiosa, Hualapai Mtn Rd, 5200', Mohave Co, 22 Aug (KMR). COSSIDAE - Comadia manfredi, Chiricahua Nat Mon Survey, various locs, Cochise Co, May/June (RHL). TORTRICIDAE - Acleris nigrolinea, Ash Cyn, Huachuca Mtns, Cochise Co, 5 Feb (RHL). GEOMETRIDAE - Itame schatzeata & Chloraspilates minima, Tucson, Pima Co, 31 Jan (RHL). Synglochis perumbraria, 3 mi W of Sentinel, Maricopa Co, 6 Aug 91 (RLL). Scoriopsis orsona (Druce) - (det RHL & D.C. Ferguson) - 1 mi S of Pena Blanca, 3960', SANTA CRUZ CO, STATE, USA & NORTH, 3 Aug 91 (KMR). Synchlora frondaria avidaria, 10 mi E of Gila Bend, Maricopa Co, 6 Aug 91 (RLL). Cyclophora dataria, Hualapai Mtn Rd, 5200', Mohave Co, 22 Aug (KMR). Hydriomena clarki, Santa Catalina Mtns at 8200', Pima Co, 2 Sep (RHL). H. gracillima, Barfoot Peak, 8000', Cochise Co, 17 Jun, 14 Jul, LATE (RHL) [First collection in 50 years? (RHL)]. Stamnodes franckata very common, Pinery Cyn, Chiricahua Mtns, Cochise Co, 4 Sep (RHL). Eupithecia kerena (verified by genitalia), Santa Catalina Mtns at 8200', PIMA CO, 2 Sep (RHL) - described from Carmel on the cold, foggy coast of CA! E. piccata & near E. pretensata, Ash Cyn, Cochise Co, 5 Sep (RHL). E. deserticola, Portal, Cochise Co, 1 Feb (RHL). SATURNIIDAE - Eacles osleri, Sycamore Cyn, Santa Cruz Co, 2-3 Aug (CDF). Hyalophora gloveri, Tex Cyn, Chiricahua Mtns, Cochise Co, 6 Aug (CDF). SPHINGIDAE - Xylophanes falco, North Fork Cyn off Pinery Cyn, Cochise Co, 7 Aug (CDF). Hyles lineata, 5 mi NNW of Lake Havasu City, 500', Mohave Co, 19 May (RES). ARCTIIDAE - Afrida n sp (not minuta), Onion Saddle, 7500', COCHISE CO, 2 Jul (RHL). Lycomorpha fulgens, Arachnis picta & Hemihyalaea labecula very common, Hualapai Mtn Rd, 5200', Mohave Co, 22 Aug (KMR). Euchaetes perlevis 10 mi E of Gila Bend, Maricopa Co, 6 Aug 91 (RLL). Grammia allectans, Barfoot Peak, 8000', Cochise Co, 1 Jul (RHL). NOCTUIDAE - Tetanolita negalis, Renia

mortalis (very, very common) & Pseudanarta viridimedia (rare), Pinery Cyn, Cochise Co, 4 Sep (RHL). Zale colorado, Hualapai Mtn Rd, 5200', Mohave Co, 22 Aug (KMR). Syngrapha montana, Sycamore Cyn, Santa Cruz Co, 2-3 Aug (CDF). Catocala hermia & C. babayaga, Chino Vy, Yavapai Co, appeared regularly from 29 Jun thru 29 Sep (LM). Orthosia flaviannula, O. annulimacula & Egira purpurea (rare), COLD nights in Ash Cyn, Cochise Co, 3-5 Feb (RHL).

BUTTERFLIES: Cogia caicus moschus, Celotes nessus & Atrytonopsis pittacus, Carrizo Crk, 5050' at US 60, NAVAJO CO, 14 May (RES). A. cestus (NORTH) & A. edwardi, 1.5 mi E of Fish Crk, Rt 88, MARICOPA CO, 7 May (JPB). Pholisora catullus, Carrizo Crk, 5050' at US 60, GILA CO, 14 May (RES). Anthocharis pima: 2.5 mi SE of Peridot on "hill 2920", GRAHAM CO, 2-3 Mar (WLS); Red Hills, 1500', 16 mi SE of Salome & US 60 on "hill 1650", LA PAZ CO, both 30 Mar (WLS) – [Already known from Mohave & Yuma Cos, but La Paz Co was formed since – RLL]. Thelypodium lasiophyllum & Descurania pinnata (Cruciferae) present at Graham & La Paz localities (WLS). A. pima larva on Caulanthus lasiophyllus (Cruciferae), Arthropod Discovery Center, Tucson Mtn Park, Pima Co, 28 Feb (JPB). Partial second brood of fresh A. sara inghami, Guadalupe Cyn, Cochise Co, late Apr-early May, LATE (RAB). Colias philodice eriphyle, Carrizo Crk, 5050', NAVAJO CO, 14 May (RES). Anteos clorinde nivifera, Sycamore Cyn, Santa Cruz Co, 27 Feb, very EARLY (RAB). Zerene cesonia & Eurema mexicanum in alfalfa field 19 mi S of Quartzsite, YUMA CO, 18 May (RES). E. mexicanum, 3 mi S of Vicksburg Jct on I-10, 1300', LA PAZ CO, 18 May (RES). E. daira lydia, San Pedro Rvr at Charleston Rd, Cochise Co, 30 Aug (RAB). Nathalis iole larvae on Dyssodia pentachaeta (Asteraceae), Sabino Cyn, 25 Apr & on Hymenothrix wrighti, Bear Cyn, 5 May – both Santa Catalina Mtns, Pima Co (JPB). Hypaurotis crysalis, Hualapai Mtn Rd at 5200', MOHAVE CO, 22 Aug (KMR). Chlorostymon simaethis sarita: Carrizo Crk, 5050' GILA CO, 14 May (RES); 19 mi S of Quartzsite, YUMA CO, 18 May (RES); 3 mi S of Vicksburg Jct, LA PAZ CO, 18 May – latter two in alfalfa fields (RES); Parker, 420' & 5 mi NNW of Lake Havasu City, 500', MOHAVE CO, 19 May (RES). Ministrymon leda, same alfalfa fields, 18 May, YUMA & LA PAZ COs (RES). A single worn ♂ Stymon columella istapa, 3 mi S of Vicksburg Jct, LA PAZ CO, 18 May (RES). Summer brood of Erora quaderna sanfordi common, hilltopping on Montezuma Peak, Cochise Co, 2 Aug (RAB). Hemiargus isola alce common at both 18 May alfalfa fields, YUMA & LA PAZ COs (RES). Icaricia acmon texana, Carrizo Crk, 5050', GILA CO, 14 May (RES). Several fresh Agraulis vanillae incarnata, Carrizo Crk at GILA/NAVAJO CO line, 14 May (RES) & fresh examples flying S toward Mexico, just the opposite of usual flights, Atascosa Mtns, Santa Cruz Co, 3 Aug (CDF). Dymasia dymas chara & Anthanassa texana, Carrizo Crk at US 60, NAVAJO CO, 14 May (RES). Nymphalis antiopa common and conspicuous in the Chino Vy area of Yavapai Co, first 21 Feb, last 13 Nov. Increase related to the proliferation of Siberian Elms (a favored host), which is heavy seeded, drought resistant and becoming a noxious weed in the expanding settled area of Chino Vy (LM). Mestra amymone: Sycamore Cyn, Santa Cruz Co, 3 Aug (CDF); beginning in Aug, amymone became increasingly common S of Tucson, Pima Co, with several dozen seen in California Gulch, SC Co, 7 Nov (RAB); larvae on Tragia laciniata (Euphorbiaceae), 5 mi SE of Patagonia, 6 Oct & California Gulch near Ruby, 8 Oct, SC Co (JPB).

CALIFORNIA (CA): Contributors: RPA, GB, JPB, RMB, KD, KAD, TED, JPD, JFE, GSF, BMG, KGH, GK, RVK, RLL, RHL, RSL, SOM, SN, JGP, FJP, KMR, KR, CAS, AMS, OS, WPS, RES, WLS, PMT, JBV and REW.

Generous rains, causing many northward strays, resulted in a 1992 RECORD of 43 COUNTY records for butterfly species!! From 19 to 31 Dec 1991 substantial rains occurred in southern CA and all desert areas (WLS). At Jerseydale, 3600', Mariposa Co, the winter was mild with very little snow, but moderate rains Feb to end of Mar (OS). From 4 Jan to 3 Apr there was a series of six El Niño storms in the Southwest which brought above normal rainfall to desert areas S of a line between Fresno, CA and Beatty NV (WLS). Adequate rains in the Bay Area Jan-Feb, to much above normal in Mar, but warmer and drying by mid-Apr (RLL). Snowmelt very early with May in the central Sierra Nevada warmer than a typical Jun (AMS). In Humboldt Co and surrounding areas the precip was only about 50% of normal, many plants drying out sooner than usual, with flight periods and larval feeding times for many species shortened (SN). Most butterflies above 4000' a full month early, but 4" of snow and sub-freezing temps above 6000', 11-15 Jun (AMS). At Jerseydale, 3.5" of rain on 12 Jul, but record heat late Jul to mid-Aug, when mostly over 100°F in Fresno and 37 straight days over 90°F in Sacramento by 18 Aug (OS). Latter half of season very dry with trees dying right and left, many plants blooming early and shutting down (AMS). After Jul little flying, autumn species early and gone (AMS). Sep very warm and dry in Jerseydale (OS). In Sep-Oct the Rabbitbrush on the E side of the Sierra Nevada almost devoid of butterflies (AMS). Very dry Merced/San Benito/Stanslaus Cos Sep-Oct, with Yellowstar Thistle and Sunflowers about the only nectar sources (RLL). The usual autumn "boom" of Colias euritheme nearly absent in north state/east side and poor in the Central Valley (AMS). By years end, heavy rains and snows, Jerseydale, 3600', 6-29 Dec (OS), and rainy, unsettled in the Bay Area, 19 Nov-31 Dec (RLL).

MIGRANTS and STRAYS: Pontia protodice: West Sacramento, Yolo Co, 1 Jan, EARLY – you can't get any earlier! (AMS); Carson Pass above 9000', Alpine Co, 23 May & Castle Peak, 9000', Nevada Co, 4 Jun, both EARLY for high alt (AMS); nr summit of Echo Peak, 8700', El Dorado Co, 3 Jul (JFE); breeding to 10,000' most of summer (AMS). Unusual NORTH dispersal Phoebus sennae marcellina during spring-summer: Garden Grove, Orange Co, 10-23 Apr – singles most days flying W, NW, S & E (WPS); Boney Mtn, 1260', Point Mugu, Ventura Co, 12 Apr (TED); migration in North Hollywood, Los Angeles Co, 15-26 Apr (CAS); nr Butterbread Peak, Kern Co, 25 Apr (JGP); Sugar Pine Lk, 27 Apr & Oakhurst, 8 Jun, both MADERA CO (KD); Jerseydale, 3600', MARIPOSA CO, 2 May (OS); Lang Crossing, 5000', 2 May & Washington, 2650', 4, 18 May, all NEVADA CO (AMS); San Bruno Mtns, San Mateo Co, 1, 5 May (RLL); many larvae on ornamental Cassia, Ventura & Santa Paula, Ventura Co, 24 Apr-14 May (TED); commonly seen in Cantil area 10 Apr to 8 Jul & common at Loraine-Caliente Crk, 29 May, 13 Jun, all Kern Co (KD); Crystal Springs Rd nr Baxter, PLACER CO, 8 May (AMS); nr Baker, San Bernardino Co, 9 May (JGP); adults common, some migrating WNW, one about every 5 min thru Santa Paula, Ventura Co, 11-14 May (TED); Hwy 89 E slope near Sagehen Crk, Nevada Co, 12 May (AMS); several on W slope of Red Mtn, San Bernardino Co, 15 May (JBV); straying into southern San Joaquin Vy Apr & May – one capture in Bakersfield, Kern Co, 22 May (KD); Hwy 50 near Pacific House, EL DORADO CO, 23 May (AMS); and the latest – a dwarf ♀, 1 mi N of Cantil, Kern Co, 5 Sep (JGP). Nymphalis californica: Hibernants appeared San Bruno Mtns, San Mateo Co, 25-28 Feb (RLL); common near Walter Spgs, Napa Co, 25 Feb, several 11 Mar & a few 18 Mar (JBV); abundant on vy floor (very odd – miles from Ceanothus hosts) in early spring – examples: Willow Slough, 1 Mar & West Sacramento, 18 Mar, both Yolo Co (AMS); Rancho Cordova, 3 Mar & North Sacramento, 18 Mar, both Sacto. Co (AMS); occasional hibernants in mid-Mar, and fresh in early May, Jerseydale, Mariposa Co (OS); common 1 mi below Letts Lk, Colusa Co, 22 May (JBV); late Sep to early Nov, occasional at mud or semi-territorial (not migrating) – no more than 4 seen on any given day all year at Jerseydale, Mariposa Co (OS). Vanessa cardui: First appeared 5 Feb, San Bruno Mtns, San Mateo Co, single-digits in Mar, common Apr, 100+ some days in May, diminishing in Jun (RLL); present in Clayton/Mt Diablo area, Contra Costa Co, starting 25 Feb, flying W or NW in large migratory flight 14-23 Apr, one/meter/min (RVK); migrating WSW averaging 10.25 per min, Piru, 700', Ventura Co, 19 Mar (TED); Yucca Vy to Lucerne Vy, 10/min flying N, plus LV to Barstow, 37-40 per half mi over 2 mi stretch, flying W, San Bernardino Co, 26 March (PMT); by the gazillions on the vy floor – initially 4 Feb, Davis, Yolo Co, then mass movements from 31 Mar thru mid-Jun (AMS); Garden Grove, Orange Co, 17 March over 900 in 2.75 hrs across 50' front, but on 18 Mar only 8 counted (WPS); territorial and flying until 6 pm on 1 Apr, Ventura, 180' – migration continued thru Apr and made the television news, with some still migrating 12 May (TED); Garden Grove, Orange Co, 2 Apr, 562 in one hour across 40' front flying NNW to N (WPS); Dan Cook Cyn, Mt Diablo, flying W, 1.5/meter/ min, 14 April & San Ramon, flying N, 1.5/meter/min, 20 Apr, Contra Costa Co (KGH); peak 13-20 Apr, on 19 Apr in West Sacramento estimated one per second all afternoon flying NNW (AMS); Jerseydale and vicinity had almost daily NNW-NW migrations 6 Apr-22 May, light to moderate – heaviest 21 Apr (25-33/min) and 4 May (9-13 min); Heavy migrations at Modesto, Stanislaus Co, 21 Apr & Vallejo, Solano Co, 23 Apr (OS) abundant 1 mi W of Gibson, Shasta Co, 20, 23 Apr (JBV); over 200 fresh Buttonwillow area, 23 Apr (RLL), but badly worn, Hwy 178 over Walker Pass, Kern Co, 24 Apr (RLL); worn adults in the Clayton/Mt Diablo area to at least 13 May, fresh adults 4 May – hosts: Lupinus succulentus & Carduus pycnocephalus (RVK); many hundreds flying NW down

W slope of Red Mtn, San Bernardino Co, 15 May (JBV); fresh and common 10 mi W of Stonyford & to 8 mi up Goat Mtn Rd off Lodoga Rd, Colusa Co, 22 May (JBV); dozens seen Mammoth Mtn at 11,000', HIGH, Mono Co, 23 Jul (PMT); extremely light return flight in the autumn at Jerseydale, Mariposa Co (OS); breeding all summer in the Central Vy, with first southward migration noted at Davis, Yolo Co, 9 Aug and continuing thru early Nov (AMS). *Danaus plexippus*: Singleton worn flybacks, San Bruno Mtns, San Mateo Co, 24 Feb to 8 May (RLL); several observed in spring in Napa Co, 11 Mar & Colusa Co 22 May (JBV); Kellog Beach, 7 Jun (FJP fide RES), 2nd for Del Norte Co as Paul Opler saw one once; fresh adults only in single-digits observed in San Mateo Co, 2 Jun & Contra Costa Co, 12 June (RLL); the numbers migrating to the coast in Sep-Oct the lowest in recent years and in striking contrast to 1991 (AMS); unusually scarce in 1992 at Jerseydale, practically none seen in Sep-Oct (OS); a single ♂ noted in Contra Costa Co, 7 Sep, then only a few late Sep to 12 Nov (RLL).

MOTHS: **HEPIALIDAE** - *Hepialus californicus*, 12 Mar & *H. hectoides*, 20 Mar, San Bruno Mtns, San Mateo Co (RLL). **COSSIDAE** - *Prionoxystus robinae*, Bakersfield, 360', very common in Apr - unusual, rarely seen here previously (KMR). **PYRALIDAE** - *Chalcoela iphitalis*, 26 Apr, 5 May & *Amyelois transitella*, 2, 5 May, Bakersfield (KMR). **GEOMETRIDAE** - *Semiothisa colorata*, Bakersfield, Kern Co, 6 May (KMR). *Glaucina escaria* common, I-15 Rest Area NE of Yermo, S Bdn Co, 24 Apr (RLL). The rare *Hydriomena ruberata pallula*, Bishop Crk Lodge, 8500', Inyo Co, 5 Jun (KMR). **SATURNIIDAE** - *Hemileuca hera* abundant & *H. nuttalli* scarce, 1 mi E of Monitor Pass, 8300', Alpine Co, 1 Aug (RMB, Samantha Brown). Freshly emerged male *Saturnia mendocino*, Jerseydale, 3600', Mariposa Co, 28 Feb, EARLY (OS). *Hyalophora euryalis*, San Bruno Mtns, 1200', San Mateo Co, 24 Feb, somewhat early (RLL) & Mt Pinos Rd at 7480', Kern Co, 18 Jul, very LATE (KMR). **SPHINGIDAE** - *Hemaris diffinis*, North Hollywood, Los Angeles Co, 9 Jul, unusual in residential area (CAS). **ARCTIDAE** - A good colony of *Platyrepia virginialis*, Iowa Hill Rd 3 mi S of Colfax, Placer Co, late May-early Jun (AMS). *Cteneucha multifaria*, slopes above Carmel Highlands, Monterey Co, 14, 21 Jul (RLL). **NOCTUIDAE** - *Mycterophora rubricans*, Mt Pinos Rd at 7480', Kern Co, 18 Jul (KMR). The diurnal *Alypia mariposa* (AGARISTINAE), Rt 178 at Canebreke Crk, 24 Apr (RLL) & Rt 178 at mile 55, 2220', 1 May, Kern Co (KMR). *Fala ptychophora*, NE of Yermo & abundant at I-15 Rest Area W of Cima Rd Jct, San Bernardino Co, 24 Apr (RLL). *Annaphila abdita*, San Bruno Mtns, San Mateo Co, 10 Jan, EARLY (RLL), *Oxycnemis fusimacula*, *Oncocnemis fasciata* very common & *O. ciliata*, Utah Tr 4 mi S of Rt 62, S. Bdn Co, Apr 16 (KMR). *Trichocosmia inornata*, NE of Yermo, S. Bdn Co, 24 Apr (RLL). *Admetovis similis*, Bakersfield, 360', 14 Apr (KMR). *Euxoa pluralis*, Bishop Crk Lodge, 8500', Inyo Co, 5 Jun (KMR). *Schinia triolata*, *S. amaryllis* & *S. pulchripennis*, 4 mi above Aguanga, 2500', Riverside Co, 13 Apr (RHL) - Types of *amaryllis* were 1891, and this differs from the "amaryllis" that Chris Henne & RHL took in Lake Co decades ago. *S. niveicosta*, I-15 NE of Yermo, S. Bdn Co, 24 Apr (RLL).

BUTTERFLIES: *Epargyreus clarus californicus*, Sugar Pine, MADERA CO, 23 May, 8 Jun (KD). *Polygonus leo histrio*, Hemet, Riverside Co, 15 Aug (JFE). *Urbanus proteus*, Garden Grove, Orange Co, singles on 22 Jun, 26 Jul, 14 Sep (WPS). *Thorybes diversus*, Sugar Pine, 23 May EARLY, 8 Jun (KD) & nr Fresno Dome, SOUTH, 8 June (KR), all MADERA CO, also at Fish Camp, Mariposa Co, 23 May EARLY, 8 Jun (KD). *Erynnis brizo lacustra*, summit of Bald Mtn, 9382', HIGH and east of Sierran crest, Tulare Co, 20 Jun (KD) & Washington, 2650', Nevada Co, 2 Apr, rare in N Sierra (AMS). A single ♂ *E. funeralis*, Suisun Marsh, SOLANO CO, 24 Aug (AMS). *E. persius*, Low Divide Rd, NE of Crescent City, DEL NORTE CO, 4-7 Jun (FJP fide RES). *Pyrgus ruralis*, tr from Woods Lk to Round Top Lk, 8600', HIGH, ALPINE CO, 10 Jul 1990 (GK fide RES). *P. communis* (det JFE), Hwy 58, Temblor Rg, KERN CO, 4 Jun 1987 (KD) - confirms both *communis* & *albescens* in Kern Co. *Heliopetes ericetorum*, Lang Crossing, 5000', Nevada Co, 20 Jun, 2nd in 19 years (AMS). *Copaecodes aurantiacus* ova on *Aristida* sp (Poaceae), N end Dead Mtns, San Bernardino Co, 12 Sep (GB,JFE). *Pseudocopaecodes eunus* new pop. at Koehn Dry Lk, Kern Co, 11, 16 May (KD) - lighter than Kern Rvr Vy populations. *Polites sabuleti chusca* common at Koehn Dry Lk, 11, 16, 26 May, new for KERN CO at subspecies level (KD). *P. mardon*, Low Divide Rd NE of Crescent City, DEL NORTE CO, 4-7 Jun (FJP fide RES). Nominat *P. sonora*, Mines Rd, Arroyo Mocho, 15 mi SE of Livermore, ALAMEDA CO (SOM) & Hwy 116, 1 mi E of Jct Adobe Rd, 5 air mi SW of Sonoma, 14 Jun (SOM) - new for SONOMA CO at subspecies level - *P. s. siris* known for decades closer to the Sonoma coast (RLL). *Atalopedes campestris*, Cressey, 165', 12 Sep, plus Kesterson NWR, & San Joaquin Rvr 5 mi NE of Gustine, 1 Oct, all MERCED CO (RLL). *Ochloides sylvanoides*, San Bruno Mtns, San Mateo Co, 5 Jun, EARLY (RLL) & Rancho Cordova, Sacramento Co, 7 Jun, unusually EARLY for Sacto Vy (AMS). *Paratrytone melane*, Sugar Pine, 23 May plus Fresno Rvr at Oakhurst, 8 Jun, both MADERA CO (KD) & San Juan Bautista, 200', SAN BENITO CO, 2 Oct (RLL). *Amblycirtes vialis*, nr Fresno Dome, SOUTH, Madera Co, 8 Jun (KR). *Parnassius clodius sol*, Sugar Pine, 8 Jun (KD) & nr Fresno Dome, SOUTH, 8 Jun (KR) - recent records for Madera Co, 30 years since Clyde Eriksen published in 1962. Nominat *Battus philenor*, N end Dead Mtns, eastern Mojave Desert, San Bernardino Co, 21 Sep (GB, JFE). *Papilio polyxenes coloro*, summit of Bald Mtn, 9342', HIGH, TULARE CO, 20 Jun (KD). *P. indra*, Donner Pass, Nevada Co, 16 May, EARLY for 7000' (AMS) & Mammoth Mtn, 10,250', HIGH, Mono Co, 23 Jul (PMT). *Heraclides cresphontes*, 5 mi ESE of Mecca, Riverside Co, 30 May, adults common, ova & larvae on row of 25'tall lemon trees (JFE); a continued incursion into northern San Diego Co: At Encinitas observed weekly 27 Aug-17 Oct, peak flight around Labor Day - in late summer *cresphontes* the most common swallowtail in the Encinitas area, even commoner than *P. zelicaon*! (S.R. Forbes fide GSF). *Pterourus eurymedon* fm "albanus", Lower Coffee Crk Rd, LOW, Trinity Co, 17 May (SN). *Neophasia menapia*, Low Divide Rd NE of Crescent City, DEL NORTE CO, 4 Jun, EARLY (FJP fide RES). *Pontia sisymbrii*, Eagle View Tr, Sunol Regional Wilderness, ALAMEDA CO, 28 Mar (RVK), 31 Mar (KGH). *Pieris napi microstriata*, Washington, Nevada Co, 23 Feb, EARLY for 2650' (AMS). *Anthocharis cethura morrisoni* TOPOTYPES, good flight, lower Kern R just W of Bakersfield, 13 Mar (KD), 27 Mar (KMR), also off Hwy 58 at Temblor Rg summit, 3258', Kern Co, 25 Apr, LATE (KD). *A. cethura pima* (100% yellow, Hwy R2, 2.5-3.5 mi N of Desert Center, 22 Mar, *Tripidocarpum gracile* (Dobie Pod - Cruciferae) present (WLS) - mostly white populations barely 25 mi W of this spot, plus all yellow on NW slope Kingston Rg, Inyo Co, 7 April & SE slope Kingston Rg, San Bernardino Co, 7 April (WLS) - *Thelypodium lasiophyllum* & *Descurania pinnata* present, Kingston Rg. *Colias occidentalis chrysomelas* fresh and common, 1 mi below Letts Lk, Colusa Co, 22 May (JBV). *C. alexandra harfordii*, Holcomb Ridge NW of Valyermo, Los Angeles Co, 15 Mar, unusual high desert location (JGP) & 2nd brood in Laguna Mtns, San Diego Co, 26 Jul (RLL). *Zerene eurydice*, Willow Slough, Yolo Co, 5 Apr - 2nd in 3 years, suggests a colony (AMS). *Z. cesonia*, Trabuco Cyn, Santa Ana Mtns, 13 May, rare in Orange Co (JFE). *Eurema mexicanum*, Lk Hemet, Riverside Co, 16 May (JFE) plus 3.5 mi S of Bodfish, Kern Co, 18 May (JPB) & Iron Mtn north on Mormon Emigrant Tr, 7000', EL DORADO CO, 25 Jun (Tony Garvine fide J. Ausland, SOM, AMS) - one in A-1 condition, and unusual this HIGH, far NORTH! *E. lisa*, many observed, 5 taken, Big Morongo Cyn, The Nature Conservancy Preserve, RIVERSIDE & SAN BERNARDINO COs (RPA et al, fide RES). *E. nise nephe*, Chemehuevi Mtns, SAN BERNARDINO CO, 18 April (JFE, RMG) & Trabuco Cyn, Santa Ana Mtns, ORANGE CO, 13 May (JFE). *Nathalis iole*: along RR tracks near Nevada/Placer Co line, Donner Pass, PLACER CO, 27 Jun (AMS); Jct Sonora Pass Rd at Clark Fork Rd, 5600', TUOLUMNE CO, 27 Jun (PMT); Badger Flat, Inyo Mtns, 17 Jul (GB, JFE); five fresh adults, Edison, Kern Co, 22, 23 Sep (KD); West Sacramento, YOLO CO, 24 Sep (AMS), Suisun Marsh, SOLANO CO, 8 Oct (AMS). *Tharsalea arota virginianensis*, Washington, 2650', Nevada Co, 3 Jun, EARLY (AMS). *Gaeides gorgon*, Rancho Cordova, 23 Mar, EARLY, rare on vy floor, but found in Sacto Co a decade or so ago (AMS). *Epidemia mariposa*, nr Sanger Lk, 5500', DEL NORTE CO, 8 Aug (SN). *Atalides halesus estesi*, Oakmont, 7 mi SE of Santa Rosa, Sonoma Co, 6 Nov, rather late (WLS). Numerous records for *Chlorostymon simaethis sarita* (The unusual & exciting entity for Zone 3 in 1992!); Utah Tr, 2800', 4 mi S of Rt 62, SAN BERNARDINO CO, 16 April, EARLY (KMR); Red Cloud Rd 2-3 mi S of I-10, 25 Apr & Chuckwalla Bench on Augustine Pass Rd, 2300', both Riverside Co (JPD); North Hollywood, LOS ANGELES CO, 26 Apr (CAS); Cornfield Springs Cyn, Providence Mtns, 2nd for S. Bdn. Co, 3 May (JFE); Cantil nr Koehn Dry Lk, KERN CO, 11, 16 May - all on alfalfa (KD); near Sageland, Kelso Valley, NORTH, 2nd for Kern Co, 24 May (Larry Muller, JGP). *Callophrys lemberti* ovip. on *Eriogonum umbellatum*, North Trinity Mtn, 5800-6100', HUMBOLDT CO, 9, 18 Jun (SN). *Loranthomitoura johnsoni*: A single female, Donner Pass, 7000', NEVADA CO, 8 Jun (AMS); several, 10 mi E of Camp Connell at Poison Crk, 7000', Calaveras Co, 4 Jun (REW); Peddler Hill, 7000', Amador Co, 7, 8 Jun (REW); Hwy 108 at Eagle Mdws Rd, 7000', 10 Jun (REW); 1 mi NW of Iron Mtn Ski Area, 7000', El Dorado Co, 11 Jun (REW) - *L. spinetorum* were thick in all above spots, and neglecting on *Ceanothus cordulatus* (REW) & *spinetorum* at Washington,

Nevada Co, 2 Apr (AMS). L. johnsoni & L. spinetorum larvae sympatric on Arceuthobium (Loranthaceae), Magee Tr, Thousand Lks Vy Wild Area, Shasta Co, 12 Jul (GB, JFE, G.F. Pratt, SOM) & adults sympatric 5 mi S of Wright's L, El Dorado Co, 5 Jun (JBV). Incisalia mossii windi larva on Sedum lanceolatum (Crassulaceae) NEW HOST, Triangle Lk Tr nr Angora Peak, El Dorado Co, 1 Jul (JFE) - Hemiarigus ceraunus gyas, N end Dead Mtns, San Bernardino Co, 21 Sep, larvae on Eriogonum nidularium (Polygonaceae) (GB, JFE) - usual hosts in the Fabaceae, especially the mesquites (RLL). Everes comyntas, Hwy 70, 4.5 mi S of Oroville, 300', BUTTE CO, 11 Jun 1988 (GK) & Hwy 36 W of Red Bluff, 400', TEHAMA CO, 12 May 1989 (GK fide RES). E. amyntula found in the desert! - Koehn Dry Lk at Cantil, Kern Co, 26 May (KD). Philotes sonorensis, Eagle View Tr, Sunol Regional Wilderness, ALAMEDA CO, 26 Mar (KAD, RSL), 28 Mar (RVK), 31 Mar (KGH). Euphilotes enoptes tildeni new localities in Kern Co: Ortega Grade, E end Annette Rd & Cottonwood Pass, all in Temblor Rg, 7 Sep (KD) [Just across line in San Luis Obispo Co, Cottonwood & Polonio Passes, Aug-Sep 63, 11 Sept 64, 8 Sept 69, 27 Aug 73 - RLL]. Glaucopsyche piasus, nr Fresno Dome, MADERA CO, 8 Jun (KR fide KD). Plebeius saepiolus, Low Divide Rd NE of Crescent City, 4 Jun & Kellogg Beach, 7 Jun, both DEL NORTE CO (FJP fide RES). Icaricia lupini monticola, I. neurona & Euph. battooides comstocki sympatric, Sherman Pass Rd 2 mi W of Bald Mtn at 8000', Tulare Co, all NORTH for Sierra Nevada, 6 Jul (KD). Apodemia mormo, 3 mi W of Priest Vy, Monterey Co, 20 Aug (PMT). In the Temblor Rg, A. mormo populations with many resembling langei, Davis Rd at summit of Ortega Grade & nearby Annette Rd, extreme NW Kern Co, 7 Sep (KD) ["langei-type" examples also in SLO Co at Cottonwood & Polonio Passes, 1960s, 1970s, RLL]. Speyeria cybele leto, Fresno Dome, MADERA CO, 26 Jul (KD) with S. mormonia arge common. S. zereue, Lloyd Meadows, 5640', 11 Aug (KMR). Clossinia epithore sierra, Sugar Pine, Madera Co, 23 May, EARLY (KD). Charidryas palla, Donner Pass, Nevada Co, 16 May, EARLY for 7000' (AMS). C. neumogeni numerous larvae on Xylorhiza tortifolia, a few larvae on Haplopappus goodingii & Baccharis brachyphylla (all Asteraceae), N end Dead Mtns, San Bernardino Co, 1 Mar (JFE, BMG). C. damoetas malcolmi (9600-9800') & Euphydryas anicia irelandi (9200' SOUTH), White Chief Tr above Mineral King, Tulare Co, 23 Jul (KD). Hillsides were covered with Owl's Clover, wings of E. editha wrighti found in the Postoffice at Aguanga, Riverside Co, 13 Apr (RHL). Anthanassa texana, Cornfield Spgs Cyn, Providence Mtns, San Bernardino Co, 3 May (JFE), also Providence Mtns, 13 May (JGP) & nr Sageland, Kelso Vy, KERN CO. & NORTH, 24 May (JGP). Phyciodes orseis, Deadfall Mdw, 19 Jun (JBV) - confirms old LACM record for Trinity Co. Polygona satyrus, nr Fresno Dome, MADERA CO, 8 Jun (KR fide KD) & Donner Pass, 7000', HIGH Nevada Co, 17 Jun (AMS). Second Madera Co record for P. faunus rusticus (incl. "silvius"), Sugar Pine, 27 Apr common, 23 May (KD) & rusticus ovip. on Ribes cereum (Grossulariaceae), Groves Prairie Crk, 4000', Humboldt Co, 7 May (SN). Nymphalis antiopa, Kellogg Beach, DEL NORTE CO, 7 Jun (FJP fide RES). Vanessa annabella, fresh male, Kensington, Contra Costa Co, 1 Jan, EARLY (RLL) & Mammoth Mtn, 10,400', HIGH, Mono Co, 23 Jul (PMT). Junonia coenia, Donner Pass, 8 May, EARLIEST ever at 7000' - breeding & common into Oct (AMS), abundant in the usual lower areas vacated in the Dec 1990 freeze, which have been solidly retaken (AMS). Off year Oeneis ivalda as common as in an odd year on Castle & Basin Peaks, Nevada Co! (AMS), but not seen at Carson Pass. Also ivalda in even year at Mammoth Mtn, 11,020', Mono Co, 21 Jul (PMT). Danaus gilippus strigosus: Hemet, Riverside Co, 11 Jan, EARLY (JFE); in Orange Co in numbers, Garden Grove, 20,31 May, 5, 17 Jun (WPS); Walnut Crk, 19 Jul 1990 & Clayton, 25 Jul 1991, both CONTRA COSTA CO (RVK).

NEVADA (NV): Contributors: GTA, AB, BB, BrB, RLL, PJS, WLS, JBV and REW. Eighteen COUNTY records (including 5 STATE records!) of butterfly species. Token moth collecting was done, most of which are cited, although some may be of the usual common occurrences.

Most of NV experienced its sixth consecutive year of drought; only southern NV had above normal precipitation (GTA). From 4 Jan to 3 Apr there was a series of six El Niño storms in the Southwest which brought well above normal rainfall south of a line approximately between Beatty, NV and St. George UT (WLS). Nov 91 thru early Apr 92 there was 4.78" in Las Vegas, whereas only 0.19" in Reno, with much of the central and northern parts continuing dry (WLS). In the south, much of this fell in early spring (Feb-Mar) and this, along with a mild winter, may have enhanced the northward flights of strays (GTA). Records of strays were much earlier (Apr thru Jun) than their more usual late summer occurrences (GTA).

MIGRANTS and STRAYS: Phoebis sennae marcellina is of sporadic occurrence in southern NV to about Las Vegas and very rare northward (GTA): Las Vegas, 26, 27 Apr (RLL) with several Clark Co records Apr-Jun (GTA): Fish Lk Vy, 12 mi N of Dyer, ESMERALDA CO, 4 Jun (GTA); Ash Mdws area 16 Apr (PJS) & 1 mi N of Beatty, 4 Jun (GTA), both Nye Co; 4 mi E of Oreana, PERSHING CO, 1 Jun (JBV); White Rvr Vy, Lund, WHITE PINE CO, 6 June (GTA). P. agarithe, Coal Spg, Spg Mtns, CLARK CO. & STATE, 27 Jun (BrB). Libytheana bachmanii larvata, Mdw Vy Wash, Grapevine Cyn, Lincoln Co, 5 Jun (GTA) - only 1992 record or NV. Vanessa cardui; Another huge northward movement (but of shorter duration than in 1991) during Apr (GTA); few to several Clark Co, 25-24 Apr & several hundred migrating N & NW, Hwy 95, Stonewall Pass, Goldfield, etc, to Tonopah, Esmeralda Co, 29 Apr (RLL).

MOTHS: PYRALIDAE - Prorasa pulveralis, 10 mi NW of Tonopah, Esmeralda Co, 29 Apr (RLL). GEOMETRIDAE - Semiothisa excurvata, Percnophilota obstipata & Eupithecia behrensata, 14 mi NE of Mill City, Pershing Co, 9 Jul (RLL). Lithostege fuscata, 10 mi NW of Tonopah, 29 Apr (RLL). SATURNIIDAE - Hemileuca nuttalli, vic of Cave Crk, 10 mi SE of Ely, 7000', White Pine Co, 21 Jun, foodplant: Chambatiaria milliformis (Desert Sweet), II-III instar larvae AND the egg mass on one isolated bush (REW). ARCTIIDAE - Gnophala latipennis common, road to and at Angel Lk, 10-12 mi SW of Wells, Elko Co, 8 Jul (RLL). NOCTUIDAE - Drasteria tejonica, Prothrinax luteomedia & Lacinipolia vicina, 14 mi NE of Mill City, Pershing Co, 9 Jul (RLL). Euanotia semirufa, P. luteomedia & Oncocnemis occata, 10 mi NW of Tonopah, Esmeralda Co, 29 Apr (RLL).

BUTTERFLIES: Nastra julia, Sacatone Wash, Newberry Mtns, CLARK CO & STATE, 17 Jun (GTA). Ochlodes yuma, Fish Lk Vy 2 mi S of Dyer, Esmeralda Co, 4 Jun (GTA) - no Phragmites known within many miles! Papilio polyxenes coloro fm "clarki" fresh, Lower Kyle Cyn, Spg Mtns, Clark Co, 29 Apr (RLL). P. indra nevadensis, Jackson Cr, Iron King Mine, Jackson Mtns, HUMBOLDT CO, 1 Jun (JBV). Anthocharis cethura pima all yellow, Hwy 93, 20 mi N of Clark Co line, 2400', Lincoln Co, 10 Apr, assoc/w Thelypodium lasiophyllum & Descurania pinnata (WLS) & 15 mi N of Clark Co line, 10 Apr, assoc/w D. p. & Streptanthella sp. (WLS). Colias philodice eriphyle Henderson, Clark Co, 12 Jun (BrB) - common to abundant N of Mojave Desert, only 3rd record for Clark Co (GTA). C. alexandra edwardsii, Lovell Cyn, Spg Mtns, Clark Co, June (AB, BB, BrB) - the only known Clark Co colony disappeared several years ago - is this another? Zerene cesonia, Mt Charleston, Spg Mtns, Clark Co, 29 Apr (RLL) & Sonoma Cr, Sonoma Rg, PERSHING CO, 11 Jul (GTA). Eurema boisduvalianum, Blue Diamond, CLARK CO & STATE, 11 May (BrB). E. mexicanum, Sacatone Pass & Christmas Tree Pass, Newberry Mtns, Clark Co, 17 Jun (GTA) & Mdw Vy Wash 4 mi S of Elgin, LINCOLN CO, 5 Jun (GTA) - only 4 previous records for NV. E. nise nelphe, Sacatone Wash, CLARK CO & STATE, 17 Jun (GTA). E. nicippe: Large spring flight in Clark Co (GTA, AB, BrB, BB); 2 mi W of Pequop Summit, ELKO CO, 11 Jun (GTA); Rt 266 at Lida, ESMERALDA CO, 4 Jun (GTA); Amargosa Farms, Nye Co, 4 Jun (GTA) - usually very rare N of Mojave Desert. Nathalis iole: Numerous records in northern NV (Elko, Esmeralda, Lincoln, Nye, Washoe Counties); 3 mi N of Lovelock, 10 Jul, I-80 Cosgrave Rest Area, 10 Jul & Golconda Cyn, Tobin Rg, 11 Jul, all PERSHING CO (GTA); Six Mile Cyn, 1 mi E of Virginia City, STOREY CO, 7 Jul (GTA). Chlorostymon simaethis sarita, Las Vegas, 24 May & Indian Spgs, 4 Jun, both CLARK CO & STATE (GTA) - the "big bug" in 1992 also for AZ & CA! (RLL). Leptotes marina, Ruby Vy 3 mi S of Lutts Crk, Elko Co, 11 Jun (GTA) - uncommon N of Mojave Desert. Hemiarigus ceraunus gyas: Fish Lk Vy 2 mi S of Dyer, ESMERALDA CO, 4 Jun (GTA); Amargosa Farms & Beatty, Nye Co, 4 Jun (GTA); Lund, White Pine Co, 6 Jun (GTA). H. isola alce, Raspberry Crk, East Rg, PERSHING CO, 10 Jul (GTA). Anthanassa texana: Blue Diamond, 17 May (AB) & Sacatone Wash, Newberry Mtns, 17 Jun (GTA), both Clark Co; Mdw Vy Wash, Grapevine Cyn, LINCOLN CO, 5 Jun (GTA) - only 4 previous records for NV. Junonia coenia, seeps 5 mi S of northern border of Pyramid Lk Indian Rsvn, Washoe Co, 10 Jul (GTA) - very rare this far N in NV. J. nigrosuffusa, Sacatone Wash,

ZONE 4: THE ROCKY MOUNTAINS: ALBERTA, MONTANA, WYOMING, UTAH, COLORADO, NEW MEXICO.

Coordinator: Ray E. Stanford (RES)

Assistants: Katharine A. Stanford (KAS) & Andrew D. Warren (ADW)

Contributors: Valeriu Albu (VA), Karolis Bagdonas and his "Flying Circus" (BFC, including Davin Bagdonas, Halena-Maija Bagdonas, William Bagdonas, Bobby Brown, Katy Butts, Sunday Cryder, Todd Dehm, Kara Keeton, Patrice Lussy, Jennifer Mahlmann, Mike and Chris McClimans, George McNaughton, Prof. Kauri Mikkola, Cathy Powell, Dan Regelski), John H. Brandt (JHB), Barton B. Brinkman (BBB), Larry D. Beuiler and family (LDB), Steven J. Cary (SJC), Terhune S. Dickel (TSD), Yves-Pascal Dion and Danielle (YPD), David L. Eiler (DLE), Clifford D. Ferris (CDF), Clyde F. Gillette (CFG), Jack L. Harry (JLH), John I. Hetzler (JIH), Joel M. Johnson (JMJ), Norbert G. Kondla (NGK), Steven J. Kohler (SJK), Robert L. Langston (RL), Ronald H. Leuschner (RHL), Gary M. Marrone (GMM), Clifford A. Miles (CAM), Robert C. Mower (RCM), John S. Nordin (JSN), Paul A. Opler (PAO), Floyd and June Preston (FJP), Kilian Roever (KR), Ronald A. Royer (RAR), Patrick J. Savage (PJS), James A. Scott (JAS), Stephen W. Sommerfeld (SWS), Ray and/or Kit Stanford (RES, KAS), William L. Swisher (WLS), Bea Vogel (BV), Andrew D. Warren (ADW), Ralph E. Wells (REW), Ernest H. Williams (EHW). Total 35 (cf 42 in 1991), with only CDF and RES reporting from more than 2 States; they along with SJK and JAS have reported for 14+ consecutive years. A couple of the "missing" species (see 1991 Zone 4 Intro) were picked up in 1992. For the past 14 years combined we have recorded 397 butterfly species, 372 of them with new county records. The avg bf spp/co in Zone 4 is up to 97.21 compared with 117.51 in Zone 3 (AZ, CA, NV). There were 9 STATE records (cf 17 in 1991) and 358 COUNTY records (cf 326 in 1991) for bfs among the slightly fewer than 800 total data received, and about 350 moth records (more than half COUNTY records). The season was described as poor to disastrous by most contributors, with extremely dry winter and spring, wet summer and dry fall. Over 50% of bf collecting/observing days were rainouts. The year for all records is 1992 except as noted.

ALBERTA (AB): Contributor: NGK. There were no moth reports.

BUTTERFLIES: No 1992 data, but a few clarifications on last year's short Summary from NGK. The people there prefer to consider Colias christina distinct from both C. alexandra and C. occidentalis; the "orange morphs" are mapped together in the forthcoming Western Atlas as a separate map to encourage future research. He sent an updated species table for Alberta, and the species total given last year is too low even with lumping; using the same criteria as elsewhere in the West, I get 159 spp this evening and might well see 160 or even 161 from the same table next week!

MONTANA (MT): Contributors: CFG, JLH, SJK, BV. Mild, dry winter was followed by early spring (can we establish an early/late data base?) and hot, dry summer. There were no moth reports

BUTTERFLIES: Only 39 records were received, including 27 COUNTY records (CRs). The total number of CRs moved up to 4203 and the avg spp/co to 75.05, which is barely over 2/3 of projection. Either get hot up there or I must lower the projection! It is based on what is likely in a generation, not a millenium. Thorybes pylades, 30 mi N of McClelland Ferry, BLAINE Co, 4 Jul (BV). Pholisora catullus, Blind Cn, 4 mi NE of Seeley Lk, POWELL Co, 19 Jun (SJK). Parnassius clodius, Marston LO Rd, E of Stryker, LINCOLN Co, NORTHWEST, 16 Jul (SJK). P. phoebus, E sl Lost Peak, 6500', GOLDEN VALLEY Co, 4 Jul (BV), Papilio machaon bairdii larvae, 6.1 mi W of Lavina, US 12, 3500', GOLDEN VALLEY Co, 1 Aug (JLH). P. multicaudatus, same locality, GOLDEN VALLEY Co, 4 Jul (JLH); 5.7 mi N of Rapelje, 4200', STILLWATER Co, 5 Jul (JLH). Pontia sisymbrii, Hellgate Gulch, 5600', 26 mi N of Townsend, BROADWATER Co, 25 Apr (BV). P. protodice, 7.7 mi E of Rapelje, 4000', STILLWATER Co (few unknown Cos now), 5 Jul (JLH). Colias christina, same data as phoebus, GOLDEN VALLEY Co (BV); Wite Pan (sic), 6000', MEAGHER Co, 8 Aug (BV). Lycaena xanthoides dione, 6.1 mi W of Lavina, US 12, 3500' GOLDEN VALLEY Co, 4 Jul (JLH). L. hyllus, jet US 212/US 310, 3500', CARBON Co, 31 Jul (JLH). L. rubida, 2.2 mi E of Molt, 4000', YELLOWSTONE Co, 1 Aug (JLH). L. dorcas ssp, Swamp Crk, 5 mi E of Seeley Lk, POWELL Co, 23 Jun - 17 Jul (SJK). L. mariposa, US 212 @ Cooke City, 7600', PARK Co, 12 Aug 1980 (CFG). Phyciodes pallidus, Skelly Gulch, 62-6800', 16 mi NW of Helena, LEWIS & CLARK Co, 21 Jun (BV). Euphydryas editha, Teton Rvr, 5000', 22 mi W of Choteau, TETON Co, 3 May (BV). Polygonia oreas, Blind Cn, 4 mi E of Seeley Lk, POWELL Co, 11 Sep (SJK). Vanessa annabella, same locality, POWELL Co, 10 Sep (SJK). Basilarchia archippus, Roundup, 3200', MUSSELSHELL Co, 4 Jul (JLH). Coenonympha ochracea, same data as phoebus, GOLDEN VALLEY Co (BV). Cercyonis sthenele ssp, 6.1 mi W of Lavina, US 12, 3500', GOLDEN VALLEY Co, 4 Jul (JLH); 5.7 mi N of Rapelje, 4200', STILLWATER Co, 5 Jul (JLH); these are EAST records and fit between dubious records from Alberta and Carbon Co, MT; could they all be correct? C. oetus, 5 mi N of Ryegate, GOLDEN VALLEY Co, 3 Jul (BV). Neominois ridingsii, 7.7 mi E of Rapelje, 4000', STILLWATER Co, 5 Jul (JLH). Oeneis jutta, Georgetown Lk, DEER LODGE Co, 24 Jun (SJK).

WYOMING (WY): Contributors: VA, BFC, CDF, RLL, GMM, RCM, JSN, RAR, JAS, RES, ADW, EHW. A rainy and snowy summer followed cold, dry winter and spring; nearly all leps flew poorly if at all (BFC, CDF).

MOTHS: There were 52 records from 5 contributors, apparently a disastrous season (BFC/CDF). Many records did not include complete locality and/or date and most are not included here. SPHINGIDAE - Pachysphinx modesta borealis, and NOTODONTIDAE - Clostera albosigma, Summit Rest Area, I-80, 8640', Medicine Bow NF, Albany Co, 7 Jul (RLL). ARCTIIDAE - Grammia turbans (obliterata) and G. nevadensis, Evanston, Uinta Co, 30 Aug 1991 (RCM). Grammia geneura, Evanston, Uinta Co, 7 Jul (RLL). NOCTUIDAE - Autographa metallica, Plusia putnami, Teton Co, 8-14 Aug, (STATE?) (VA). Hecatera sutrina, same data as P. m. borealis. Schinia masoni, T12, R22W, S24, nr US 287, 27 Jun (JSN).

BUTTERFLIES: Despite the cool weather, most spp flew a week or two early, but there is still too weak data base to list very many EARLY records (or late or altitudinal). 58 data points are available (52 spp, 11 counties) including 37 CRs for 34 spp in 9 counties. WY still has 210 spp, but now 9 spp are known from all counties with H. comma, antiopa, atalanta and cardui added in 1992. There are 91.04 avg spp/co, which is 85.38% of revised projection. Only 5 counties remain under 60 spp: Sw 47, HS 50, Cm 51, Go 54, Wa 59. The following data are from 10 observers. Epargyreus clarus, 1 worn female associated with Glycyrrhiza lepidota, Little Snake Rvr at Baggs, 6240', CARBON Co, SOUTHWEST, 2 Aug (RES). Hesperia comma, Meadowlark Lk, 9000', BIG HORN Co, 26 Jul (BFC), now all counties; Camp Jack, 7200', 25mi W of Cheyenne on Happy Jack Rd, Laramie Co, 10 Sep (RES). Atalopedes campestris, fresh female, Cheyenne Botanical Gardens, 6150', LARAMIE Co, SOUTHEAST, 3rd STATE, 15 Sep, LATE (RES). Polites draco, Canyon Crk Cow Camp Rd (FR 25), 8300-8700', WASHAKIE Co, 14 Jul (CDF). Ochlodes sylvanoides, fresh and abundant, same data as clarus (RES). Papilio polyxenes, Sheridan, 3745', SHERIDAN Co, NORTH, 22 Jul (BFC).

P. zelicæon, Summit Rest Area, I-80, 8640', Medicine Bow NF, Albany Co, 7 Jul (RLL). *P. multicaudatus*, Tensleep Cn, 8000', US 16, WASHAKIE Co, 26 Jul (BFC). *Pieris napi*, Soldier Crk, 6000', 12 mi W of Sheridan, SHERIDAN Co, NORTH, 23 Jun (BFC). *Euchloe ausonides*, same data as *draco*, WASHAKIE Co (CDF). *Colias philodice*, oddly replacing *C. gigantea* in willow fens at Elkheart Park and Green Rvr Lks, 7960', Sublette Co, 2-4 Aug (ADW). *C. alexandra*, Tensleep Cn, 8600', US 16, WASHAKIE Co, 26 Jul (BFC). *C. "astraea"*, Hidden Basin Cg, BIG HORN Co, 26 Jun 1966 (JAS). *C. scudderii*, 2 mi W of Battle Pass, WY 70, 9000', Carbon Co, 1 Aug (RES). *C. pelidne*, US 16/Stovepipe Crk, 7900', Big Horn NF, WASHAKIE Co, 14 Jul (CDF). *Eurema mexicana*, Wind Rvr Cn, US 20, 4500', 6 mi W of Tensleep, HOT SPRINGS Co, NORTH, 5th STATE, 26 Jul (BFC). *Nathalis iole*, Cheyenne Botanical Gardens, 6150', LARAMIE Co, SOUTHEAST, 10 Sep, LATE (RES). *Lycaena phlaeas*, nr Cloud Mtn Wilderness, BIG HORN Co, 3 Aug 1991 (P. J.D. Malefy/RAR). *L. cuprea*, same data as *draco*, WASHAKIE Co (CDF). *L. rubida*, Soldier Crk, 6000', 12 mi W of Sheridan, SHERIDAN Co, 22 Jul (BFC). *L. heteronea*, Wind Rvr Cn, US 20, 4500', 6 mi W of Tensleep, HOT SPRINGS Co, 26 Jul (BFC). *L. hellouides*, same data as *comma* (RES). *L. nivalis*, same data as *zelicæon* (RLL); same data as *scudderii* (RES). *Satyrium sylvinum*, same data as *clarus*, assoc *Salix exigua*, CARBON Co (RES). *Glaucopteryx lygdamus*, Elkheart Park, NW of Pinedale on Fremont Lk Rd, Sublette Co, 3 Aug, LATE (previous 2 Aug)(ADW). *Plebejus acmon*, same data as *pelidne*, WASHAKIE Co (CDF). *Speyeria hydaspe*, Battle Pass, 9916', WY 70, Carbon Co, 1 Aug (RES). *S. atlantis*, same data as *pelidne*, WASHAKIE Co (CDF). *S. mormonia*, hill 6610', just N of CO line, 16 mi W of Baggs, SWEETWATER Co, 2 Aug (RES). *Boloria frigga*, Fox Park/Crk, 9000', CARBON Co, SOUTHWEST, 20 Jun (JSN). *B. freija*, old Ryan ski slope, CARBON Co, common, mid-late May (JSN). *B. titania*, same data as *scudderii* (RES). *Chlosyne gorgone*, slightly worn female, Cheyenne Botanical Gardens, 6150', Laramie Co, 15 Sep, LATE (KAS, RES). *C. palla*, same data as *pelidne*, WASHAKIE Co (CDF). *C. damoetas*, nr Cloud Mtn Wilderness, BIG HORN Co, 13 Jul 1991 (PJDM/RAR). *E. edita* *alebarki*, abundant but worn, same data as *zelicæon* (RLL). *E. gillettii*, zero adults or early stages seen, very worrisome, Beartooth study site, Park Co, 31 Jul (EHW). *Polygona oreas nigrozephyrus*, 2 males in bait traps, S Lodgepole Crk, 8250', ALBANY Co, EAST, 2nd STATE, 30 Aug and 3 Sep (JSN). *Nymphalis antiopa*, same data as *polyxenes*, SHERIDAN Co (BFC); No Wood-Big Tr BLM Rd, Orchard Rch, 5100', WASHAKIE Co, 14 Jul (CDF), now all counties. *N. milberti*, same data as *heteronea*, HOT SPRINGS Co, known from all but Weston Co. *Vanessa atalanta*, same data as *pelidne*, WASHAKIE Co (CDF), now all counties. *V. cardui*, same data again and many other records, WASHAKIE Co (CDF); 2.5 mi SSW of Elk Mtn LO, 5200', WESTON Co, 17 May (GMM), now all counties. *V. annabella*, 10 seen among thousands of *cardui*, Cheyenne Botanical Gardens, 6150', Laramie Co, 15 Sep, LATE (KAS, RES); Sheridan, 3745', SHERIDAN Co, NORTH, 26 Aug (BFC). *Junonia coenia*, one taken, same data as *iole*, LARAMIE Co, SOUTHEAST, 3rd STATE, LATE (RES). *Basilarchia archippus*, Green Rvr at Daniel, 7285' (not HIGH), Sublette Co, 1 Aug (ADW). *B. weidemeyerii*, Little Snake Rvr, 6100', 16 mi W of Baggs, SWEETWATER Co, 2 Aug (RES). *Erebia magdalena*, same data as *damoetas*, BIG HORN Co (PJDM/RAR). *Oeneis chryxus*, same data as *zelicæon* (RLL); same data as *hydaspe* (RES). *Danaus plexippus*, worn female, 3 mi E of Baggs, 6300', Carbon Co, 2 Aug (RES).

UTAH (UT): Contributors: LDB, BFC, DLE, CFG, JLH, JMJ, RLL, CAM, RCM, PJS, SWS, RES, WLS, REW (cf 11 in 1991 and 15 in 1990). It was a very rainy spring thru Jun, good in Jul, then poor the rest of the year because of heavy monsoon rains (that could produce a great season in 1993).

MOTHS: 52 data points were received (30 spp) incl 2-3 SRs and 45 CRs from 11 Cos, from 5 observers. **HEPIALIDAE** - *Hepialus hyperboreus*, Crystal Lk Cg, Uinta Mts, SUMMIT Co, 11 Aug (JM). **GEOMETRIDAE** - *Philobia aemulateriæ*, I-80 rest area SE of Wanship, Summit Co, 8 Jul (RLL). *Phigalia plumogeraria*, Payson, UTAH Co, 28 Feb, 3 Mar, (JM). *Caripeta aequaliaria*, Rilda Cu, EMERY Co, 28 Jun 1990 (JM). *Synaxis formosa*, E Tintic Mtns, JUAB Co, 19 Sep 1991 (JM). **SATURNIIDAE** - *Coloradia pandora*, Torrey, Wayne Co, 231 Jul (RCM). *Automeris io*, common, Abajo Mtns, 12 mi N of Blanding, 7500', SAN JUAN CO, 2nd STATE (per MJS), 24 Jun (REW). **SPHINGIDAE** - *Smerinthus cerisyi*, Manti LaSal Loop Rd, 10 mi N of Oowah Lk turnoff, Grand Co, 20 Jul (RCM). *Pachysphinx occidentalis*, Green River, EMERY Co, 20 Jul, Hastings Rd, GRAND CO, 19 Jul (RCM). *Euproserpinus wiesti*, Kanab, KANE CO, STATE, male in USU coll, leg Gary Smith, 10 Aug 1964, det verified by JMJ; this is surely mislabeled, since the species flies only in early spring and is known only from E CO and E NM. **ARCTIIDAE** - *Crambidia cephalica*, 1.2 mi S of Calf Crk Cg, GARFIELD CO, 22 Jul; 8.5 mi N of Green Rvr, Hastings Rd, GRAND CO, 19 Jul; rest stop, UT 12 N of Koosharem Rsvr, SEVIER Co, 23 Jul; Carcass Crk, Boulder Mtns, WAYNE CO, 21 Jul (all RCM). *Cisthene barnesii*, 1.2 mi S of Calf Crk Cg, GARFIELD CO, 22 Jul; 8.5 mi N of Green River, Hastings Rd, GRAND CO, 19 Jul; Manti LaSal Loop Rd, 2.6 mi S of Oowah Lk turnoff, SAN JUAN CO, 20 Jul; Mdw Brook Rch Rd, 0.4 mi W of UT 12, WAYNE CO, 21 Jul (RCM). *Lycomorpha splendens*, Manti LaSal Loop Rd, 10 mi N of Oowah Lk turnoff, GRAND CO, 20 Jul; Mdw Brook Rch Rd, 0.4 mi W of UT 12, WAYNE Co, 21 Jul (both RCM). *Hypoprepia inculta*, Manti LaSal Loop Rd, 2.6 mi S of Oowah Lk turnoff, SAN JUAN Co, 20 Jul; rest stop, UT 12 N of Koosharem Rsvr, SEVIER Co, 23 Jul; Carcass Crk, Boulder Mtns, WAYNE CO, 21 Jul (all RCM). *Bruceia pulverina*, 1.2 mi S of Calf Crk Cg, GARFIELD CO, 22 Jul; Manti La Sal Loop Rd, 2.6 mi S of Oowah Lk turnoff, SAN JUAN CO, 20 Jul (RCM). *Hyphantria cunea*, Green Rvr, EMERY Co, 20 Jul (RCM). *Hypercompe (Turuptiana) permaculata*, Manti LaSal Loop Rd, 10 mi N of Oowah Lk turnoff, GRAND CO, 20 Jul; Devils Cn Cg, SAN JUAN CO, 30 Jul (RWB?RCM). *Arachnis apachea*, 1.2 mi S of Calf Crk Cg, GARFIELD CO, 22 Jul; Mdw Brook Rch Rd, 0.4 mi W of UT 12, WAYNE CO, 21 Jul (both RCM). *Grammia nevadensis*, Carcass Crk, Boulder Mtns, WAYNE CO, 21 Jul (RCM). *Grammia geneura*, 8.5 mi N of Green Rvr, Hastings Rd, GRAND CO, 19 Jul (RCM). *Grammia williamsi*, Manti LaSal Loop Rd, 10 mi N of Oowah Lk turnoff, GRAND CO, 20 Jul (RCM). *Grammia f-pallida*, Manti LaSal Loop Rd, 10 mi N of Oowah Lk turnoff, GRAND CO, 20 Jul (RCM). *Lophocampa ingens*, Ponderosa Cg, KANE Co, 28 Jul (R.W. Baumann/RCM); Devils Cn Cg, SAN JUAN CO, 30 Jul (RWB/RCM); rest stop UT 12 N of Koosharem Rsvr, SEVIER Co, 23 Jul (RCM); Carcass Crk, Boulder Mts, WAYNE CO, 21 Jul (RCM). *L. argentata*, Ponderosa Cg, KANE Co, 28 Jul (R.W. Baumann/RCM); Devils Cn Cg, SAN JUAN CO, 30 Jul (RWB?RCM); 1.2 mi S of Calf Crk Cg, GARFIELD CO, 22 Jul (RCM); 8.5 mi N of Green Rvr, Hastings Rd, GRAND CO, 19 Jul (RCM); rest stop, UT 12 N of Koosharem Rsvr, SEVIER Co, 23 Jul (RCM); Carcass Crk, Boulder Mtns, WAYNE CO, 21 Jul (RCM). *Aemelia ambigua*, Ponderosa Cg, KANE Co, 28 Jul (R. W. Baumann/RCM); Devils Cn Cg SAN JUAN Co, 30 Jul (RWB/RCM). *Hemihyalea labecula*, Manti LaSal Loop Rd, 10 mi N of Oowah Lk turnoff, GRAND CO, 20 Jul (RCM). **NOCTUIDAE** - *Catocala aholibah* and *C. illia*, Manti LaSal Loop Rd, 10 mi N of Oowah Lk turnoff, Grand Co, 20 Jul (RCM). *Oligia egens*, I-80 rest area SE of Wanship, SUMMIT CO, ?STATE, 8 Jul (RLL). *Aseptis characta*, I-80 rest area SE of Wanship, Summit Co, 8 Jul (RLL).

BUTTERFLIES: 189 data points were received (cf 187 in 1991), including 105 CRs for 71 spp with at least one in every county; a large share came from the southern half of the State, although when I went there I got rained out! Three SRs raised the total species number to 215.43 spp are known to me from all counties, cf 44 in neighboring NV, but UT should pull ahead with several skipper spp. There are 105.45 avg spp/co, which is 93.32% of my projection (cf 106.46 and 94.21% in CO), and I will attempt to keep my home State ahead (then why do I visit UT for CRs?!). Highest county total is Wa 143; lowest Mo 80 spp, Sa 84, Cb 87, We 89, Dv/Ws 93. *Thorybes mexicanus*, Grindstone Flat, nr jct UT 153/FR 137, Tushar Mts, PIUTE Co, 28 Jun (PJS). *Erynnis brizo* and *E. telemachus*, canyon 5-6 mi NW of Circleville, PIUTE Co, 25 May (PJS). *E. afranius* (genit det), Stout Cn, KANE Co, 26 May 1986; Leeds Cn, Pine VY Mts, WASHINGTON Co, SOUTHWEST, 10 May 1987 (both PJS). *E. persius* (genit det), Bountiful Peak, DAVIS Co, 8 Jul 1989; Lone Tree Peak, IRON Co, 31 May 1987; same data as *brizo*, PIUTE Co; nr Buckboard Cg, Abajo Mts, SAN JUAN Co, SOUTHEAST, 27 May 1989; Mt Nebo Loop Rd, UTAH Co, 5 Jul 1989 (all PJS). *Pyrgus ruralis*, same data as *mexicanus*, PIUTE Co (PJS); Bug Lk, head of Laketown Cn, 7800', RICH Co, 5 Jul 1991 (SWS). *P. xanthus*, found at last: T37S, R7W, S26, FR 64 nr jct Mammoth Cave Rd, GARFIELD Co, STATE, 15 May; Stout Cn, KANE Co, 10 May, EARLY! (both PJS). *P. scriptura*, jct UT 24/I-70, 4200', 13 mi W of Green River, EMERY Co, 24 May (RES). *Heliopetes ericetorum*, female det RES, E Tintic Mts, JUAB Co, 27 Jun 1969, R. Kirkland/CAM; St George, 2800', Washington Co, 22 May (RES). *Pholisora catullus*, 5 mi N of Enterprise, IRON Co, 5 Jun (PJS). *Hesperia uncas*, fresh male in perfect *juba* habitat (would be final UT CR!), 1.5 mi S of Torrey, 6900', Wayne Co, 24 May (RES); pale phenotype, Gandy Salt Marsh, MILLARD Co, 21 Jun 1989 (PJS). *Ochlodes sylvanoides*, Crouse Cn, DAGGETT

Co, NORTHEAST, 14-15 Aug 1982 (BFC), now all but Wy Co. Parnassius phoebus, Powder Mtn ski area, 0.5 mi SSE of James Peak, 9000', Cache/WEBER Co line, 21 Jun (SWS). Papilio machaon bairdii incl fm brucei, I have a note card showing that I have personally seen material from Cb, Ka, Mi, Sa and Ws counties in collections, but I have misplaced the data. If any of you have records for these, please send them to me! P. zelicaon, Powder Mtn Ski Area, 9000', 0.5 mi SSE of James Peak, WEBER/Cache Co, 21 Jun (SWS). P. eurymedon, Bug Lk, head of Laketown Cn, 7800', RICH Co, 5 Jul 1991 (SWS). Anthocharis pima, Hill 3150, 1.0 mi W of Hurricane, EAST by 4 mi, Washington Co, 9 Apr (WLS). Zerene cesonia, Buckhorn Wash, 5200', 2.2 mi N of San Raphael Rvr, EMERY Co, 13 Jun (JLH); UT 12, 2.4 mi S of Torrey, 6900', WAYNE Co, 24 May (RES). Phoebis sennae, Stout Cn, KANE Co, SOUTHEAST, 10 May (PJS). Eurema nicippe, alfalfa field in St George, 2850', Washington Co, 22 May (RES). Nathalis iole, 1 mi NW of Wa Co line, FR 7-8 mi WNW of Enterprise, 6010', IRON Co, 2 May (PJS); Christmas Mdw, SUMMIT Co, NORTH, 8 Aug 1983 (CAM); common, St George area and nr Toquerville, 2754-3400', Washington Co, 22-23 May (PJS,RES); same data as cesonia, WAYNE Co (RES). Lycaena heteronea, upper Bear Vy, Iron Co, 26 Jul (PJS). Chlorostymon simaethis, Middle Spg, W sl Beaver Dam Mts, WASHINGTON Co, STATE, ZONE, NORTH (see CA, AZ, NV, NM), 2 May and 2 later records nr St George (PJS). Satyrium californicum, ridge W side of Indian Crk, Needle Rg, BEAVER Co, 25 Jul; ridge S of Arrowhead Pass, Needle Rg, IRON Co, SOUTH, 27 Jul (both PJS). S. saepium, same data, BEAVER & IRON Cos (PJS). Ministrymon leda, spg 2.5 mi N of Modena, Hamlin Vy, 5500', IRON Co, NORTH, 27 Jul (PJS). Callophrys affinis, same data as phoebus, HIGH, WEBER Co (SWS); Industrial Park Dr, UTAH Co, 30 Jul 1982 (CAM). C. apama, FR 105, Kanab Crk, Paunsaugunt Plateau, Kane Co, flying with worn C. sheridanii, 16 May, EARLY (PJS). C. sheridanii, above data, KANE, SOUTH. Incisalia augustinus iroides, I. fotis and intermediates, Price Cn Recr Area, CARBON Co, April, several years (CAM); for years I have suggested that these 2 spp are extremely close, perhaps conspecific, and not closely related to the mosii complex, and intermediate populations occur also in the Providence Mts of CA and in Mesa Co, CO; lots of work is needed! Leptotes marina, Indian Crk, Needle Rg, BEAVER Co, 25 Jul (PJS). Euphilotes battoides baueri, Indian Crk, Needle Rg, BEAVER Co, NORTH, 9 May, EARLY (PJS). Glaucopsyche pius, same data as brizo, PIUTE Co (PJS), now all counties. Plebejus saepiolus, UT 20 summit, 7200', betw US 85 and I-15, Iron Co, 23 May, EARLY (RES). P. acmon, Hobbie Crk Cn, UTAH Co, 21 Jun 1987 (CAM). Agriades glandon rusticus, Rilda Cn, EMERY Co, 22 Jun 1984 (CAM). Euptoieta claudia, Price Cn, CARBON Co, 13 Jun 1988; 1 mi N of San Rafael Rvr bridge, Emery Co, 12 Jun 1988 (both CAM). Speyeria aphrodite ssp, large and pale, one male in long series of S. eggleis nr utahensis (green VHW disc) in DMNH collection, det RES/PAO/MSF/JAS, S Willow Crk, Stansbury Mts, TOOELE Co, WEST, BIZARRE but true, 10 Jul 1973 (L. P. Grey/RES). S. edwardsii, male, 0.5 mi SE of E Fk, Blks Fk Cg, 9700', HIGH, N side Uinta Mts, SUMMIT Co, WEST, 3rd STATE, 12 Jul 1990 (CFG). S. zerene, male, S Fk Eccles Cn, 8600', 0.6 mi SW of Ut 264, CARBON Co, 13 Jul 1991 (CFG). S. hydaspae, ridge 0.4 mi SE of Grandview Peak, 8200', NW of City Crk Cn, SALT LAKE Co, SOUTH, female det CFG, 7 Jul 1989, ?EARLY (CFG didn't say so)(A. B. Dynerski/WHW/CFG); Christmas Mdw Cg, Stillwater Fk, 9100', Uinta Mts, SUMMIT Co, EAST, 8 Aug 1983 (fide CAM). S. mormonia, Bug Lk, head of Laketown Cn, 7800', RICH Co, 29 Jul 1988 (CAM), now known to me from all but Wa Co. Boloria freija and B. kriemhild, Chepeta Lk, 10400', Ashley NF, Uinta Mts, DUCHESNE Co, EAST and HIGH for kriemhild (see next entry), 30 Jun 1990 (CAM). B. kriemhild, 2 fresh males det RES/MSF in DMNH collection, Brown Duck Crk, 9400', 3.0 rd mi WNW of Moon Lk, DUCHESNE Co (lest the previous one not be available for confirmation), 25 Jun 1961 (J. D. Eff/RES). B. frigga, apparently valid in UT but I have no data; it usually flies with freija, so I recommend Chepeta Lk in early Jul! Phyciodes texana, Welcome Spg, W slope Beaver Dam Mts, WASHINGTON Co, STATE, NORTH, 25 Apr (PJS). P. selenis (tharos "B"), the "tharos" of most Rocky Mtn Cos, univoltine, Jun-Jul, is confirmed from at least the ff counties: BE, Cb, Du, Dv, Em, Ju, Mo, Pi, Ri, Sa, Se, Su, We, Ws, Wy; typical tharos is known in UT from only a single specimen from Grand Co (RES). P. pallidus barnesi, dry wash off UT 12, Red Cn, Garfield Co, 18 Jun 1990 (DLE); same data as brizo, PIUTE Co (PJS). P. mylitta, San Rafael Swell, EMERY Co, 20 Jul 1984 (CAM). Euphydryas colon nevadensis/anicia maria intermediates, clearly so to my eye but det as one or the other by other qualified regional lepidopterists, taken as larvae on Symphoricarpos oreophilus var utahensis and reared to adults, nr Laketown, RICH Co (LDB). Larvae on the same plant turned into good maria from Summit Co (all of us agree), so the question of conspecificity raised by James Scott years ago rears its head again! E. anicia "alena", gulch N of UT 14 E of Cedar City, 6200', Iron Co, 23 May (PJS,RES). It is widely known now that the name alena refers to a high elevation population in S UT, so the common, early spring, desert populations need a name; I suggest tidwelli, to acknowledge KBT's many decades of contributions to the study of UT Lepidoptera, including these checkerspots. Polytonia faunus rusticus, Rock Cn, UTAH Co, SOUTHWEST, 10 May 1984 (CAM). Nymphalis californica, same data as phoebus, WEBER Co (SWS). N. milberti, one worm individual, same data as nicippe, WASHINGTON Co, now all counties (RES). Vanessa atalanta, hill just E of Meadow Spg, 15 mi WNW of Lund, IRON Co, 9 May (PJS), now all counties. V. cardui, extreme dwarfs, common, Iron and Wash Cos, 22-23 May (PJS,RES). Junonia nigrosuffusa (put it in whatever sp you wish), same data as leda, IRON Co, NORTH; common in Wash Co (all PJS). Asterocampa celtis montis, Ash Crk, UT 17 at Toquerville, 3400', common along with Libytheana bachmanii around myriad hackberry trees, Washington Co (?NORTH), 23 May, EARLY (PJS,RES). Coenonympha ochracea, same data as battoides, BEAVER Co (PJS), now all Cos; same data as saepiolus (PJS,RES). Oeneis chryxus, same data as phoebus, CACHE and WEBER Cos, NORTH (SWS); small phenotypes with features somewhat intermediate toward albata daura (first mentioned by PJS), same data as apama, EARLY (PJS). Danaus gilippus, ova reared to pupae on Asclepias speciosa (A. incarnata also found in SLC), SALT LAKE Co, May, and several adults seen also, specific datum: ovum on A. speciosa, Pleasant Green Park, 4300', Magna, Brady J. Beutler/LDB; common, St George area, Wash Co, 22-23 May (PJS,RES); 3 seen in Capitol Reef NP, nr Visitors Center, 5600', Wayne Co, 24 May (RES).

COLORADO (CO): Contributors: BBB, JHB TSD, YPD, CDF, JIH, JSN, PAO, KR, JAS, RES, ADW, REW, far the lowest in several decades (last year there were 24). Winter snowpack was very low, resulting in widespread water shortages, but Denver had more snow-shoveling than any time in 24 years (you bet I measured it!). Spring was extremely dry, resulting in many EARLY records; summer was one of the rainiest on record until August, when everything dried up, flowers wilted, and almost no leps were seen after Labor Day.

MOTHS: Over 200 data points from 6 contributors. Many records were received that did not include complete locality and/or date, most of which are not included here. TSD Noctuid list for CO is nearly 900 sp! For determinations, TSD thanks D. Davis, J.G. Franclemont, R. Hodges, D. Ferguson, J.D. Lafontaine, K. Mikkola, J.F. Landry, B. Landry, P.T. Dang, R.W. Poole, M.A. Solis. The following records are presented in alphabetical order. Agapema homogena, Beaver Crk SWA, Fremont Co, 5 Jun (S. Dolansky, R. Twardkins/ADW). Alsophila pometaria, Johnson Park, 5500', Jefferson Co, 20 Mar (RES). Alpys octomaculata, Holyoke, 3720', Phillips Co, 14 Jul (RES). Amphion nesusus, Cherry Crk/Monaco St, 5320', Denver Co, 9 Jun (RES). Anoncia longa, Morgan Co, Aug (TSD). Archicaris (Brepheos) infans, Apex Tr, 6500', Jeff Co, 30 Mar (RES, no aspens or birches). Automeris io coloradensis, Beaver Crk SWA, Fremont Co, 9 Jun (S. Stone, ADW). Bellura obliqua, Morgan Co, May (TSD). Caenurgina sp, male, Red Rocks Park, 6400', Jeff Co, 28 Feb, EARLY (RES). Coloradia doris, same data as Agapema. Ctenucha cressonana, Nott Crk Tr, 7400', Golden Gate Cn SP, Jeff Co, 18 Jul (RES); reared to adult on Bromus inermis, larva found on it nr Tintytown, Jeff Co (JAS). Copablepharon grande, Morgan Co, Aug-Sep (TSD). Epelis truncataria, Gr Co, Jun (TSD). Euchalcia albavitta, bl, John Brown Cn, 4680', MESA Co, STATE, 30 Apr (JSN). Euxoa spp ("millers") were rare in 1992 (see 1991 report), Haematopis grataria, Limon, 5365', Lincoln Co, 17 Apr (RES). Helcystogramma cascum, Gr Co, Jun (TSD). Hepialis roseicaput, Gr Co, Jul (TSD). Hillia iris Gr Co, Sep (TSD). Hyles gallii, always rare in CO, 4 mi W of Gore Pass, ROUTT Co, 30 Jun (REW/RLL). H. lineata, in response to my exhortation last year, ADW sent Arapahoe Co records from Apr, May, Aug, Sep, Oct, 1989-1992, plus Chaffee and Fremont Cos 13 Jun, and a partridge in a pear tree!; RES observed it along I-25, south of racetrack, barely into PUEBLO Co, 1 Jun, and seeking shade in 93° heat at 2 PM under a cottonwood (NOT a pear!) tree, Muir Spgs Park, Morgan Co, 30 Apr (90° set a record in Denver that day). Itame brunneata, Gr Co, Jun (TSD). Melliella xanthometata, same data as infans. Mesembragrotis ruckesi, Morgan Co, Aug (TSD). Notodonta scitipennis, Morgan Co, May (TSD). Oncocnemis regina, Gr Co, Aug (TSD). Oncocnemis balteata, Morgan Co, Aug (TSD). Oncocnemis iricolor, & Oncocnemis simplex, Morgan Co, Sep (TSD). Parasemia plantiginis, Ro Co, Jun, (TSD). Platypolia contadina albertae, Gr Co, Sep (TSD). Platytes vobisne, Je Co, Jul (TSD). Pseudoscaphila duplex Ro Co, Jun (TSD). Semiothisa

unipunctaria, Gr Co, Jun (TSD) *Synedoida* sp, S mi E of Kiowa, 6700', Elbert Co, 4 May RES). *Xanthorhoe abrasaria trilineata*, Gr Co, Jul, (TSD).

BUTTERFLIES: About 400 data points were received, less than half of the previous year, including 2 STATE and 143 COUNTY records; 140 spp from 54/63 counties; CRs for 80 spp in 41/63 counties. There were 19 EARLY and only 4 LATE records, attesting the conditions above. CO now has 266 spp, 6 from all counties, and an average of 106.46 spp/co (cf 104.25 a year earlier, but only 94.21% of projection of 96 in AZ, CA, NV). The "best" county is still El Paso 192 spp, the "worst" Kiowa 42. Six 4JBCs were done, the Gilpin one setting a new USA record of 101 spp until the S AZ group got 102 in one day in a 7½ mile radius circle nr Patagonia a month later. Summary of 1992 data follows. *Epargyreus clarus*, Northglenn, Adams Co (BBB); gulch behind bar, Clear Crk Cn, 7200', CLEAR CREEK Co, 29 Jul (RES); larvae on *Amorpha fruticosa* (new host), Wheat Ridge, Jefferson Co (JAS). *Thorybes pylades*, single fresh male, Piney Crk, 6040', ARAPAHOE Co, EAST, 29 May (RES). *T. mexicanus*, Caribou, Boulder Co, 10 Jul (YPD). *Erynnis icelus*, SJNF, DOLORES Co, 1 Jul 64 (W. A. Hedges, in SDNIWM, det RES). *E. brizo*, 2 fresh males, scrub oak thickets 3.8 mi WNW of Elizabeth, 6600', ELBERT Co, EAST (best CO county for CRs in 1992 with 13), 25 Apr (ADW, RES). *E. telemachus*, Rocky Cliff Tr, 6600' (1/2 mi W of *brizo* spot, in gully), ELBERT Co, 28 Apr (RES); Apex Tr at Heritage Square, 6400', no oak near, Jefferson Co, 19 Jun (ADW). *E. horatius*, oak thickets at Surry Ridge along Hwy 1-25, Douglas Co, slightly NORTH, 21 Apr (ADW); same spot and date as *telemachus*, ELBERT Co (RES). *E. pacuvius*, Mt Zion, 7200', Jefferson Co, 26 Apr, EARLY (previous 29 Apr)(ADW). *E. baptisiae*, male long misidentified in RES coll, taken among *Baptisia* along railroad and US 24, 2 mi E of Arriba, LINCOLN Co, STATE, ZONE, WEST, 30 Jul 1972 (RES); other possibilities seen in 1992 in several NE CO counties—crown vetch along 1-76—watch next year report!! *E. afranius*, gully W of CO 71, 5300', 22 mi N of Limon, LINCOLN/WASHINGTON Counties, 26 Apr; Muir Spgs, 4315', 3 mi WNW of Ft Morgan, MORGAN Co, 30 Apr (all RES). *Pyrgus xanthus*, very rare in usual South Park spots, Park Co, 4 Jun (RES, ADW). *P. scriptura*, more common than usual or is it just that we looked harder: 2.0 mi E of Strasburg on CO 36, 5400', ADAMS Co, 6 May (RES); Stonehocker Park, Northglenn, ADAMS Co for 2nd gen, 9 Jul (BBB); Long Rd, 2 mi E of Parker Rd, 5900', 25 Apr (ADW, RES), and 2nd gen fresh, Piney Crk, 6000', 4 Jul (YPD) both Arapahoe Co; Paula Hentzell Park, nr Havana/Leetsdale, 5450', DENVER Co, 27 Apr, and Cherry Crk at Monaco, 5330', Denver Co, 3 Jul (both RES); 5.0 mi E of Kiowa, 6700', Elbert Co, 5 May (RES); gully W of CO 71, 5300', 22 mi N of Limon, LINCOLN/WASHINGTON Counties, 26 Apr (RES). *Pholisora catullus*, larvae on *Chenopodium berlandieri*, various locs; previous records for *C. album* were probably incorrect (JAS). *P. mejicanus* Walsenburg, 6250', HUERFANO Co, 13 Jul (RES). *Piruna pirus*, Rocky Cliff Trail, 6600', 6 mi E of Franktown, ELBERT Co, EAST, 21 Jul (RES). *Ancyloxypha numitor*, one female, along S Platte Rvr, 3990', nr Plains Museum, Sterling, LOGAN Co, 14 Jul (RES). *Oarisma garita*, Stonehocker Park, 5250', Northglenn ADAMS Co, 29 Jun (BBB, det RES). *Yvretta rhesus*, common, Colo Spgs SWA, 5400', 4 mi N of Wigwam, El Paso Co, 29 Apr (ADW); swale S of I-76, 1.5 mi E of Wiggins, 4520', MORGAN Co (confirmatory), 4 May (RES). *Stinga morrisoni*, pair, Rock Crk Cn, 6450', El Paso Co, 3 May (ADW); it's gotta be in Boulder Co! *Hesperia uncas*, 3 hills 0.2 mi W Henderson/Riverdale, 5360', Adams Co, 6 May, EARLY (previous 9 May); Las Animas, 3900', Bent Co, 23 Sep (both RES). *H. juba*, on rabbitbrush along S Platte Rvr, Woolhurst Lk into Waterton Cn, 54-5600', Arapahoe, Douglas and Jefferson counties, 6 Sep, 4 Oct, 11 Oct, 14 Oct, almost LATE (RES). *H. comma ochracea*, Piney Crk, 6000', ARAPAHOE Co, 27 Aug; *H. g. oroplata*, CO 165, 7800, 5 mi WNW of Rye, PUEBLO Co (at last!), 15 Aug (both RES). *H. ottoe*, Piney Crk, 6000', Arapahoe Co, 4 Jul (YPD, RES); common, Indian Gulch and along US 6, 6000', Jefferson Co, 9 Jul (ADW); we gotta find it right between for a DENVER record! *H. leonardus pawnee*, N Cl Crk just NW of Jeff Co line, CO119, 7100', GILPIN Co, WEST, 2 Sep (RES). *H. J. montana*, only 1 seen where usually abundant, Lone Rock Dg, 6800', 1 mi W of Deckers, Jefferson Co, 3 Sep (RES). *H. viridis*, 16.0 mi SSE of La Junta, 4400', BENT Co, 11 May (almost EARLY); below Two Buttes Dam, 4300', PROWERS Co, EAST, 12 May; 14 Crystola Crk, 1/2 mile SW of Crystola, 8100', TELLER Co, 14 Aug (all RES). *H. nevada*, Blue Rvr Cg, 8600', SUMMIT Co, 17 Jul (YPD, RES). *Atalopedes campestris*, worn female (?overwintered), Limon, 5365', Lincoln Co, 21 Apr, EARLY (previous 22 Apr); Clear Crk Cn, 5900', Jefferson Co, 27 Oct, LATE for region (both RES). *Polites peckius*, Rocky Cliff Tr, 6600', 6 mi E of Franktown, ELBERT Co, 27 Aug (RES). *P. sabuleti ministigma*, unusually large, 7 mi ESE of Monte Vista, 7620', Alamosa Co, 11 Jul (RES); Hayden Crk at Coaldale, 6600', Fremont Co, 13 Jun (RES, ADW). *P. themistocles*, gulch behind bar, Clear Crk Cn, 7200', CLEAR CREEK Co, 29 Jul; Ft Garland, 7900', COSTILLA Co, 9 Jul (both RES). *P. origenes*, within a mile of DENVER on 3 sides but not here; keep tuned! *P. mystic*, 1 rag female, Crystola Crk, 1/2 mile SW Crystola, 7900', TELLER Co, HIGH, 14 Aug, VERY LATE (RES). *P. sonora*, Winter Park, 8800', Grand Co, 17 Jul (YPD, RES). *Ochlodes sylvanoides*, common with several new records: Riverdale Rd, 5150', LOW, ADAMS Co, NORTHEAST, 7 Aug (RES); N Clear Crk just NW of Jeff Co line, CO 119, 7100', GILPIN Co, 2 Sep (RES); Kings Cn, 8500', CO 127, 10 mi NE of Cowdry, JACKSON Co, 1 Aug (RES); Clear Crk Cn, 6100', Jefferson Co, 5 Jul, EARLY for East Slope (ADW); 4-county point (whew: a hike), S Fk S Platte Rvr, 7200', PARK Co, 15 Aug (RES); Crystola Crk, 8100', 1/2 mile SW of Crystola, TELLER Co, 14 Aug (RES). *Paratrytone* (formerly *Ochlodes*) *snowi*, Aspen Glen Cg, CONEJOS Co, SOUTHWEST, 12 Jul 1969 (W.A. Hedges, SDNHM, det RES); Golden Gate Cn SP, Gilpin and Jefferson Cos, 9-18 Jul (YPD, RES, ADW). *Poanes taxiles*, same data as *pirus*, ELBERT Co, EAST (RES). *Euphyes vestris*, Wheat Ridge, Jefferson Co, 11 Jul (JAS); S Platte Rvr, 3990', nr Plains Museum, Sterling, LOGAN Co, 14 Jul (RES); Muir Spgs, 4315', Ft Morgan, MORGAN Co, 14 Jul (RES); Messex SWA, 4100', WASHINGTON Co, 14 Jul (RES); common, Wray, 3725', Yuma Co, 15 Jul (RES); all ssp *kiowah* in S Platte Rvr gallery forest grasslands, and will be found in Adams, Denver and Phillips counties (see *vialis*). "*Amblyscirtes*" (give it a name John) *simius*, Colo Spgs SWA, 5400', 4 mi N of Wigwam, El Paso Co, 1 Jun (RES, ADW); Horsetooth Mtn Park, Larimer Co, 21 Jun (PAO, ADW); find *rhesus* in Boulder Co and you will find *simius* too, a month later: *Amblyscirtes aenus*, 16 mi SSE of La Junta, 4400', BENT/OTERO counties, 11 May, EARLY (RES). *A. oslari*, hills W of Adams Co Fairground, 5100', ADAMS Co, 7 Jun; 16 mi SSE of La Junta, 4400', BENT/OTERO counties, 11 May; Dry Gulch at Sheridan Blvd, 5400', DENVER Co, 7 Jun (all RES). *A. eos*, 1.6 mi N of Manzanola, 4300', CROWLEY Co, 11 May (RES). *A. vialis*, confirmed in most of the S Platte Rvr gallery forest grasslands from Denver northeastward on the plains: Cherry Crk at Monaco St, 5320', DENVER Co, 15 Jun; S Platte Rvr, 3990', nr Plains Museum, Sterling, LOGAN Co, NORTHEAST, 30 Apr; Muir Spgs, 4315', Ft Morgan, MORGAN Co, 30 Apr; S Platte Rvr, 4420', 3.0 mi SW of Orchard, WELD Co, 4 May (all RES); need Adams, Arapahoe and the "far east" to complete the picture. *Megathymus yuccae coloradensis*, hills W of Adams Co Fairground, 5100', ADAMS Co, 4 May (RES); Piney Crk, 6000', ARAPAHOE Co, 23 Apr, EARLY (RES); rediscovered nr TL "Colo Spgs", Colo Spgs SWA, 5400', El Paso Co, 26 Apr (S. Dolansky/R. Twarkins, ADW). *M. streckeri texanus*, 3 mi SSW of Buena Vista, 8080', Chaffee Co, 13 Jun (RES, ADW); typical *streckeri* occurs only W of the continental divide, and may no longer occur in CO with the completion of the gigantic Blue Mesa Rsvr and others. Amen. *Papilio polyxenes asterius*, Rio Grande Rvr, ALAMOSA Co, Jul 1975 (L. J. Dugger, USFWS/J. H. Brandt, det RES); Trinchera Crk, E of Sanford, CONEJOS Co, Jul 1975 (same source); Rocky Ford, 4178', OTERO Co, 11 May (RES). *P. machaon bairdii* and *brucei*, Ralston Buttes, Jefferson Co, 31 Jul (JAS). *P. indra*, again absent in the Front Range—where is it? (RES, ADW, et al). *P. cresphontes*, 1 fresh male at puddle, farm rd off US 24 W of Limon, ELBERT Co, 7 Aug (JH). *P. glaucus*, Brighton, 4995', ADAMS Co, 28 Jul (RES); female *glaucus/rutulus*, Cherry Crk SRA, 15 Jul (ADW); female *glaucus/rutulus*, Paula Hentzell Park, Havana/Leetsdale, 5450', DENVER Co, 6 Jul (RES); female *glaucus/rutulus*, Tintytown, 6800', Jefferson Co, 17 Jun (JAS); typical *glaucus*, fresh male, Messex SWA, 4100', 10 mi NE of Hillrose, WASHINGTON Co, 30 Apr, VERY EARLY (previous 20 May)(RES); we are witnessing a rapid movement of *glaucus* into the Denver region and introgression with *rutulus* which was "pure" here 20 years ago. *P. multicaudatus*, E Denver Co, 30 Apr (KAS/RES). *Pontia beckerii*, CO 115, 1.6 mi S of Penrose, Fremont Co, 11 Jun, common (ADW). *P. protodice*, fm *vernalis*, Aurora, Arapahoe Co, 2 Mar, EARLY; summer form male, 1.6 mi N of Manzanola, 4300', Crowley Co, 11 May, EARLY (both RES). *P. occidentalis*, either becoming widespread on the prairies or missed in earlier years: CO 101, 2.0 mi S of Las Animas, 3900', Bent Co, 23 Sep; Ft Garland, 7900', COSTILLA Co, 9 Jul; hill 2.9 mi WNW of Elbert, 7020', ELBERT Co, 28 Apr; Clear Crk Cn, 5900', Jefferson Co, 21 Oct, LATE for area; Limon, 5365', LINCOLN Co, 21 Apr; Muir Spgs, 4315', Ft Morgan, MORGAN Co, 14 Jul; Frenchman Crk, 3720', 0.6 mi E of Holyoke, PHILLIPS Co, 17 Jun; Lamar, 3600', PROWERS Co, 24 Sep; Julesburg SWA, 3511', SEDGWICK Co, NORTHEAST, 17 Jun; hill W of CO 71, 5600', 25.0 mi N of Limon, WASHINGTON Co, 26 Apr; US 385 W of Bonny Rsvr, 3700', YUMA Co, 16 Jun (all RES). *Pieris napi*, Wightman Fk at FR 250, Rio Grande NF, 9500', HIGH, RIO GRANDE Co, 17 Aug (RES, while fixing a flat tire!). *Euchloe olympia*, 0.4 mi W of Genoa, 5600', Lincoln Co,

21 Apr, recent EARLY; below Plains Museum, Sterling, 3990', LOW, Logan Co, 30 Apr (both RES). *Colias scudderii*, Sand Pt Rd, 8-12 mi E of CO 13, Routt NF, 8300-9800', MOFFAT Co, NORTHWEST, a very promising new locality with 10 bf CRs in 2 hrs, 2 Aug (RES). *Zerene cesonia*, a splendid year here and elsewhere in the West in 1992; nearly 100 were seen in CO with 10 CRs, from 30 Apr to 27 Aug; US 160, 7 mi ESE of Monte Vista, ALAMOSA Co, 12 Jul; Piney Crk, 6000', Arapahoe Co, 27 Aug (RES,ADW); hill and gulches, Sand Cn, 20.9 rd mi SW of Campo, 4550', Baca Co, 12 May; Ft Garland, 7900', COSTILLA Co, 9 Jul; fairly common, Paula Hentzell Park, nr Havana/Leetsdale, 5450', Denver Co, 6 Jul (YPD,RES); 15.5mi E of Kiowa, 6400', ELBERT Co, 5 May; Rocky Cliff Tr, 6600', 6 mi E of Franktown, Elbert Co, 21 Jul; Woodmen Vy Tr, 5200', El Paso Co, 1 Jun (RES, ADW); East Portal, 9400', GILPIN Co, 22 Jul; Muir Spgs, 4315', Ft Morgan, Morgan Co, 30 Apr, EARLY (previous 1 May); CO 71, 4 blks S of US 50, Rocky Ford, 4178', OTERO Co, 11 May; Holyoke, 3720', PHILLIPS Co, 16 Jun; CO 133, 1.6 mi S of Ga Co line, 6300', PITKIN Co, 25 May; 6 individuals seen, 1-25 N of Pueblo, Pueblo Co, 6 May (JAS); gallery forest along RioGrande Rvr, N of Monte Vista, 7700', RIO GRANDE Co, 16 Aug; Crystola Crk, 1/2 mi SW of Crystola, 7900', TELLER Co, 14 Aug; Messex SWA, 10 mi NE of Hillrose, 4100', WASHINGTON Co, 4 May (all RES except as noted). *Phoebis sennae*, Cherry Crk SRA, 5560', Arapahoe Co, one male, 23 Jun; first CO report since 1988 (ADW). *Eurema mexicana*, fresh male, Rocky Ford, 4178', OTERO Co, 11 May, EARLY (previous 12 May)(RES). *E. nicippe*, several seen in Arapahoe, Custer and Jefferson counties (YPD,ADW). *Nathalis iole*, few seen of recent years; Alamosa City Park, 7530', ALAMOSA Co, 17 Aug (RES); several, Cherry Crk SRA, 5560', Arapahoe Co, Aug (ADW); Woodmen Vy Tr, 7200', El Paso Co, 22 Sep (RES); first seen in CO this yr, Sterling, Logan Co, 14 Jul (RES); jct FR 250/255 at Terrace Rsvr, 8600', CONEJOS Co, 17 Aug (RES, with 2nd flat tire in 5 mi!; ?air evac the Camel). *Tharsalea arota*, US 160 nr Park Crk Cg, 8500', MINERAL Co, 17 Aug (RES). *Lycaena xanthoides dione*, several, wet mdw at CO 165, 7800', HIGH, 5 mi WNW of Rye, Pueblo Co, 15 Aug, LATE; 2 mi SW of Ovid, 3525', Sedgwick Co, 17 Jun (both RES). *L. editha*, Winter Park, 8800', Grand Co, 17 Jul (YPD,RES). *L. helloides*, Limon, 5365', Lincoln Co, 5 May, EARLY (previous 10 May); Fountain Crk/US 50, 4668', PUEBLO Co, 22 Sep; Blue Rvr Cg, 8600', SUMMIT Co, 17 Jul (all RES). *L. dorcas castro*, same loc as *C. scudderii*, 9800', MOFFAT Co, NORTHWEST, 2 Aug (RES). *L. nivalis*, several in Grand, Moffat and Summit Cos, 17 Jul - 2 Aug (YPD,RES). *Hypaurotis crysalus*, Rocky Cliff Tr, 6600', 6 mi E of Franktown, ELBERT Co, EAST, 21 Jul (RES). *Satyrion titus*, same loc as *C. scudderii* but 8300', MOFFAT Co, NORTHWEST, 2 Aug (RES); Blue Rvr Cg, 8600', Summit Co, 17 Jul (YPD). *S. behrii*, Mt Zion, 7200', Jefferson Co, 29 May, EARLY for E sl (RES). *S. fuliginosum*, getting worn, Blue Rvr Cg, 8600', Summit Co, 17 Jul (YPD,RES). *S. acadicum*, getting worn, sandbar willow thickets, Logan and Yuma counties, 14-15 Jul (RES). *S. calanus* (see comment), mostly worn, Rocky Cliff Tr, 6600', 6 mi E of Franktown, ELBERT Co, EAST, 21 Jul (RES); Clear Crk Cn, 6000', Jefferson Co, 3-5 Jul (RES,ADW); these 2 populations are very different, the former typical *godarti* and the latter "falacer", so work is needed (see CDF WY paper). *S. liparops*, Cherry Crk/Monaco St, 5320', Denver Co, 15 Jun, EARLY (previous 21 Jun)(RES); same loc as *titus*, MOFFAT Co, NORTHWEST (RES). *Callophrys affinis*, Cottonwood Pt, 9800', HIGH, 4 mi S of Hot Sulphur Spgs, Grand Co, 3 Jun (ADW). *C. sheridanii*, seen? around junipers (?siva), Northglenn, ADAMS Co, May (BBB - get one in '93!); oak hills at Surrey Ridge, 8 mi N of Castle Rock, EAST, Douglas Co, 21 Apr (ADW); Red Rocks Park, 6400', Jefferson Co, 29 Feb, EARLY (previous 1 Mar in a non-leap-year, so is it really early?!)(RES,ADW). *Mitoura spinetorum*, Peaceful Vy BSA Rch, 7069', Elbert Co, 25 Apr (ADW); Nott Crk, 7400', Golden Gate SP, Jefferson Co, 13 Jul (YPD); now lets get it in Douglas Co, you guys! *M. siva*, Sand Cn, 4550', 20.9 rd mi SW of Campo, Baca Co, 12 May; 16.0 rd mi SSE of La Junta, 4400', BENT Co, 11 May; Prince Crk Rd, 6600', 2.9 mi SE of CO 133, PITKIN Co, 25 May (all RES). *Incisalia augustinus*, same data as *M. spinetorum*, ELBERT Co (RES,ADW). *I. polia*, same again (RES,ADW). *Strymon melinus*, alfalfa field 1/2mi N of Conejos Rvr/US 285, 7870', CONEJOS Co, 16 Aug; gallery forest N of Monte Vista, 7700', RIO GRANDE Co, 16 Aug; Crystola Crk, 1/2 mi SW of Crystola, 7900', HIGH, 14 Aug (all RES). *Brephidium exile*, single, Las Animas, 3900', Bent Co, 23 Sep (RES); nearly absent in 1992 cf abundant/widespread in 1991. *Leptotes marina*, Holyoke, 3720', PHILLIPS Co, 16 Jun (RES); none others reported. *Hemiargus isola*, worn male on freezing alfalfa flower, the last bf seen in CO in 1992, Clear Crk Cn, 5900', Jefferson Co, 31 Oct, LATE (RES, 36°F). *Everes comyntas*, US 34, 0.5 mi E of Brush, 4300', MORGAN Co, 28 Aug; Holyoke, 3720', PHILLIPS Co, 16 Jun; 14.0 mi S of Akron, 4700', WASHINGTON Co, 28 Aug (all RES). *Celastrina argiolus*, W Kiowa Crk, 1.9 mi SW of Elbert, 7000', ELBERT Co, EAST for fthl ssp, 28 Apr (RES). *C. neglecta-major* (hop ecotype), Gregory Cn, BOULDER Co, 25 Jun 1947, J. Donald Eff (thanks Don, and ADW, since I predicted this in last year's Summary); El Dorado Cn SP, 6400', Boulder Co, 12 Jun 1992 (RES, if Don's specimens are lost). *Euphilotes battoides*, worn and rare, CO 94, 12 mi E of Colo Spgs, 6200', El Paso Co, 14 Aug (RES). *E. rita*, new airport access construction site, 5350', I-70/PENA BLVD, DENVER Co, 28 Aug (RES); this is a "political" CR (aren't they all?) since the same colony was in Adams Co 5 years ago! All of DENVER was in ARAPAHOE Co 75 years ago. Sic transit gloria mundi. *Glaucopsyche piasus*, "Airport Hill", 8100', 2 mi NW of Aspen, Pitkin Co, 25 May (RES). *C. lygdamus*, several unusual "urban" records and an ultralate one: Stonehocker Park, Northglenn, 5250', ADAMS Co, 8 Jun 1965 and 12 Jun 1992 (BBB); 2 mi S of Brighton, 4994', Adams Co, 4 May (RES); Dry Gulch at Sheridan Blvd, 5400', Denver Co, 3 Jun (RES); gallery forest N of Monte Vista, 7700', RIO GRANDE Co, 16 Aug, VERY LATE (previous 4 Aug) (RES). *Plebejus icarioides*, Apex Tr at Heritage Sq, 6400', Jefferson Co, 26 Apr, EARLY (previous 2 May)(ADW); 0.2 mi N of Rush Crk, 5480', 15 mi N of Pumpkin Center, Lincoln Co, EAST, SURPRISE, 9 May (RES). *P. acmon*, Last Chance, 4800', WASHINGTON Co, 28 Aug (RES). *Agriades rusticus*, same loc/date as *C. scudderii*, 9800', MOFFAT Co, NORTHWEST (RES). *Apodemia mormo*, same data as *battoides*, also worn and scarce (RES). *A. nais*, Flagstaff Mtn, Boulder Co, 12 taken, 8 Jun 1948, EARLY (JDE); 53 seen and 1 taken, Mt Zion, 7200', Jefferson Co, 5 Jul (RES et al 4JBC), a slight change in philosophy over 44 years! *Speyeria cybele charlotti*, 7 other *Speyeria* spp, 10 total CRs in fabulous new spot, same loc/date as *C. scudderii*, MOFFAT Co, NORTHWEST (RES). *S. edwardsii*, Flagler SWA, 4700', 4 mi E of Flagler, KIT CARSON Co, EAST, 28 Aug (RES). *S. hydaspes*, same data as *cybele*, MOFFAT Co, NORTHWEST (RES); Ferndale PG, W of Rabbit Ears Pass, Routt Co, 3 Jul, EARLY (J. Peacock/ADW). *S. egleis*, same data as *cybele*, MOFFAT Co, NORTHEAST (RES). *S. atlantis*, El Dorado Cn SP, 6400', Boulder Co, 12 Jun, EARLY E Slope (RES). *S. mormonia*, 2 air mi NW of Thunder Butte, 8630', DOUGLAS Co, 15 Aug; Peaceful Vy BSA Rch, 7069', LOW, ELBERT Co, EAST, 14 Aug; same data as *cybele*, MOFFAT Co, NORTHWEST (all RES). *Boloria bellona*, Winter Park, 8800', Grand Co, 17 Jul (YPD). *B. frigga*, well out and some worn, Jefferson Bog, 10 mi N of Jefferson, 10200', Park Co, 4 Jun, EARLY (RES,ADW); *B. freija* was worn and nearly gone that day. *B. titania*, same data as *C. scudderii*, MOFFAT Co, NORTHWEST (RES). *Poladryas minuta minuta*, rim nr and W of RR tracks, 2 mi SE of Branson, 6500', mid Jun, LAS ANIMAS, STATE, NORTH (KR). *P. arachne*, 2.0 mi E of Strasburg, 5400', ADAMS Co, 6 May (RES); Smoky Hill Rd, Arapahoe Co, 19 May (JAS); 5.0 mi E of Kiowa, 6400', Elbert Co, 5 May, EARLY (previous 9 May)(RES). *Thessalia fulvia*, 1.6mi N of Manzanola, 4300', CROWLEY Co, 11 May (RES); Colo Spgs SWA, 5400', 4 mi N of Wigwam, El Paso Co, 29 Apr, EARLY (previous 9 May)(S. Dolansky, ADW); Guy Hill, 7800', Jefferson Co, 9 Jul (YPD). *Chlosyne gorgone*, 0.4 mi W of Genoa, 5600', Lincoln Co, 21 Apr, EARLY (Previous 24 Apr)(RES). *C. nycteis*, El Dorado Cn SP, 6400', Boulder Co, 12 Jun, EARLY E Slope (RES), *C. palla calydon*, Indian Gulch, 6100', Clear Crk Cn, Jefferson Co, 3 Jun (RES). *Phyciodes tharos*, worn female (?overwintered), Limon, 5365', Lincoln Co, 12 Apr, EARLY (previous 13 Apr)(RES). *P. selenis* (type B), Piney Crk, 6000', ARAPAHOE Co, EAST, 29 May (RES - a controversial specimen requiring a series from there south into Dg and El counties; PAO favors calling it *tharos* or an intermediate - let's DO IT!); west slope phenotype, gulch W of Frying Pan Rvr, 6800', 2.6 rd mi NE of Basalt, Eagle Co, 25 May, EARLY (previous 3 Jun) (RES). *P. campestris*, 14.0 mi S of Akron, 4700', WASHINGTON Co, 28 Aug (RES). *P. pictus*, 1.5 mi E of Wiggins, 4520', Morgan Co, 4 May, EARLY (previous 8 May)(RES). *P. pallidus pallidus*, Cheyenne Cn, EL PASO Co, SOUTH, 19 Jun and 11 Jul 1969 (RES, somehow I failed to report this); Winter Park, 8800', HIGH, Grand Co, 17 Jul (YPD,RES). *P. mylitta*, Cucharas Rvr in Walsenburg, 6250', HUERFANO Co, NORTH, SURPRISE, 13 Jul (RES); this and the previous species are widely sympatric on the W Slope, but remain separated by Pueblo Co on the E Slope—let's get the nets out while there's still time! *Euphydryas anicia capella*, Mt Zion, 7200', Jefferson Co, 29 May, EARLY (RES). *Polygonia interrogationis*, Northglenn, Adams Co, 20 Sep 1965 (BBB); 1 rag male, Limon, 5365', Lincoln Co, 28 Aug, the only one seen in 1992 (RES). *P. comma*, Indian Gulch, 6020', nr Clear Creek Cn, 2nd Jefferson Co record, 5 Jul (RES). *P. satyrus*, Johnson Park, 5500', nr 1-70/Wadsworth, Jefferson Co, 16 Mar, EARLY (previous 28 Mar)(RES). *P. gracilis* and *P. faunus*, nearly absent this year, why? (RES). *Nymphalis milberti*, very rare in 1992; 7 mi ESE of Monte Vista, 7620', ALAMOSA Co, 11 Jul (RES). *Vanessa atalanta*, 0.5 mi WNW of Alamosa, 7620', ALAMOSACO, 16 Aug; Park Crk Cg, 8500', US 160, MINERAL Co, 17 Aug; gallery forest N of Monte Vista, 7700', RIO GRANDE Co, 16 Aug (all RES). *V.*

virginianis, almost absent in 1992; my only sighting Bigelow Divide, 9600', CO 165, Custer Co, 15 Aug (RES); also rare fide JAS). *V. cardui* second consecutive explosion year all over the West, surely with millions of individuals flying over every square meter, but I still lack records for over 90 counties (not in CO); the parade was first documented by JAS in Jefferson Co, flying to the Northeast; RES joined on 30 Mar and found them abundant in Limon on 6 Apr; the migration ended in late Apr on the plains (all counties visited), but Jack McKenna, a local science teacher, reported billions of dead specimens on the snow at Rabbit Ears Pass on 2 May; they reappeared in a peculiar, stunted, dwarf population statewide in late May, then repeated generations of fresh, normal-sized individuals in Aug, Sep and Oct. Latest record was Jeff Co, 27 Oct (RES). *V. annabella*, rare until Sep, then common on prairies; Kit Carson, 4290', CHEYENNE Co, 24 Sep; Crowley, 4350', CROWLEY Co, 23 Sep; one seen clearly among 1800 *cardui* and 20 *antiopa* on blooming willows, W Kiowa Crk, 7000', 1.9 mi SW of Elbert, 2nd Elbert County record, 28 Apr, almost EARLY; 1 fresh, Clear Crk Cn, 5900', Jefferson Co, 24 Oct; Nee Granda Rsvr, 3950', KIOWA Co, 24 Sep; Jefferson Crk, 10200', (not HIGH), Park Co, 4 Jun; Lamar, 3600', PROWERS Co, 24 Sep (all RES). *Junonia coenia*, mouth of Clear Crk Cn, 5900', Jefferson Co, 14 Oct, LATE (previous 11 Oct); US 160, E side of Trinidad, 6025', LAS ANIMAS Co, 23 Sep (both RES). *Basilarchia a. astyanax*, fresh male, Stratton Park, 6400', HIGH!, Colo Spgs, EL PASO Co, WEST, 2nd STATE, 25 Jun 1991 (JIH, det confirmed from color photo/RES). *B. archippus*, Timpas Crk SWA, 2 mi SW of Swink, 4200', Otero Co, 11 May, EARLY (previous 19 May)(RES). *Adelpha bredowii*, Smith Crk Cg site, 7200', CO 96, CUSTER Co, 15 Aug, 1 fresh male (RES). *Anaea andria*, Frenchman Crk, 3720', 0.9 mi E of Holyoke, Phillips Co, 15 Jul (RES); 1 male seen, 1st gulch in Golden Gate Cn, 6400', JEFFERSON Co, WEST, HIGH (previous 6200')(ADW); nr Rocky Mtn Arsenal, 5100', Adams Co, 17 Aug 1970 (BBB). *Asterocampa celtis*, Northglenn, 5250', Adams Co, 11 Aug 1966 (BBB), rare and local east of the fthl canyons; Indian Gulch, 6100', Clear Crk Cn, Jefferson Co, 3 Jun, EARLY (previous 4 Jun)(RES). *Coenonympha ochracea*, Stonehocker Park, 5250', Northglenn, Adams Co, 29 Jun (BBB), also rare east of fthls. *Cercyonis pegala*, Crystola Crk, 7900', (not HIGH), ½ mi SW of Crystola, TELLER Co, 14 Aug (RES). *Erebia epixodea*, Mt Vernon Cn, 6800' (ties LOW), Jefferson Co, 15 Jun (JAS). *Oeneis uhleri*, fresh male, gulch N of US 285, 9550', 2.8 mi SW of Como, Park Co, 4 Jun, EARLY for elevation (ADW, RES). *Q. alberta*, ragged and nearly gone, same data as *uhleri*, EARLY demise (ADW, RES). *Q. jutta*, single rag, Winter Park, 8800', Grand Co, 17 Jul (RES, YPD). *Q. polixenes*, abundant, Horseshoe Mtn, 12000+', Park Co, 4 Jul (ADW). *Danaus plexippus*, few seen moving northward on W Sl late May, southward on E Sl Aug, and sedentary all over the plains Jun-early Oct; always rare above 8000'; gulch W of Frying Pan Rvr, 6800', 2.6 mi NE of Basalt, EAGLE Co, 25 May (?EARLY W Sl); southward flight nr Elbert, 6900', Elbert Co, 14 Aug; Park Crk Cg/US 160, 8500', HIGH, MINERAL Co, 17 Aug; CO 133, 1.6 mi S of Ga Co line, 6300', PITKIN Co, 25 May; Rio Grande Rvr/US 285, 7700', RIO GRANDE Co, 11 Jul and 16 Aug (all RES). *D. gilippus*, one each, Adams Co, 7 Jul and Jefferson Co, 5 Jul (YPD).

NEW MEXICO (NM): Contributors: SJC, CDF, JIH, RHL, FJP, KR, RES. Spring and summer were unusually rainy, so flowers were abundant but butterfly and moth numbers were down.

MOTHS: only 9 records. *Catocala euphemia*, *Sphingicampa hubbardi*, *Eucaterva variaria*, *Erinnyis domingonis* (STATE), Mangas Spgs, Grant Co, 9 Aug (CDF). *Litocala sexsignata*, Geronimo Pass Rd, 5800', Hidalgo Co, 26 Mar, flying in mid-afternoon with *Erynnis* spp (RES). *Malacosoma americanum*, in aspen-fir forest, Aspen Vista PG tr, 10200', Santa Fe Co, 10 Jul (RES). *Sphinx chersis*, flopping around in motel parking lot, Santa Fe, nr sunrise 11 Jul (RES). RHL found 80 moths on a cold, windy night, 3 May in Las Cruces, Dona Ana Co including the cossid *Comadia henrici henrici* and the psychid *Oiketicus townsendi* Townsend, the latter with an interesting tale about how it ended up being accidentally named for the man who described it.

BUTTERFLIES: 109 total records were received (70 spp) incl 4 STATE and 46 COUNTY records (40 spp), and several range and temporal extensions. NM now has 317 known spp and 108.10 avg spp/co, both highest in Zone 4, but is only 88.01% of projection. Hidalgo Co is now firmly in first place, as I predicted over 10 yrs ago, with 168 known spp; Grant Co is second with 161 spp, and a third of the counties are still under 100 spp. *Zestusa dorus*, Animas Mtns, Hidalgo Co, 13 Apr 1991 (SJC). *Urbanus dorantes*, Granite Pass, Hidalgo Co, 1 Aug, EARLY(SJC). *Autochton cellus*, Animas Mts, Hidalgo Co, 5 Sep, LATE (SJC). *Thorybes pylades*, Mestenito Cn, HARDING Co, 18 Apr (SJC); SANTA FE Co record reported last year was 8 Jun, NOT 8 Apr (SJC). *Cogia caicus*, Mangas Spgs, Grant Co, 14 Aug 1991 (CDF); Animas Mts, Hidalgo Co, 6 Sep, LATE (SJC). *Systasa zampa*, Big Pine Cn, CATRON Co, NORTH, 3 May (SJC). *Staphylus ceos*, fresh female at wet sand in shade, det verified by HAF and JAS, Black Bill Crk, S360', Animas Mts, Hidalgo Co, 26 Mar, EARLY (RES). *Erynnis brizo*, Caprock NNW of Tolar, DE BACA Co, now the 17th sp known from all NM counties, 21 Mar (SJC). *E. juvenalis clitus*, Animas Mts, Hidalgo Co, 3 Aug, LATE, probably 2nd brood (SJC). *E. meridianus*, Mestenito Cn, HARDING Co, NORTHEAST, 18 Apr (SJC). *E. scudderi*, Geronimo Pass, 5800', Peloncillo Mts, HIDALGO Co, STATE, ZONE, NORTH, 4 Aug 1986, det HAF/JAS, male collected by RES and living among *pacuvius* for 7 years! *E. horatius*, Caprock nr Ima, QUAY Co, SOUTHEAST, 28 Jun, odd date between usual flights (SJC). *E. afranius*, Potato Patch, Catron Co, 13 Aug 1991 (CDF). *E. persius*, Glorieta Baldy, SANTA FE Co, 4 Jul (SJC). *Pholisora catullus*, Animas Crk, 4700', 22 mi S of Animas, 24 Sep 1990, LATE (previous 19 Sep)(KR). *Yvretta carus*, Animas Rvr, Hidalgo Co, 2 Aug (SJC). *Stinga morrisoni*, Spring Cn, 6000', Florida Mts, LUNA Co, SOUTHWEST, 21-22 Mar 92 (JIH). *Hesperia comma*, Mt Taylor, CIBOLA Co, 25 Aug 1991 (SJC). *H. woodgatei*, Magdalena Mts, SOCORRO Co, 22 Sep 1991 (SJC). *H. viridis*, Caprock 10 mi N of Tolar, ROOSEVELT Co, SOUTHEAST, 17 May (SJC). *H. nevada*, Glorieta Baldy, SANTA FE Co, SOUTH, 4 Jul (SJC). *Atalopedes campestris*, Santa Rosa, GUADALUPE Co, 17 May (SJC). *Polites draco*, Big Tesuque Crk, Santa Fe Co, 16 Aug, LATE (SJC). *Anatrytone logan*, Santa Rosa, GUADALUPE Co, 19 Jul; Caprock 10 mi N of Tolar, ROOSEVELT Co, SOUTHEAST, 7 Jun, EARLY (both SJC). *Poanes melane vitellina*, Animas Mts, HIDALGO Co, STATE, ZONE, NORTH, 22 May and late summer (SJC). *Atrytonopsis vierecki* and *A. python*, Big Pine Cn, CATRON Co, 3 May (SJC). *Amblyscirtes texanae*, Mangas Spgs, Grant Co, 1 Aug 1991 (CDF). *Amblyscirtes nysa*, county rd 170, 4375', 19.8 mi W of Crossroads, LEA Co, SOUTHEAST, 13 May (RES); Caprock 10 mi N of Tolar, ROOSEVELT Co, 17 May (SJC). *A. eos*, Soda Pocket Cg, 8000', HIGH, COLFAX Co, 3 Sep (FJP). *A. phylace*, Mangas Spgs, Grant Co, 19 May 1991 (CDF). *Megathymus yuccae arizonae*, 1 mi E of Howe Camp, 5050', Gray Rch, Hidalgo Co, 26 Mar (SJC, RES). *Agathymus aryxna*, Animas Mts, Hidalgo Co, 6 Sep, EARLY (SJC). *Neophasia menapia* and *Pieris napi mogollon*, Bursum Rd, 8000-9200', Mogollon Mts, Catron Co, 10 Aug (CDF). *Pontia s. sisymbrii*, *Anthocharis sara inghami*, *Zerene cesonia*, Geronimo Pass Rd, S400-S800', Hidalgo Co, 26 Mar (SJC, RES). *Z. cesonia*, same data as *nysa*, LEA Co, SOUTHEAST (RES). *Eurema boisduvaliana*, Rock Hound SP, 4600', Little Florida Mts, LUNA Co, SOUTHWEST, 2nd STATE, Oct 1991 (JIH). *E. mexicana*, US 380, 4390', 1 mi E of Caprock, LEA/Chaves Co, 13 May (RES). *Ministrymon leda*, Rio Chama below monastery, RIO ARRIBA Co, NORTH, 21 Jun; Tesuque Crk, SANTA FE Co, 12 Jul (both SJC). *Chlorostymon simaethis*, would be a SR, but none were seen (see CA, AZ, NV, UT). *Mitoura spinetorum*, same data as *morrisoni*, LUNA Co, SOUTHWEST (JIH). *M. siva*, Caprock 10 mi N of Tolar, ROOSEVELT Co, SOUTHEAST, 28 Jun (SJC). *Sandia mcfarlandi*, Caprock 10 mi N of Tolar, ROOSEVELT Co, SOUTHEAST, 21 Mar (SJC). *Incisalia augustinus* and *Erora quaderna*, Mangas Spgs, Grant Co, 15-25 Apr (R. A. Fisher/CDF). *Fixsenia favonius ilavina*, Mangas Spgs, Grant Co, 3 Jun 1991 (R. A. Fisher/CDF). *Styrmion columella*, Cloverdale/Animas Crk area, HIDALGO Co, STATE, ZONE, NORTH, late summer, full data pending (KR). *S. bebyrcia*, Clanton Draw, HIDALGO Co, STATE, ZONE, NORTH, Jul (G. Babb/SJC). *Everes comyntas*, nr Gray Rch HQ, 5100', Hidalgo Co, 26 Mar, EARLY (SJC, RES). *Emesis zela*, Geronimo Pass Rd, 5800', Hidalgo Co, 26 Mar, EARLY (RES). *E. ares*, Animas Mts, Hidalgo Co, 4 Sep, LATE (SJC). *Calephelis arizonensis*, Granite Pass, Hidalgo Co, 4 Sep, LATE, second STATE record and 1st of 2nd brood (SJC). *Euptoieta hegesia*, same data as *boisduvaliana*, LUNA Co, EAST, 2nd STATE (JIH). *Poladryas minuta*, Caprock 10 mi N of Tolar, ROOSEVELT Co, SOUTHEAST, 17 May (SJC). *Thessalia theona*, Whitewater Cn, Catron Co, 13 May 1991 (R.A. Fisher/CDF). *T. fulvia*, Caprock 10 mi N of Tolar, ROOSEVELT Co, 7 Jun (SJC). *Chlosyne definita*, Rock Hound SP, 4600', Little Florida Mts, LUNA Co, SOUTHWEST, 2122 Mar, EARLY (previous 23 Mar)(JIH). *C. gorgone*, Santa Rosa, GUADALUPE Co, 17 May (SJC). *Dymasia dymas*, *Texala elada*, and *Phyciodes texana*, Big Pine Cn, CATRON Co, NORTHWEST, 3 May (SJC). *P. selenis* (tharos "B"), Bursum Rd, Mogollon Mts, 8000-9200', CATRON Co, SOUTHWEST, date pending (CDF). *P. mylitta*,

Caprock escarpment nr Ima, QUAY Co, 28 Jun; Caprock 10 mi N of Tolar, ROOSEVELT Co, SOUTHEAST, 17 May (both SJC). Euphydryas anicia hermosa, nr Gray Rch HQ, 5100', Hidalgo Co, 26 Mar, EARLY (SJC, RES). Polygonia satyrus, Santa Rosa, GUADALUPE Co, SOUTHEAST, 19 Jul (SJC). Vanessa cardui (many) and V. virginianensis (2), Bursum Rd, 8000-9200', Mogollon Mts, Catron Co, 10 Aug (CDF). Basilarchia archippus, Santa Rosa, GUADALUPE Co, 17 May (SJC). Adelpha bredowii, Black Bill Crk, 5450', Animas Mts, Hidalgo Co, 29 Apr 1991, EARLY (RWH, RES); 10 mi N of Tolar, ROOSEVELT Co, SOUTHEAST, 19 Jul (SJC). Anaea andria, several fresh, Mangas Spgs, Grant Co, 14 Aug 1991 (CDF); 10 mi SE of Santa Fe, SANTA FE Co, 26 Apr (SJC). Asterocampa celtis montis, Catwalk nr Glenwood, Catron Co, 22 May 1991 (R.A. Fisher/CDF). A. clyton, Gila Rvr nr Cliff, GRANT Co, NORTH, 3 Sep (SJC). Megisto rubricata, Animas Mts, Hidalgo Co, 22 May, EARLY (SJC). Cercyonis pegala, Caprock 10 mi N of Tolar, ROOSEVELT Co, SOUTHEAST, 28 Jun, EARLY (SJC). Gyrocheilus patrobas, Spring Cn, 6000', Florida Mts, LUNA Co, SOUTHEAST, Oct 1991 (JIH). Danaus gilippus, Animas Mts, Hidalgo Co, '26 Mar, EARLY (SJC, RES). EPILOGUE. This year's Zone 4 Summary is completed in remembrance of Ruth Grey, a wonderful lady and wife of L. Paul Grey. She died in Oct 1992, and a brief note is in the Metamorphosis section of this issue. Occasia rarissima est.

ZONE 5: THE PLAINS: SASKATCHEWAN, MANITOBA, NORTH DAKOTA, SOUTH DAKOTA, NEBRASKA, KANSAS.

Coordinator: Ronald Alan Royer (RAR).

Contributors: Brian Berendes (BB), Neil E. Dankert (NED), Clifford D. Ferris (CDF), E. A. Froemel (EAF), Jeff Germer (JCG), Paul Hammond (PCH), Ronald R. Hooper (RRH), John Jordison (JCI), Abran J. Kean (AJK), Joseph E. Kean (JEK), Robert J. Kean (RJK), Paul Klassen (PK), John Koziak (JK), Ron Leuschner (RHL), Doug Long (DRL), Anne Nagel (ANN), Harold Nagel (HGN), Bob Neugebauer (BN), Timothy T. Orwig (TTO), Barbara Padelford (BKP), Loren Padelford (LJP), Barbara Peitzmeier (BAP), Jim Reiser (JMR), Emily Rieur (ER), Steve Spomer (SMS), James Strand (JS), Kit Stanford (KAS), Ray Stanford (RES), Peter Taylor (PT), Nick Theis (NDT), Stephen G. Williams (SGW). Abbreviations: GPA = Game Production Area; I-80 = Interstate 80; Res = Reservoir; TNC = The Nature Conservancy; > = more than; c = collected; s = seen. Capital letters indicate first record of occurrence.

SASKATCHEWAN (SK): An unusually cool summer, with butterflies uncommon except for spring migrants of Vanessa cardui, which began to arrive on 30 Apr (early for SK). Provincial Coordinator: Ronald R. Hooper. Contributor: JK.

MOTHS: SPHINGIDAE - Hemaris gracilis, NE of Hudson Bay (2nd SK record), 13 Jun (JK). NOCTUIDAE - Autographa pseudogamma, Wildcat Hill Wilderness Area (3rd SK record), 11 Jul (RRH). Trichoplexia exornata, Wildcat Hill Wilderness Area (2nd SK record), 6 Jul (RRH, JK). Polia rogenhoferi, Wildcat Hill Wilderness Area (2nd SK record), 8 Jul (JK). Polia propodea, Wildcat Hill Wilderness Area (PROVINCE--first record for prairie provinces of Canada), 8 Jul (JK). Anartomima secedens, Wildcat Hill Wilderness Area (2nd SK record), 7 Jul (RRH, JK).

MANITOBA (MB): Spring began slowly in S MB, but May was warm. Jun was dry, but the summer turned cold and moist -- the coldest on record. Most species were scarce from Jul onward, with one exception noted below. PK reports never having experienced such a dismal summer. On some trips not a single specimen was taken and very few were seen. Most Hesperidae, Pieridae, Lycaenidae, Speyeria, Polygonia, and Nymphalis were scarce. Many species flew two weeks later than usual, and six record late flight dates were recorded for MB. RAR reported that Churchill apparently did not have a summer in 1992, with floe ice filling the Churchill Rvr Estuary well into Jul. Churchill locals reported that none had seen so late a spring in their lifetimes, and despite several brisk days with bright sun, all butterfly species were rare during the second week in Jul there. Provincial Coordinator: PK. Contributors: PT, RAR. Records not otherwise designated are attributable to PK.

MIGRATORY SPECIES: There was a strong migration of Vanessa cardui. First seen on 27 Apr, it was common to abundant from early May through late Jun. PT counted 37 individuals during lunch hour near Pinawa, 19 May. Few were seen after late Jun, however. In contrast, Vanessa atalanta, first seen on 10 May, was generally common and locally quite abundant. On 21 Jul, PT counted 700 in a 2km area near Pinawa (nearly 98 % of butterflies seen that day). Danaus plexippus was generally less common than usual and especially scarce in SE MB, where PT saw the last example on 1 Oct.

BUTTERFLIES: Epargyreus clarus, 1s, Pinawa, 9 July (PT). Thorybes pylades, usually very common, was rarely seen. Erynnis icelus, locally common at Elm Crk, 27 May -- the only examples of this usually common species seen throughout the season. E. juvenalis, 8c, Elm Crk, 27 May. Pyrgus centaureae, only 1c, Churchill, 12 Jul (RAR). Ancyloxypha numitor, 1c, Northwest Angle PF, 11 Jul. Thymelicus lineola, uncommon, Northwest Angle PF, 11 Jul and 14 Aug (LATE). Hesperia comma assiniboia, locally common, Pine Ridge, 28 Aug. H. sassacus manitoboides, 1c, Lk Brereton, 20 Jul. Polites peckius, 1c, Northwest Angle PF, 31 Jul. P. themistocles, rare, Northwest Angle PF, 11 Jul. P. mystic dacotah, Northwest Angle PF, 11 Jul, fairly common but the only time seen this year. Atrytone logan, 1c, Tolstoi (new locality), 31 Jul (LATE). Euphyes vestris metacomet, the most common hesperiid this year, Northwest Angle PF, 31 Jul; Elm Crk, 29 Jul; Milner Ridge, 13 Aug; Lk Brereton, 13 Aug; Pinawa, 20 Aug (LATE) (PT). Papilio canadensis, was less common, with a later flight period than usual. Pieris napi oleracea, 1c, Lk Brereton, 20 Jul; 1c, Northwest Angle PF, 31 Jul; uncommon but fresh at Churchill, 7-15 Jul (RAR). Colias philodice and C. eurytheme, uncommon in spring, common in fall. C. interior, 6c, Northwest Angle PF, 11-31 Jul; 1c, Lk Brereton, 20 Jul. No Colias spp. were encountered at Churchill. Lycaena epixanthe michiganensis, locally common at Milner Ridge, 13 Aug (LATE), with some freshly emerged examples that probably flew at least another week. L. dorcas, locally common, Vita, 31 Jul; Milner Ridge, 13 Aug. L. xanthoides dione, 4c, Culross, 22 Jul. L. hylus, 2c, Culross, 22 Jul; 1c, Northwest Angle PF, 31 Jul. Harkenclenus titus titus, uncommon, 1pr in copulo, Pine Ridge, 28 Aug (LATE). Satyrrium acidicum, locally uncommon, Northwest Angle PF, 31 Jul; Lk Brereton, 13 Aug. S. edwardsii, 2c, Elm Crk, 29 Jul. Celastrina argiolus, 1c, Northwest Angle PF, 11 Jul; fairly common in taiga zone at Churchill, 7-15 Jul (RAR). Glaucopsyche lygdamus, 1c, Northwest Angle PF, 11 Jul; somewhat worn, Churchill, 7-15 Jul (RAR). Plebejus saepiolus, uncommon many areas but a modest flight at Pinawa, 26 Jun to 13 Jul (PT). Euptoieta claudia, 1s, Northwest Angle PF, 11 Jul. Speyeria cybele pseudocarpenteri, 1c, 2s all season. S. aphrodite, uncommon. S. atlantis hollandi, uncommon. Boloria eunomia dawsoni, 1s, Seven Sisters, 5 Jul (PT); 1c, very fresh, Churchill, 12 Jul (RAR). B. selene atrocotalis, uncommon. B. bellona toddi, only a few seen of this usually very common species. B. frigga, uncommon at Churchill, all fresh and extremely dark (including one nearly all-black female), 10-15 Jul (RAR). B. freija, uncommon at Churchill, condition highly varied, 7-15 Jul (RAR). B. titania, 3c, Northwest Angle PF, 14 Aug; 3c, Sandilands PF, 14 Aug. C. harrisii, 3s, Seven Sisters, 5 Jul (PT). P. pascoensis, uncommon, usually abundant. Polygonia progné, 1c, Milner Ridge, 13 Aug; 1c, Northwest Angle PF, 14 Aug; small flight at Pinawa, 6 Aug-11 Sep (PT). N. antiopa, 3-4 seen all season (PK); uncommon and worn at Churchill, 7-15 Jul (RAR). Vanessa cardui, fairly common, but very worn at Churchill, 7-15 Jul (RAR). Limenitis arthemis, uncommon. L. archippus, 1c, Northwest Angle PF, 11 Jul. Satyrus eurydice, locally fairly common, Northwest Angle PF, Milner Ridge and Elm Crk. Coenonympha tullia fairly common at Pinawa (PT); uncommon, Northwest Angle PF; Milner Ridge, 13 Aug (LATE). Cercyonis pegala, common in S MB 20 Jul to 28 Aug. Erebia discoidalis, 1c, Churchill, 10 Jul (RAR). E. rossii, 3c, all fresh,

Churchill, 12 & 13 Jul (RAR). E. disa, 1c, very fresh, Churchill, 12 Jul (RAR). Oeneis jutta, 1s, very fresh, Churchill, 13 Jul (RAR).

NORTH DAKOTA (ND): The summer was cool to cold, and most emergences were very late. Few reports were submitted. Collecting was generally reported as poor. Noteworthy were certification of a 17th county for Hesperia dacotae, and a northwesternmost record for the "hybrid admiral" (B. a. arthemis x B. a. astyanax). Both the latter taxa, plus B. weidemeyerii are now known to have occurred within but a few miles of one another in south-central ND. All 1992 county records are reported here. Correction: The following 1990 Season Summary records from MORTON Co, 16 Aug should be corrected to OLIVER Co, 16 Aug. Hesperia uncas, Hesperia comma, Hesperia pawnee, Pterourus glaucus. State Coordinator: RAR. Contributors: BN, TTO, JS. Records not otherwise designated are attributable to RAR.

BUTTERFLIES: Thorybes pylades, EMMONS Co, 31 May (BN). Pyrgus communis, Cross Rch TNC Preserve, OLIVER Co, 3 Jul (TTO). Pholisora catullus, TRAILL Co, 7 Jun (JS). Oarisma garita, Cross Rch TNC Preserve, OLIVER Co, 4 Jul (TTO). Hesperia ottoe, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO). Hesperia dacotae, 3c, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO). Polites mystic, Cross Rch TNC Preserve, OLIVER Co, 3 Jul (TTO). Atalopedes campestris, Cross Rch TNC Preserve, OLIVER Co, 3 July (TTO). Atrytone logan, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO). Euphyes uricola, BURLEIGH Co, 23 Jul (BN). Pontia protodice, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO). Artogeia rapae, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO). Hylolycaena hyllus, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO); BURLEIGH Co, 19 Sep (BN). Harkenclenus titus, EMMONS Co, 11 Jul (BN). Incisalia polia, MOUNTRAIL Co, 17 May. Celastrina argiolus, MOUNTRAIL Co, 17 May. Lycaeides melissa, Cross Rch TNC Preserve, OLIVER Co, 3 Jul (TTO). Euptoieta claudia, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO). Speyeria cybele, Cross Rch TNC Preserve, OLIVER Co, 3 Jul (TTO). Speyeria callippe, 2 worm males c, Cross Rch TNC Preserve, OLIVER Co, 3 Jul (TTO). Charidryas gorgone, EMMONS Co, 29 May (BN). Charidryas nycteis, TRAILL Co, 21 Jun, 1991 (JS). Phyciodes tharos, TRAILL Co, 21 Jun, 1991 (JS). Vanessa cardui, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO). Vanessa annabella, BURLEIGH Co, 23 Oct (BN). Vanessa atalanta, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO). Basilarchia arthemis arthemis x Basilarchia a. astyanax, BURLEIGH Co, NORTHWEST for "hybrid," 8 Jul (BN). Basilarchia archippus, EMMONS Co, 16 Jun, 1991 (JS); also 29 May, 1992 (BN). Coenonympha inornata, TRAILL Co, 7 Jun (JS). Danaus plexippus, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO).

MOTHS: SPHINGIDAE - Proserpinus juanita, Cross Rch TNC Preserve, OLIVER Co, 3,4 Jul (TTO).

SOUTH DAKOTA (SD): Unseasonably warm temperatures in late Apr and early May possibly caused early emergence of several species, but overall this was a poor year for butterflies in SD. CDF reports that in the Black Hills, 6-19 Jul, "butterfly diversity was low, and most species seemed to have failed this season. Not a single Papilio was sighted in Lawrence Co., and very few Speyeria, which are usually common." One state record was reported. The 1992 migration of Vanessa cardui in SD was even more impressive than in 1991. On 30 Apr, when mid-day temperature approached 90° F, 75-100 individuals were observed nectaring on wild plum near the Oahe Dam in Stanley Co, and by 1-2 May, hundreds were seen nectaring at dandelion in GMM's yard and vicinity. There was an early record for Parnassius phoebus sayii; males common, with a few fresh females, at Mt Roosevelt, Lawrence Co, 6 Jun. There was also an early record for Papilio polyxenes asterias, with one female near Farm Is SP, Hughes Co, 30 Apr. State Coordinator: GMM. Contributors: BB, CDF, AJK, JEK, RJK, TTO. Records not otherwise designated are attributable to GMM.

BUTTERFLIES: Epargyreus c. clarus, UNION Co, 29 Aug (AJK). Pyrgus communis, BUFFALO Co, 16 Jul (AJK); JERAULD Co, 18 Jul (AJK); McCOOK Co, 31 Aug. Pholisora catullus, GREGORY Co, 26 Jul; SANBORN Co, 18 Jul (AJK); UNION Co, 29 Aug (AJK). Ancyloxypha numitor, Gary Crk GPA, DEUEL Co, 3 Jul (AJK); LINCOLN Co, 30 Aug. Hesperia ottoe, 4 c, UNION Co, 30 Jul (TTO). Hesperia dacotae, 1 female s, Crystal Spgs Nature Conservancy Area, Deuel Co, 3 Jul. Polites origines, HANSON and UNION Cos, 30 Jul (TTO). Atalopedes c. campestris, CHARLES MIX Co, 25 Jul; Gregory Co, 26 Jul; TRIPP Co, 24 Jul. Atrytone logan lagus, JERAULD Co, 18 Jul (AJK); LAKE Co, 13 Jun (AJK). Poanes h. hobomok, Gary Crk GPA, DEUEL Co, 3 Jul (AJK); LAKE Co, 23 Jun (AJK); STANLEY Co, 29 May; TRIPP Co, 25 Jul. Euphyes vestris kiawah, 1 c, TRIPP Co, 25 Jul (BB). Amblyscirtes vialis, LINCOLN Co, 30 Aug. Papilio polyxenes asterias, BROWN Co, 5 Jul (AJK); UNION Co, 30 Jul (TTO). Heraclides cresphontes, UNION Co, 29 Aug. Pterourus g. glaucus, JERAULD Co, 18 Jul (AJK); TRIPP Co, 25 Jul; UNION Co, 29 Aug. Pontia protodice, 1 c, CORSON Co, 10 May (AJK); GREGORY Co, 26 Jul. Pieris rapae, ORSON Co, 10 May; JERAULD Co, 18 Jul (AJK); SANBORN Co, 18 Jul (AJK). Euchloe olympia, CORSON Co, 10 May. Colias philodice, SANBORN Co, 18 Jul (AJK); TRIPP Co, 24 Jul. Colias eurytheme, CORSON Co, 10 May; TRIPP Co, 24 Jul. Colias a. alexandria, 1 male c, Cottonwood Spgs Recreation Area, Fall Rvr Co, 24 May (AJK). Zerene c. cesonia, 4 males c, CHARLES MIX Co, 26 Jul; 1 worm female c, CORSON Co, 10 May; GREGORY Co, 26 Jul; SANBORN Co, 18 Jul (AJK); UNION Co, 29 Aug. Eurema mexicana, one worm example, CORSON Co, 10 May (AJK). Nathalis iole, 1 fresh male c, Black Hills NF, Lawrence Co, 6 Jul (CDF). Gaeides xanthoides dione, BUFFALO Co, 16 Jul (AJK); CHARLES MIX Co, 25 Jul. Hylolycaena hyllus, UNION Co, 29 Aug. Harkenclenus titus, UNION Co, 30 Jul (TTO). Satyrrium calanus godarti, CHARLES MIX Co, 26 Jul. Mitoura grynea, 0.5 mi N. of Richland, UNION Co, STATE, 30 Jul (TTO). Strymon melinus atrofasciatus, CHARLES MIX Co, 25 Jul. Everes c. comyntas, BROWN Co, 5 Jul; CHARLES MIX Co, 26 Jul; HANSON Co, 31 Aug. Glaucopsyche lygdamus oro, CORSON Co, 10 May (AJK). Speyeria idalia, 1 female s, LINCOLN Co, 30 Aug. Clossiana bellona toddi, BROWN Co, 5 Jul. Charidryas gorgone carlota, BROWN Co, 5 Jul; BUFFALO Co, 16 Jul (AJK); CHARLES MIX Co, 26 Jul; UNION Co, 30 Jul (TTO). Charidryas n. nycteis, Gary Crk GPA, DEUEL Co, 3 Jul. Phyciodes t. tharos, CHARLES MIX Co, 26 Jul; Sanborn Co, 18 Jul (AJK). Nymphalis antiopa, CORSON Co, 10 May (AJK); LINCOLN Co, 30 Aug. Vanessa virginiensis, UNION Co, 29 Aug. Vanessa cardui, very abundant, AURORA Co, 17 Jul (AJK); CLARK Co, 16 May (RJK); CORSON Co, 10 May; common, EDMUNDS Co, 8 May; HAND Co, 16 May (AJK); HANSON Co, 31 Aug; JERAULD Co, 18 Jul (AJK); SANBORN Co, 18 Jul (AJK); TRIPP Co, 25 Jul; UNION Co, 29 Aug. Vanessa atalanta, GREGORY Co, 26 Jul; SANBORN Co, 18 Jul (AJK). Junonia coenia, CHARLES MIX Co, 25 Jul; 1 male c, TRIPP Co, 25 Jul (BB); one worm example, UNION Co, 29 Aug. Basilarchia arthemis astyanax, LAKE Co, 13 Jun (AJK); UNION Co, 29 Aug. Basilarchia archippus, BROWN Co, 5 Jul. Asterocampa c. celtis, HANSON Co, 31 Aug; TRIPP Co, 25 Jul. Asterocampa c. clyton, UNION Co, 30 Aug. Megisto c. cymela, AURORA Co, 17 Jul (AJK); Gary Crk GPA, DEUEL Co, 3 Jul (AJK); JERAULD Co, 18 Jul (AJK); SANBORN Co, 18 Jul (AJK); STANLEY Co, 19 Jul; TRIPP Co, 25 Jul. Coenonympha tullia, Gary Crk GPA, DEUEL Co, 3 Jul (JEK); FALL RIVER Co, 24 May (AJK); LAKE Co, 13 Jun (AJK). Cercyonis pegala, BUFFALO Co, 16 Jul (AJK); SANBORN Co, 18 Jul (AJK). Oeneis uhleri, POTTER Co, 1 female, 10 May. Danaus plexippus, HANSON Co, 31 Aug; TRIPP Co, 24 Jul; >200 individuals roosting in cedar trees at 10:30 am, Union Co, 29 Aug.

NEBRASKA (NB): "A terrible year all around: overly cool, wet and cloudy," according to EAF. The abrupt onset of winter in 1991, a late spring freeze and blizzard, and one of the coolest, wettest summers on record are all presumed contributors to a dismal 1992 collecting season. Not only was diversity down from 1991, but numbers were often severely depressed. Three notable exceptions were Harkenclenus titus, Thessalia fulvia, and Neominois ridingsii. A total of 116 butterfly spp. were observed in the state in 1992, with 106 county records and one state record tallied. This compares with 127 spp., 225 county records, and three state records in 1991. RES now lists 197 spp. for the state, with an average of 44.78 per county. Moth collecting was also adversely affected by the weather. In spite of this, 27 spp. were added to Rosche's 1989 "Partial List of Nebraska Moths," bringing the state total to 611 -- still estimated at less than half the actual total. Special thanks go to RHL for moth determinations. State Coordinator: NED. Contributors: EAF, JCG, PCH, JCY, RHL, DRL, ANN, HGN, TTO, BKP, LJP, BAP, JMR, ER, SMS, KAS, RES, NDT.

MIGRANTS and STRAYS: *Erynnis funeralis*, 1c, Furnas Co, 23 Aug (DRL). *Hylephila phyleus*, 8c, Furnas Co, 23 Aug-27 Sep (DRL). *Lerodea eufala*, 1c, DAWSON Co, 23 Aug (JMR); 1c, GAGE Co, 16 Oct (NDT). *Calpodex ethlius*, larvae found, LANCASTER Co, STATE, several dates in Jun (ER via SMS). *Battus philenor*, 1c, Lancaster Co, 13 May (JMR). *Zerene cesonia*, 11 widespread records, new from CHEYENNE, JEFFERSON and WEBSTER Cos, mostly early May to mid-Jul (NED, DRL, HGN, NDT, JMR, SMS). *Phoebus sennae*, uncommon to locally common in eastern areas, 11 May-21 Oct (JCI, BKP, LJP, SMS). *Kricogonia lyside*, 1c in GAGE Co, and 1c YORK Co, 2, 4 May (NDT). *Eurema mexicana*, 1c, HARLAN Co, 3 May; 1c WEBSTER Co, 7 Jul (NED). *Eurema lisa*, 1c, FRANKLIN Co, 7 Jul (NED). *Eurema nicippe*, 1c, DAWSON Co, 29 Jul (JMR). *Nathalis iole*, common from late Jun onward, earliest 3 May, latest 16 Nov. *Hemiargus isola*, locally common after late Jun (NED). *Libytheana bachmanii*, 4s at mud, SAUNDERS Co, 7 Aug (SMS). *Agraulis vanillae*, 1c, THAYER Co, 20 Jun (NDT). *Phyciodes texana*, 1c, THAYER Co, 20 Jun (NDT). *Danaus plexippus*, average year with first adult 3 May and fall migration peak ca. 13 Sep (NED, DRL, BKP, SMS). *Danaus gilippus*, 1c, Furnas Co, 6 Jul (DRL).

BUTTERFLIES: *Staphylus hayhurstii*, 1c, Harry Strunk Lk, FRONTIER Co, 9 Jun 1991 (DRL). *Erynnis baptisiae*, 1c, Harry Strunk Lk, FRONTIER Co, 26 Apr (DRL); s, I-80W rest area, YORK Co, 30 Jun (KAS, RES); 1c, Ash Hollow SHP, GARDEN Co, 15 Jun 1991 (JCG). *Hesperia uncas*, 3c, 1 mi E Miller Cemetery, GOSPER Co, 30 Aug (DRL). *Hesperia ottoe*, 1c, Cather Prairie, WEBSTER Co, 7 Jul (ANN); 4c, Platte Rvr bluffs, SARPY Co, 3 Jul (SMS). *Hesperia leonardus pawnee*, 5c, Calamus Res, LOUP Co, 20 Aug (SMS); 2c nr Homer, DAKOTA Co, 6 Sep (TTO); 1c, 2 mi E Upland, FRANKLIN Co, 13 Sep (NED). *Polites origenes*, 6c, Platte Rvr bluffs, SARPY Co, 3 Jul (SMS). *Wallengrenia egeremet*, 1s, Nine Mile Prairie, LANCASTER Co, 11 Jul (Xerces Count). *Pompeius verna*, 1c, 5 mi E Hebron, THAYER Co, 20 Jun (NDT). *Atrytone arogos*, 1c, Cather Prairie, WEBSTER Co, 7 Jul (HGN). *Euphyes bimacula*, 1c, 8 mi E Merriman, CHERRY Co, 30 Jun (JMR). *Papilio bairdii*, 5 larvae found and reared on *Musineon tenuifolium* nr. Scottsbluff, SCOTTS BLUFF Co, 25 May (NDT, JMR); 2 larvae collected S of Oshkosh, GARDEN Co by PCH. *Euchloe olympia*, 1c nr Beatrice, GAGE Co, 6 May (NDT). *Epidemia helloides*, 1c, 7 mi N, 3 mi W Shelby, POLK Co, 3 Jun (NDT). *Harkenclenus titus*, more common than usual, with new records from THAYER, YORK, HARLAN and FURNAS Cos, 20 Jun-19 Jul (NED, DRL, NDT). *Satyrium acidicum*, s/c, Hwy 34 at Platte Rvr, HALL Co, 30 Jun (KAS, RES). *Satyrium liparops*, 1c, Limestone Bluffs WMA, FRANKLIN Co, 7 Jul (NED); 1c, 1 mi S North Platte, LINCOLN Co, 25 Jul (JMR). *Mitoura grynea*, 1c, 2 mi NW of Beatrice, GAGE Co, 1 May (NDT). *Incisalia henrici*, 1c, 2 mi NW of Beatrice, GAGE Co, 1 May (NDT); 1c, 2 mi N Steele City, JEFFERSON Co, 5 May (NDT). *Icaricia acmon*, 1c, 1 mi N Gallagher Cn SRA, DAWSON Co, 23 Aug (JMR). *Thessalia fulvia*, more numerous in established colonies, with several new western records: 1c, Crescent Lk area, GARDEN Co, 23 May; 1c, Bull Cn, BANNER Co, 14 Jun; 1c, I-80E rest area nr Sidney, CHEYENNE Co, 18 Jul (all JMR). *Polygonia zephyrus*, larva found and reared, Bull Cn, BANNER Co, emerged 14 Jun (JMR). *Polygonia progne*, 1c, S of Oshkosh, GARDEN Co, 21 Sep (JMR). *Vanessa cardui*, large spring flight, often gathering en masse on nectar sources - many hundreds of adults nectaring on chokecherry flowers, Harlan Co Res, Harlan Co, 3 May (NED). *Basilarchia weidemeyerii*, larvae c nr Reddington, MORRILL Co, 31 Jul (JMR). *Satyroides eurydice*, 1c, 2 mi NE of Dannebrog, HOWARD Co, 10 Jul (NED). *Neominois ridingsii*, >125c/s, Crescent Lk area, Garden Co, 23 May (NED, JMR).

MOTHS: Knox Co records are from BAP. All other records are from NED and Buffalo Co, unless noted otherwise. All determinations are by RHL. New species for the state are as follows: PYRALIDAE - *Argyria nummulalis*, KNOX and BUFFALO Cos, 23 Jun 1990 and 8 Jun. *Pyralis farinalis*, KNOX Co, 30 Sept 1984. GEOMETRIDAE - *Semiothisa delectata*, 22 Jul 1989. *S. irrorata*, 15 Jun 1989. *Sicya macularia*, KNOX Co, 23 Jun 1990. *Eupithecia miserulata*, 11 May 1988. NOCTUIDAE - *Idia aemula*, 10 Jun. *Hormisa orciferalis*, 18 Jun. *Drasteria ingeniculata*, GAGE and KNOX Cos, 14 May 1988 and 23 Jun 1990. *Matigramma pulverilinea*, 10 May 1986. *Zale phaeocapna*, GAGE Co, 14 May 1988. *Catocala clintoni*, KNOX Co, 6 Jul 1990. *Acronicta vinnula*, 29 Apr 1987. *A. inclarata*, BROWN Co, 2 Jun 1986. *Apamea vulgaris*, 13 Jun. *Crymodes burgessi*, 6 Sep. *Oligia mactata*, 10 Sep. *Meropleon titan*, 20 Jun 1986. *Ipimorpha pleonectusa*, KNOX Co, 13 Jul 1990. *Platyperigea meralis*, 14 Sep. *Elaphria festivoides*, 1 May. *Cucullia intermedia*, KNOX Co, 3 Jul 1991. *Polia detracta*, 13 Jun. *Euxoa tessellata*, KNOX Co, 7 Jul 1990. *E. ridingsiana*, 27 Sep. *Euagrotis tepperi*, 20 May. *Rhynchagrotis anchocelioides*, KNOX Co, 19 Sep 1989.

KANSAS (KS): A single brief report was received this year. All records are attributable to SGW.

BUTTERFLIES: A single bed of zinnias yielded the following Hesperidae at Lindsborg, McPherson Co, 2 Oct. *Epargyreus clarus*, *Polites coras*, *Polites themistocles*, *Atalopedes campestris*, *Euphyes ruricola*, *Hylephila phyleus*. Other spp. from Lindsborg, 2 Oct, are *Pieris rapae*, *Colias eurytheme*, *C. philodice*, *Loebis sennae eubule*, *Zerene cesonia*, *Agraulis vanillae*, *Speyeria cybele*, *Phyciodes tharos*, *Polygonia interrogationis*, and *Anaea andria*. *Danaus plexippus* was observed in the following counties along Interstate Hwys 70 and 35, all on 2 Oct: Trego, Ellis, Russell, Ellsworth, Saline, McPherson, Harvey, Sedgwick, and Sumner.

MOTHS: PYRALIDAE - *Urola nivalis*, nr Wellington, Sumner Co, 2 Oct. NOCTUIDAE - *Cucullia asteroides*, Goodland, Sherman Co, 1 Oct. *Faronta diffusa*, Goodland, Sherman Co, 1 Oct. *Pseudaletia unipuncta*, Goodland, Sherman Co, 1 Oct; Salina, Saline Co, 2 Oct; Lindsborg, McPherson Co, 2 Oct; Wichita, Sedgwick Co, 2 Oct; and nr Wellington, Sumner Co, 2 Oct. *Euxoa auxiliaris*, Goodland, Sherman Co, 1 Oct. *E. redimicula*, Goodland, Sherman Co, 1 Oct.

ZONE 6: SOUTH CENTRAL: OKLAHOMA, TEXAS, ARKANSAS, LOUISIANA.

Coordinator: Ed Knudson (ECK)

Contributors: Charles Bordelon (CB), Richard Boscoe (RB), Steven Bransky (SB), Joseph Doyle III (JD), Gary Gier (GG), James Gillaspay (JG), Cecil Harp (CeH), Chuck Harp (CH), Michael Israel (MI), Jeremy Kuhn (JK), Ron Leuschner (RL), Martin Off (MO), Russell Rahn (RR), Killian Roever (KR), Ray Stanford (RS), Robert Warren (RW), Stephen Williams (SW). bait = bait trap or station, sight or photo (sight or photo record, no specimen taken (This coordinator assumes a specimen exists for each record, unless specified otherwise by contributor), ? = questionable determination.

OKLAHOMA (OK): Contributors (GG, CeH, CH, KR, RW). John Hyatt (JH), also included in CH's group report. *Appias drusilla*, a tropical stray, is a new STATE record. There were no moth reports.

BUTTERFLIES: *Epargyreus clarus*, LINCOLN CO, N of Carney, 24 Aug; LOGAN CO, S of Crescent, 25 Aug (JH). *Cogia outis*, OKLAHOMA CO, Luther, 25 Apr (CH). *Erynnis juvenalis*, CADDO CO, W of Boone, 16 Apr (CH, Ceh). *Erynnis baptisiae*, MURRAY CO, Sulphur, 22 Mar (CH); LEFLORE CO, Billy Crk Camp, 9 Jun (GG). *Pyrgus communis*, CADDO CO, W of Boone, 16 Apr (CH, CeH); GARVIN CO, N of Elmore City, 23 Sep (CH). *Pholisora catullus*, GARVIN CO, N of Elmore City, 23 Sep; Quartz Mt SP, GREER CO, 12 Sep; 8 mi E of Hinton, CANADIAN CO, 11 Jul (all CH). *Lerema accius*, N of Elmore City, GARVIN CO, 23 Sep (CH). *Ancyloxypha numitor*, N of Chandler city lk, LINCOLN CO, 1 June (CH). *Hesperia attilus*, 2 mi E of Cement, CADDO CO, 24 May;

NOBLE CO, I-35 N, 12 Jun, (GG). Polites origenes, LEFLORE CO, Billy Crk Camp, 9 Jun (GG). Polites themistocles, LINCOLN CO, N of Carney, 24 Aug (JH); GARVIN CO, N of Elmore City, 23 Sep; GREER CO, Quartz Mt SP, 12 Sep (CH). Wallengrenia otho, and Wallengrenia egeremet, LOGAN CO, 5 mi E of Guthrie, 25 Aug (JH). Atalopedes campestris, LINCOLN CO, N of Carney, 24 Aug (JH). Atrytone arogos iowa, LOGAN CO, S of Crescent, 25 Aug (JH); NOBLE CO., I-35 N, 12 Jun (GG). Atrytone logan, LINCOLN CO, N of Carney, 24 Aug (JH). Poanes zabulon, CANADIAN CO, 8 mi E of Hinton, 1 Apr (CH). Atrytonopsis vierecki, Amblyscirtes aenus, A. oslari, A. eos, Cimarron Co, Black Mesa SP, 23 May (RW, CH). Amblyscirtes belli, CADDO CO, W of Boone, 16 Apr (CH, CeH); LOGAN CO, E of Guthrie, 25 Aug, (JH). Amblyscirtes alternata, OKLAHOMA CO, Luther, 16 Apr, det H.A.Freeman,(CH). Lerodea eufala, COMANCHE CO, N of Lawton, 12 Sep; KIOWA CO, Quartz Mt SP, 12 Sep; GARVIN CO, N of Elmore City, 23 Sep; NOBLE CO, 1 mi SE Lk McMurtry, 31 Oct (all CH); LOGAN CO, S of Crescent, 25 Aug (JH). Megathymus coloradensis stallingsii, LOGAN CO, 4 mi E of Coyle, 11 Mar, ex larvae, (CH); SEMINOLE CO N of Konawa, 14 Mar, ex larvae and pupae; POTTAWATTOMIE CO, E of Asher, 14 Mar, ex pupae; CADDO CO, 1 mi E of Cogar, 1 Apr; CANADIAN CO, 8 mi E of Hinton, 1 Apr; PAYNE CO, 3 mi N of Coyle, 11 Mar; LINCOLN CO, N of Wellston, 7 Mar, ex pupa (all CH); PITTSBURG CO, Lk Eufala, ex pupae, emerg 22 Mar - 10 Apr (RW). Megathymus texanus, OKLAHOMA CO, Arcadia, 17 Mar, ex pupae, EASTERN RANGE EXT (KR). Appias drusilla, STATE, OKLAHOMA CO, Luther, 18 April, (worn example taken in hickory/oak forest) (CH). Pontia protodice, MAJOR CO, S of Fairview, 23 Feb (CH, CeH, KR). Pieris rapae, LINCOLN CO, N of Carney, 24 Aug; LOGAN CO, 5 mi E of Guthrie, 25 Aug (JH). Euchloe olympia, MURRAY CO, nr Dougherty, 22 Mar; POTTAWATTOMIE CO, E of Asher, 14 Mar; LINCOLN CO, E of Wellston, 3 Apr; CANADIAN CO, 8 mi E of Hinton, 1 Apr; SEMINOLE CO N of Konawa, 14 Mar; LOGAN CO, 4 mi SE Coyle, 29 Mar (all CH); JOHNSTON CO, Bluiie Rvr Pub. Hunting Area, 22 Mar (CH, RW). Paramidea midea, LINCOLN CO, E of Wellston, 3 Apr; LOGAN CO, SE of Langston, 24-27 Mar; MURRAY CO, nr Dougherty, 22 Mar (all CH); Colias philodice, GARVIN CO, N of Elmore City, 23 Sep (CH). Zerene cesonia, CADDO CO, W of Boone, 16 Apr (CH, CeH). Phoebis sennae, LINCOLN CO, N of Carney, 24 Aug (JH). Phoebis agarithe, CADDO CO, W of Boone, 16 Apr (CH, CeH). Kricogonia lyside, OKLAHOMA CO, SW of Luther, 22 Apr (CH). Eurema mexicana, GARVIN CO, N of Elmore City, 23 Sep (CH); PITTSBURG CO, nr Bolen Hollow, 11 Oct (RW). Nathalis iole, GARVIN CO, N of Elmore City, 23 Sep (CH); LINCOLN CO, N of Carney, 24 Aug (JH). Lycaena hyllus, CANADIAN CO, E of Wellston, 16 Aug (CH). Atlides halesus, OKLAHOMA CO, Luther, 12 Jun (CH). Phaeostrymon alcestis, CADDO CO, S of Cement, 24 May (CH); NOBLE CO, I-35 N, 12 Jun (GG). Satyrrium calanus falacer, CADDO CO, S of Cement, 24 May (CH). Calycopis cecrops, MURRAY CO, nr Dougherty, 22 Mar; GARVIN CO, N of Elmore City, 23 Sep (CH). Incisalia henrici turneri, MURRAY CO, nr Dougherty, 22 Mar (CH, CeH, RW). Incisalia irus hadra, GARVIN CO, SW of Wynnewood, 4th & 5th instar larvae, 3 May 1991 (CH). Parhassius m-album, MURRAY CO, nr Dougherty, 22 Mar (CH, RW). Strymon melinus, GREER CO, Quartz Mt SP, 12 Sep (CH). Hemiargus isola alce, GARVIN CO, N of Elmore City, 23 Sep (CH); LINCOLN CO, N of Carney, 24 Aug (JH). Everes comyntas, GREER CO, Quartz Mt SP, 12 Sep (CH). Celastrina argiulus, LINCOLN CO, N of Carney, 24 Aug (JH). Lycaeides melissa, CIMMARRON CO, Black Mesa SP, 23 May (RW, CH). Libytheana carinenta bachmanii, CADDO CO, W of Boone, 24 May (CH,RW). Agraulis vanillae, GARVIN CO, N of Elmore City, 23 Sep (CH); LOGAN CO, S of Crescent, 25 Aug (JH). Speyeria diana, LEFLORE CO, Billy Crk Cg, 8 Jun (GG). Charidryas nycteis, LINCOLN CO, N of Carney, 24 Aug (JH). Phyciodes tharos, GARVIN CO, N of Elmore City, 23 Sep (CH); LINCOLN CO, N of Carney, 24 Aug (JH). Vanessa virginianensis, CADDO CO, S of Cement, 24 May; CIMARRON CO, E of Kenton, 23 May (CH, RW). Vanessa cardui, and Vanessa atalanta rubria, LINCOLN CO, N of Carney, 24 Aug. (JH). Junonia coenia, KIOWA CO, Quartz Mt SP, 12 Sep; GARVIN CO, N of Elmore City, 23 Sep (CH); CADDO CO, N of Cement, 24 May (CH, RW). Basilarchia archippus, LINCOLN CO, N of Carney, 24 Aug; LOGAN CO, S of Crescent, 25 Aug (JH). Anaea andria, LOGAN CO, S of Crescent, 25 Aug (JH). Hermeuptychia sosybius, PITTSBURGH CO, nr Bolen Hollow, 11 Oct (CH, RW). Megisto cymela, CADDO CO, W of Boone, 16 Apr (CH, CeH). Megisto rubricata, BLAINE CO, Roman Rose SP, 29 Aug (CH). Cercyonis pegala texana, LOGAN CO, S of Crescent, 25 Aug; LINCOLN CO, N of Carney, 24 Aug (JH). Danaus plexippus, CIMMARRON CO, Black Mesa SP, 23 May; GREER CO, Quartz Mt SP, 12 Sep; GARVIN CO, N of Elmore City, 23 Sep; BLAINE CO, Roman Rose SP, 29 Aug (all CH); LINCOLN CO, N of Carney, 24 Aug (JH).

TEXAS (TX): Contributors: CB, RB, JD, JG, MI, ECK, JK, RL, RR, RS, SW. Collecting was apparently very good through much of TX, thanks to an unseasonably warm, wet winter, and continued above average rain through most of the state. Undeafatigable collectors visiting obscure TX Cos continued to add many more new records, but we still have a long way to go, in all parts of TX. No new state butterfly records reported, but several old friends from the south are turning up after long absence. Fifteen new state moth records are reported.

MOTHS: TINEIDAE - Opopogona omoscopa, STATE, 6 Jun; Monopis monachella, 15 Oct, 12 Dec; Acrolophus mycetophagus, 17 May; all HARRIS CO, Spring Vy (ECK). LYONETIIDAE - Euprora argentilineella, HARRIS CO, Spring Vy, 25 Aug (ECK). PYRALIDAE - Sameodes albiguttalis, STATE?, HIDALGO CO, Santa Ana NWR, 6 Sep (ECK). Pyrausta lethalis, P. pseuderosnealis, Petrophila daemonalis, Diorvictria caesiruffella, (RL), Pseudocabotia balconiensis, (ECK), Uvalde Co, Concan, 1, 2 May (RL,ECK). Ommatospila narcaeusalis, Bexar Co, San Antonio, 15 Sep (JD). TORTRICIDAE - Pseudexentera virginiana, P. costomaculana, STATE, SABINE CO, Six Mile, 29 Feb (ECK). Ecdytolopha insiticiiana, NEUCES CO, Corpus Christi, 1 Sep (SW). GEOMETRIDAE - Semiiothisa distribuaria, NACOGDOCHES CO, Nacogdoches, 2 May, (SW). Drepanulatrix garneri, Plataea blanchardaria, Uvalde Co, Concan, 1, 2 May (CB, ECK, RL). Nemoria unitaria, STATE, CULBERSON CO, Guadalupe Mts NP, Dog Cn, 27 Jun (ECK). Acanthotoca graefi, Kinney Co, 7 mi E of Bracketville, 8 May (JD). Caripeta aretaria, Hydria prunivorata, Cladara anguilinea (STATE), SABINE CO, Six Mile, 29 Feb (CB, ECK). Ixala proutearia, Jeff Davis Co, Davis Mts, 28, 29 Apr (RL). Hydriomena similaris, Eupithecia nimbose, E. misturata, 28 Jun, E. tenuata, 25 Sep, all STATE, CULBERSON CO, GMNP, Dog Cn (ECK). LASIOCAMPIDAE - Tolype minta, Harrison Co, Caddo Lk SP, 3 Aug (JD). T. notialis, Jefferson Co, Beaumont, 31 Oct (CB). Gloveria sphingiformis, Uvalde Co, Concan, 1, 2, May (CB, RL). SATURNIIDAE - Hemileuca chinatiensis, Culberson Co, GMNP, McKittrick Cn, 25 Sep (ECK). Samia cecropia, Uvalde Co, Concan, 30 Apr (CB, C.R. Sassine). SPHINGIDAE - Manduca jasminearum, NACOGDOCHES CO, Nacogdoches, 2 May (SW). Sphinx separata (CB), S. eremitoides (ECK), UVALDE CO, Concan, 1, 2 May (CB, ECK). Deidamia inscripta, TARRANT CO, Lk Worth, 23 Mar 1991; 7 Mar 1992 (RR). NOTODONTIDAE - Schizura errucata, Uvalde Co, Concan, 30 Apr (RL). ARCTIIDAE - Ectypia clio, STATE?, JEFF DAVIS CO, Crow's Nest Camp, 28, 29 Apr (RL); CULBERSON CO, GMNP, Dog Cn, 29, 30 May (ECK). Pygostenucha pyrrihora, STATE, CULBERSON CO, GMNP, Dog Cn, 28 Jun (ECK). Phaloesia saucia, Hidalgo Co, Santa Ana NWR, 15 Jun (MD). Redectis pygmaea, Uvalde Co, Concan, 30 Apr (RL). Cecharismena abarusalis, Bexar Co, San Antonio, 6 Sep (JD). Zale ficitilis, Bexar Co, San Antonio, 9 Sep (JD). Z. aeruginosa, Harrison Co, Marshall, 31 May (SW). Euclystis guerini, Travis Co, Austin, 30 Jul (JG) NOTE: this det by ECK, who recently located a specimen of E. sytis, In Roy Kendall's coll, bearing the data label: Cameron Co, TX, 30-VI-64, P.A.Glick. I had not seen either sp before. Synedoida grandirena, Tyler Co, Kirby SF, 29 Mar (CB). Metalectra bigallis, Andropolia diversilineata, Culberson Co, GMNP, Dog Cn, 27, 28 Jun (ECK). Psychomorpha epimenis, Newton Co, nr Burkeville, 1 Mar, on plum blossoms, (CB, ECK). Acronicta lepusculina, A. betulae, Nacogdoches Co, Nacogdoches, 2 May (SW). Feralia major, Jefferson Co, Beaumont, 3 Jan (CB). Lithophane pruena, L. querquera, L. patefacta, Sabine Co, Six Mile, 29 Feb (ECK). Chaetoglaea tremula, Travis Co, Austin, 15 Nov (JG). Mamestra configurata, 29 May; Apamea perpensa, Hydroscioches repleta, STATE, 31 July, CULBERSON CO, GMNP, Dog Cn, (ECK). Zotheca tranquilla, STATE, EL PASO CO, El Paso, 29 May (ECK). Schinia volupia, S. cupes, S. jaguarina, (RL); S. roseitincta, S. olivacea (ECK), Uvalde Co, Concan, 30 Apr - 2 May (ECK, RL).

BUTTERFLIES: Phocides polybius lilea, Hidalgo Co, Relampago, 17 Nov, confined female ovip on Guava (Psidium guajava), reared to adults (RB). Chioides zilpa, JEFF DAVIS CO, 5 mi NW Mt Locke, 3 May (Jeffrey Sloten). Chioides catillus albofasciatus, Uvalde Co, Concan, 9 Sep (CB). Astraptus fulgurator azul, UVALDE CO, 1 May (CB); ZAPATA Co, Falcon, 11 Oct, (ovip on Coyotillo (Karwinskia humboldtiana)) (RB). Urbanus doryssus, DIMMIT CO, 14 mi SE of Asherton, 15

Aug (SW). Urbanus proteus, CORYELL CO, nr Gatesville, 21 Jul (SW). Achalarus toxeus, ZAPATA CO, Falcon, 22 Oct, ovip on TX Ebony (Pithecellobium flexicaule), reared to adults (RB); Same locality, 19-20 Jun (first rec. for county) (MI). Cabares potrillo, Cameron Co, Sabal Palm Sanctuary, 14 Jun (MI). Spathilepia clonius, Hidalgo Co, Santa Ana Refuge, 21 Jun (MI). Hesperopsis alpheus texanus, Brewster Co, N of Study Butte, 11 Apr (JK); Cameron Co, E of Brownsville, 16 Nov, larva on Atriplex acanthocarpa, reared to adults (RB). Staphylus ceos, ZAPATA CO, Falcon, 15 Oct, ovip on Chenopodium album, reared to adults (RB). Xenophanes trixus, Hidalgo Co, Relampago, 1 Nov ovip on Malvaviscus drummondii, reared to adults (RB). Timochares ruptifasciatus, Hidalgo Co, Santa Ana NWR, 16 Jun (MI). Erynnis meridianus, MENARD CO, Ft McKavett SP, 19 Jul (SW). E. tristis tatus, UVALDE CO, Concan, 10 Sep (CB). E. funeralis, (counties only, no dates or locs) ANGELINA, ARANSAS, CALLAHAN, COLEMAN, CORYELL, DUVAL, ECTOR, GREGG, HAMILTON, HOWARD, JACKSON, IRION, MENARD, VICTORIA, WARD, WHARTON, ZAPATA (SU). E. baptisiae, JEFFERSON CO, China, 16 Aug (CB). Pyrgus philetas, ECTOR CO, Odessa, 26 Oct (SW). Pholisora catullus, ECTOR CO, Odessa, 20 Jul (SW). Nastra julia, REAL CO, 1 mi W of Rio Frio, 9 Sep (CB). Lerema accius, ANGELINA CO, 3 May; ARANSAS CO, 10 Oct; FAYETTE CO, 18 Jul; (SW). Hylephila phyleus, BROWN CO, 23 Sep, ECTOR CO, 15 Jul; GREGG CO, 31 May; SUTTON CO, 14 Jun (SW). Hesperia woodgatei, Travis Co, 6 Oct (JK). Polites themistocles, RUSK CO, Martin Crk SP, 3 May (SW). Atrytone logan, UVALDE CO, 4.5 mi N of Concan, 10 Sep (CB). Poanes viator, ORANGE CO, Neches Rvr, 26 Aug (CB). Euphyes dion, JEFFERSON CO, Sabine Pass, 8 Aug (CB). Amblyscirtes eos, ECTOR CO, Odessa, 21 Jul (SW). Panoquina panoquinoides, Cameron Co, E of Brownsville, 16 Nov, ovip on Distichlis spicata (now larvae) (RB). Panoquina panoquin, JEFFERSON CO, Sabine Pass, 8 Aug (CB). Nyctelius nyctelius, Cameron Co, Brownsville, ovip on Panicum sp reared to adults 13 Oct (RB). Megathymus coloradensis reinthalli, Tyler Co, Kirby SF, adult on 21 March (CB). Battus philenor, SW adds the following Co records (no locs or dates): ANGELINA, BELL, BRAZORIA, BROWN, CALLAHAN, HAMILTON, HOWARD, JACKSON, SCHLEICHER, UPTON, REAGAN, WARD, and WHARTON. Battus polydamas, WILLACY, KENEDY, KLEBERG (no locs) 9 Jun (SW). Eurytides philolaus, Cameron Co, Laguna Atascosa NWR, 22 Jun (sight); HIDALGO CO, Bentsen SP, 30 Jul (sight) (SW). Papilio polyxenes, new Co records by SW: CALLAHAN, COLEMAN, CORYELL, CRANE, ECTOR, HAMILTON, MILAM, MILLS, SCHLEICHER, VICTORIA, WARD, WINKLER. Papilio crespontes, MILLS CO, Goldthwaite, 22 Jul; GARZA CO, Post, 23 Sep (SW). Papilio multicaudatus, CROCKETT CO, Ozona, 14 Jun (SW). Papilio glaucus?, CAMERON CO, Harlingen, 21 Jun (SW) (coord note: described as "very large, pale yellow", I have not seen specimen, may be P. alexiades, which is questionably recorded from TX). Papilio palamedes, RUSK CO, nr Henderson, 2 Aug, (SW). Pieris rapae, SW recorded the following new Cos: CROCKETT, ECTOR, DALLAM, HARTLEY, KERR, KIMBLE. Euchloe olympia, RUSK CO, Hartin Crk SP, 3 May (SW). Paramidea midea, TRINITY CO, Crockett NF, 15 Mar (CB). Colias philodice, ECTOR CO, Odessa, 15 Jun; NACOGDOCHES CO, Nacogdoches, 29 Nov (SW). Feniseca tarquinius, GREGG CO, Longview, 31 May (SW); CHAMBERS CO, Trinity Rvr, 22 Jul, (CB). Tmolus azia, REAL CO, Rio Frio, 9 Sep (CB). Strymon rufofusca, Starr Co, 5 Oct, ovip on Herissantia crispa, reared to adults (RB). S. bazochii, Hidalgo Co, ovip and reared on Lantana camara & L. horrida (RB). Incisalia henrici turneri, SABINE CO, Six Mile, 1 Mar, (CB). Incisalia irus hadra & J. nippon, TRINITY CO, Crockett NF, 15 Mar (CB). Parrhasius m-album, UVALDE CO, 4.5 mi N of Concan, 1 May (CB). Zizula cyna, KIMBLE CO, S Llano Rvr SP, 23 May (SW); CROSBY CO, 4 Jul (JK). Eueides isabella, Hidalgo Co, Santa Ana NWR (sight), 21 Jun (MI). Euptoieta hegesia, new Cos by SW, July, Aug: BROOKS, DUVAL, JIM WELLS, KLEBERG, KENEDY. Poladryas minuta, Crosby Co, 8-10 May, 4, 5 July (JK). Thessalia theona bolli, KIMBLE CO, S Llano Rvr SP, 23 May (SW). T. fulvia, ECTOR CO, Odessa, 20 Jul, WARD CO, Monahans Sandhills SP, 15 Jun (SU). Chlosyne definita, TERREL CO, 15 Apr (JK). Chlosyne janais, KLEBERG CO, Riviera, 29 Jul (SW). Dymasia dymas, TAYLOR CO, Abilene SP, 19 Aug (SW). Phycodes pictus, DALLAM CO 5 mi N of Dalhart, 12 May (RS); ECTOR CO, Odessa, WARD CO, Monahans, 17 Jun (SW). Vanessa cardui, exceedingly common in Western panhandle, 15 May and again 25 Sep, new records include DALLAM, HARTLEY (SW, RS), OLDHAM, DEAF SMITH, PARMER (RS). V. atalanta, DALLAM CO, 15 May (RS). Adelpha fessonia, Hidalgo Co, Santa Ana NWR, 15 Jun (sight) (MI). A. bredowii, SCHLEICHER CO, Ft McKavett, 19 Jul (SW). Dynamine dyonis, UVALDE CO, 5 mi W of Uvalde, 21 Sep (sight) (JD); Bexar Co, San Antonio, 28 Aug-2 Nov (JK). Biblis hyperia, UVALDE CO, 5 mi W of Uvalde, 21 Sept (JD). Hamadryas februa, LASALLE CO, Encinal, 15 Aug (SW). H. guatemalena, STARR CO, Salinero, 7 Sep (close sight) (CB). Marpesia petreus, DUVAL CO, 4 mi W of San Diego, 15 Aug (SW). Anaea andria, SW adds the following Cos: ANGELINA, HOWARD, IRION, JACKSON, MIDLAND, MITCHELL, SCHLEICHER, MENARD, TAYLOR, UPTON, REAGAN. Cercyonis pegala, SUTTON CO, 19 Jul (SW).

ARKANSAS (AR): Contributors: SB, GG, MO.

MOTHS: LIMACODIDAE - Phobetron pithecium, Apoda y-inversa, Marion Co, 7-10 Aug (SB). GEOMETRIDAE - Dichorda iridaria, Baxter Co, 23 Aug (MO). SATURNIIDAE - Anisota stigma, Baxter Co, 8 Aug (SB). A. virginensis, Baxter Co, 8, 23 Aug (MO). Sphingicampa bisecta, Baxter Co, 22 Aug (MO). Actias luna, Marion Co, 8 Aug (SB). Eacles imperialis, Marion & Baxter Cos, 8-10 Aug (SB). SPHINGIDAE - Ceratomia hageni, Marion Co, 3 Aug (SB). Sphinx kalmiae, Baxter Co, 8-10 Aug, (SB). Laothoe juglandis, Baxter Co, 14 May (MO). Eumorphia pandorus, Marion Co, 5 Aug (SB). Amphion floridensis, Baxter Co, 7 Aug (SB). ARCTIIDAE - Grammia oithona, 14-15 May, 6 Sept; G. figurata, 27 June-6 Sept, Baxter Co (MO). NOCTUIDAE - Catocala subnata, 9 Aug; C. reecta, 9 Aug-3 Sep; C. ilia, 7 Jun; C. piatrix, 22 Aug, bait, (MO); C. vidua, 3 Aug (SB), all Baxter Co. Agriopodes fallax, Marion Co, 7-9 Aug (SB). Tarachidia semiflava, Baxter Co, 10 Aug (MO).

BUTTERFLIES: Thorybes pylades, MARION CO, 2-10 Aug (SB); BAXTER CO, 21-24 Apr (MO). T. bathyllus, MARION CO, 2-10 Aug (SB). Erynnis juvenalis, BAXTER CO, 5 Apr (MO). Polites themistocles, BAXTER CO, 3 Aug (SB). P. origenes, SCOTT CO, Mill Crk Camp, 10 Jun (GG). Atrytone logan, MARION CO, 6 Aug (SB); SCOTT CO, Mills Crk, 10 11 Jun (GG). Wallengrenia otho, SCOTT CO, Mills Crk, 11 Jun (GG). Papilio sp nr joanae, BAXTER? CO, 14 Apr (MO). Papilio crespontes, MARION CO, 9 Aug (SB). Eurytides marcellus, Marion Co, 10 Aug (SB). Paramidea midea, Baxter Co, 12, 13 Apr (MO). Atides halesus, MARION CO, 9 Aug (SB). Calephelis borealis, SCOTT CO, Mills Crk, 10 Jun (GG). Speyeria diana, SCOTT CO, Mills Crk, 10 Jun (GG). Cercyonis pegala, Baxter Co, 2-10 Aug (SB, MO). Enodia anthedon, SCOTT CO, Mills Crk, 10 Jun (GG).

LOUISIANA (LA): Contributors: CB, SW. There were no moth reports..

BUTTERFLIES: Erynnis brizo, Natchitoches Pa, Kisachie NF, 7 Mar (CB). Amblyscirtes vialis, CADDO Pa, Greenwood, 31 May (SW). Battus philenor, Colias philodice, C. eurytheme, Pieris rapae, Nathalis iole, 3 May; Eurema nicippe, 31 May; Basilarchia arthemis astyanax, Asterocampa celtis, Anaea andria, 31 May; Polygonia comma, Hermeuptychia hermes, 3 May, all CADDO CO, Greenwood (SW); Incisalia irus hadra, Natchitoches Pa, Kisachie NF, 7 Mar (CB).

ZONE 7: ONTARIO, QUEBEC.

Coordinator: Ross Layberry (RL)

Contributors: Bob Bracken (BB); David Biggs (DB); Bob Curry (BC); Greg Daniels (GD); Sid Daniels (SD); John Eberlie (JE); James Flynn (JF); Dave Gravelle (DG); June Gordon (JG); Peter Hall (PH); Ray Holland (RH); Bill Lamond (BL); Francois Lessard (FL); Stephen Pike (SP); Lloyd Taman (LT); Alan Wormington (AW);

Sieve Wendt (SW). Most are not Lep. Soc members: these via RL.

In most of Ontario and western Quebec, 1992 was the coldest, cloudiest and wettest year on record, an unbelievable contrast to the three previous years when many high records for temperature and sunshine were set.

MIGRANTS AND STRAYS: 1992 saw a massive invasion of *V. cardui*, very early, from at least southern Ontario and Quebec, to NE Quebec (Lac-Albanel and Mont-Wright) and the Maritimes. *V. virginienensis* common to NE Quebec, *V. atalanta* less common than usual, *D. plexippus* in very low numbers, one of the worst years ever.

ONTARIO (ON): There were no moth reports.

BUTTERFLIES: *E. clarus*, second generation, Pt Pelee, Essex Co, 29 Aug to 19 Sep (AW, JF). *E. zarruco funeralis*, Pt Pelee, 23 Sep SECOND CANADIAN RECORD (AW, SP). *A. numitor*, 4 km W Rankin, Renfrew Co, 4 Jul, SECOND COUNTY, 56 km NW RANGE EXTENSION (RL). *O. garita*, Moorey, Great La Cloche Peninsula, Manitoulin Dist, 6, 7 Jul, common along 8 km of hwy (AW, BC, BL). *A. logan*, Hortop C.A., Northumberland, 10 Aug, COUNTY (JE). *P. viator*, 4 km W Rankin, Renfrew Co, 4 Jul, SECOND COUNTY, 68 km NW RANGE EXTENSION (RL). *E. dion*, Huntmar Bridge, Kanata, Carleton Co, Jun 25 (RH, DB); Bowley Lk, Lanark Co, 10 Aug COUNTY (BB). *E. bimacula*, common at 4 sites in Carleton Co, 21 Jun to 15 Jul (RH, DB, BB). *H. cresphontes*, one caught by Christina Wendt, 3 mi S North Gower, Carleton Co, 6 Sep, photographed and escaped, COUNTY, 115 km NE ONTARIO RANGE EXTENSION (SW). *P. glaucus*, Murphy's Pt Provincial Park, Lanark Co, 22 Aug, COUNTY (PH). *Pieris virginienensis*, 4 km NW Highgate, Kent Co, 15 May, COUNTY (AW). *E. lisa*, Pt Pelee, 22 Jun to 4 Oct, massive incursion followed by 2 local broods: LATE (AW). *E. nicippe*, Pt Pelee, 16 Jul, FIRST RECORD FOR POINT PELEE, FOURTH CANADIAN RECORD (AW). *F. tarquinius*, Pt Pelee, 19 Jul, COUNTY (AW). *G. xanthoides*, 20 km E Rainy Rvr, Rainy Rvr Dist, 30 Jul, DISTRICT (LT). *S. acadicum*, 16 to 18 Jul, Pt Pelee FIRST LOCAL RECORD IN 10 YEARS (AW). *M. grynea*, 8 to 25 Jun, 5 to 26 Aug, Pt Pelee, MORE THAN IN PAST 15 YEARS COMBINED (AW). *I. polia*, 20-38 km NE Wahnapiatae, Sudbury Dist, 16 May, DISTRICT (GD). *I. eryphon*, Achray Rd, Algonquin Park, Nipissing Dist, km 42 and 50, 26 Jun (BB, DG); 20-38 km NE Wahnapiatae, Sudbury Dist, 16 May, DISTRICT (GD). *Parrhasius m-album*, two seen at Pt Pelee, 13 Sep, FIRST SINCE 1960 (AW, JF, JG). *S. melinus*, Constance Bay Sandhills, Carleton Co, 2 Jun (BB); Achray Rd, km 66, 14 Jun, (RL); Radio Observatory, Algonquin Park, Nipissing Dist, Jun 26 (BB, DG). *V. cardui*, common all summer: migrants first seen at Pt Pelee 2 May, Ottawa area 4 May (BB), 5 May (RL, RH), 60+ on 8 May (RH). *E. discoidalis*, 30 km S Gogama, Sudbury Dist, 31 May (GD, SD). *O. jutta*, 10 & 48 km N Capreol, Sudbury Dist, 13 Jun (GD). *Oeneis macounii*, common at 4 sites near the Radio Observatory, Algonquin Park, Nipissing Dist, 14 Jun (RL), 26 Jun (BB).

QUEBEC (PO): RL made two trips, and FL one, into northern PQ, concentrating on Hwy 167, NE from Chibougamau (km 232) to the end of the road at Lac-Albanel (km 413), in the Municipalité de Baie-James, Territoire de Nouveau-Québec, an area never before reported. There were no moth reports.

BUTTERFLIES: *E. icelus*, 34 km N Joutel, Baie-James, 22 Jun; Lac-Obalski and Lac-Castagnier, Abitibi Co, 23 Jun; Hwy 113, km 115-360 and Hwy 167, km 232-401, 23-28 Jun (RL, FL). *P. centaureae*, Hwy 167, in bogs at km 343 and 403, 24-25 Jun (RL); Hwy 167, km 320, 344, 413, 28 Jun; Hwy 389, km 170, Saguenay Co, 8 Jul; Mont-Wright, Saguenay Co, (near Labrador City), 10 Jul (FL). *C. palaemon*, Hwy 167, km 292, 27 June (FL). *A. numitor*, St-Siméon, Bonaventure Co, 2 Aug, COUNTY; Bonaventure, Bonaventure Co, 7 Aug, COUNTY (FL). *T. lineola*, at 14 locations on Hwy 113, km 31-360, and on Hwy 167, km 225 (6 km S Chibougamau), 1-3 Aug (RL). *P. themistocles*, Rapides-entre-les-Iles, NE Chapais, Baie-James, 24 Jun (RL); Hwy 167, bog at km 343, 27 Jun (FL). *P. mystic*, Hwy 113, km 187 and 199, and Hwy 167, km 266, 1 Aug (RL). *P. hobomok*, Hwy 109, km 108, Despinassy, Abitibi Co, and Hwy 113, km 138, 23 Jun; *pocahontas* form female, Chibougamau, 27 Jun (FL). *E. vestris*, Hwy 113, km 160, 1 Aug (RL). *A. vialis*, Hwy 113, km 138, 148 and 213 (Desmaraisville), 23 Jun; Hwy 167, km 198, 25 Jun; Hwy 169, km 42, Parc-des-Laurentides, Chicoutimi Co, 26 Jun (RL). *P. canadensis*, common from ON border near Val-Paradis, Baie-James, along Hwy 113 and Hwy 167 to Lac-Albanel, 22-28 Jun (RL, FL). *Pieris virginienensis*, Parc-Paul-Sauvé, Deux-Montagnes Co, 18 May, COUNTY (FL). *C. philodice*, white female, Despinassy, 23 Jun. *C. eurytheme*, 11 km E Selbaie, Baie-James, 22 Jun. *C. interior*, Hwy 113, km 94-199, 1, 3 Aug; Hwy 117, km 461, Pontiac Co, 3 Aug (RL). *E. epixanthe*, common in all bogs on Hwy 113, km 89-352, Hwy 167, km 245-413, 1-3 Aug; Hwy 117, km 461, Pontiac Co, 3 Aug (RL); Bonaventure, 7 Aug, COUNTY (FL). *E. dorcas dorcas*, only seen at two roadside locations, at Hwy 113, km 293, and Hwy 167, km 266, 1 Aug: none were seen in several fen-like bogs on Hwy 167 despite abundance of the foodplant, *Potentilla fruticosa*, maybe because day was mostly cloudy (RL); Bonaventure, 7 Aug, (FL). *E. dorcas dospassosi*, St-Siméon, in salt-marsh, 2, 5, 6, 7 Aug (FL). *I. augustinus*, few worn specimens seen on Hwy 167 in bogs, km 222 to 413, 24-28 Jun (RL, FL). *C. argiolus*, few very worn specimens seen on Hwy 167, km 281-400, usually in bogs, 24-28 Jun (RL, FL). *G. lygdamus*, common from ON border nr Val-Paradis, along Hwy 113 & 167 to Lac-Albanel, 22-25 Jun, always at roadside patches of Cow Vetch, *Vicia cracca*; one worn female at Hwy 167, km 225, 1 Aug; one larva found on *V. cracca* at Hwy 113, km 127, 1 Aug (RL). *L. idas*, on Hwy 167, in bogs at km 358, 402 and 403, and in a dry abandoned camp area, nectaring in numbers on Sheep Laurel (*Kalmia angustifolia*) at km 391, 2 Aug (RL). *P. saepiolus*, 35 km N Villebois, Baie-James, 22 Jun; Despinassy, 23 Jun; Hwy 113, km 127-293 (RL); Hwy 167, km 207-277, 23-28 June, (RL, FL); Hwy 167, km 167, Lac-St-Jean-Ouest Co, 25 Jun; one worn at Hwy 167, km 266, 1 Aug; also only seen at roadside patches of *V. cracca*, but no larvae found despite extensive searching: in Aug, Pink Clover could also be seen at the same locations (RL). *S. aphrodite*, Hwy 113, km 110, 1 Aug (RL). *S. atlantis*, Hwy 113, km 94-199, 1, 3 Aug (RL). *P. eunomia*, Hwy 167, bogs at km 245, 302, 27 Jun (FL). *C. selene*, Val-Paradis, 22 Jun; Lac-Castagnier, Hwy 113, km 213, 23 Jun; Hwy 113, km 12-293, 1 Aug; Hwy 167, bog at km 403, 2 Aug (RL); Hwy 167, km 232, 292, 27 Jun (FL). *C. bellona*, Hwy 113, km 184, 202, 213 (Desmaraisville), 23 Jun; Hwy 167, km 232 to 413, usually in bogs, 25-28 Jun (RL, FL). *C. frigga*, Hwy 167, km 319, 24 Jun, in a dry roadside gravel-pit (RL); Hwy 167, bog at km 320, 27 Jun (FL). *C. freija*, Hwy 167, km 281 and bogs at km 343, 400 and 403, 24-25 Jun (RL); Hwy 167, km 243-413, 27-28 Jun; Mont-Wright, 10 Jul (FL). *C. titania*, in two bogs, at Hwy 113, km 352, 1 Aug, and Hwy 167, km 403, 2 Aug (RL). *P. selenis*, Val-Paradis, 22 Jun; Lac-Castagnier, 23 Jun; Hwy 113, km 94-199, 1-3 Aug; Hwy 167, km 266 and 277, 24-25 Jun, km 266-413, 2 Aug (RL); Hwy 167, km 243-413, 27, 28 Jun (FL). *P. gracilis*, Hwy 113, km 187, 1 Aug (RL). *Vanessa virginienensis*, larvae seen at Hwy 109, km 108 and Hwy 113, km 115-173, 23 Jun; Rapides-entre-les-Iles, Baie-James, and Hwy 167, km 241 and 340, 24 Jun; Lac-Albanel, 25 Jun; one adult at Desmaraisville, 23 Jun (RL); one at Hwy 167, km 329, 27 Jun (FL). *V. cardui*, 12 and 16 km E Chapais, Baie-James, 24 Jun (RL); Hwy 167, km 232 to 413, 24-28 Jun (RL, FL); Mont-Albert, Gaspé-Ouest Co, 17 Jun; Cap-Chat, Gaspé-Ouest Co, 2 Jul; Mont-Wright, Saguenay Co, 10 Jul; Bonaventure, 6 Jul (FL); Hwy 113, km 199, 1 Aug (RL). *V. atalanta*, 20 km E Selbaie, Baie-James, 22 Jun (RL); Chibougamau, 27 Jun; Lac-Albanel, 28 Jun; Mont-Wright 10 Jul (FL). *B. arthemis arthemis*, Hwy 113, km 94, 1 Aug; Hwy 167, km 391, 2 Aug (RL). *E. anthedon*, Hwy 113, km 12, Abitibi Co, 3 Aug COUNTY (RL). *C. tullia inornata*, Despinassy, 23 Jun; Hwy 113, km 89, 160 and 199, 1, 3 Aug; Hwy 167, km 266 and 403, 1, 2 Aug; Hwy 117, km 461, Pontiac Co, 3 Aug (RL). *E. disa*, many locations on Hwy 167 between km 232 and 413, 24 to 28 Jun, usually not in bogs, often seen while driving, flying across the road (RL, FL), in two locations mud-puddling on wet muddy road (RL); Mont-Wright, 10 Jul (FL). *O. chryxus calais*, Hwy 167, km 257, 308, 27, 28 Jun (FL). *O. jutta*, 24 km N Villebois, and 21 km N Joutel, Baie-James, 22 Jun; Hwy 167, many bogs between km 243 and 413, 24-28 Jun (RL, FL); Hwy 167, bogs at km 266 and 403, 1, 2 Aug (RL).



ZONE 8: MIDWEST: MINNESOTA, WISCONSIN, MICHIGAN, IOWA, MISSOURI, ILLINOIS, OHIO, KENTUCKY, WEST VIRGINIA.

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MINNESOTA and MISSOURI: No reports.

KENTUCKY: The following records are from CVC, who reported a fruitful year for butterflies in Kentucky.

BUTTERFLIES: L. accius, 12 Sep, Little Bayou de Chien, Fulton Co. H. leonardus, 11 Sep, Pennyriple Forest SP, Christian Co. P. yehl, E. dion, 12 Sep, Little Bayou de Chien. A. hegon, P. virginienis, 11 Apr, Bullitt Co. Z. cesonia, 12 Sep, Hickman, Fulton Co (E. Sadler). P. sennae, 12 Sep, sighted from car in Graves, Lyon, Caldwell, Hickman, Livingston, Hopkins, Marshall, Muhlenberg and Ohio Cos. E. laeta, 11 Jun, Big Black Mtn, Harlan Co (Mark Monroe). C. mutica, 11 Sep, Pennyriple Forest SP. C. borealis, 4 Jul, Oldham Co. C. bellona, 11 Apr, Bullitt Co; 22-25 Sep, Jefferson, Oldham Cos. E. portlandia missarkae, 12 Sep, Little Bayou de Chien. C. gemma, H. hermes, 11 Sep, Pennyriple Forest SP.

WEST VIRGINIA: VA wishes to thank Tom Eichlin for moth determinations.

BUTTERFLIES: F. ontario, 23 Jun, Knobly Mtn, Grant Co, females on *Ceanothus americanus*, *Chrysanthemum leucanthemum*, and *Apocynum cannabinum* flowers (RHS).

MOTHS: SESIIDAE - *Synanthedon kathyae*, *Alcathoe carolinensis*, 27 Jun-4 Jul, KANAWHA Co, STATE, det T. Eichlin. *Vitacea polistiformis*, 26 Jul-1 Aug, Kanawha Co. NOCTUIDAE - *Catocala cerogama*, 24 Aug-2 Sep, Kanawha Co. C. andromedae, C. titania, 24 Aug, Hampshire Co (VA).

OHIO: The Ohio Survey of Lepidoptera moth summary was prepared by EHM. A very poor year was noted for butterflies and some moths, with greatly reduced populations of common Saturniidae reported near Dayton (MDS). The year started out with drought conditions holding over from 1991, but ended up overall much wetter than usual, with precipitation six inches above normal for 1992. Drought and rain were spotty, however, with the Deerfield area near Akron remaining dry late in the year while above-normal rain fell in the surrounding region.

MOTHS: TORTRICIDAE - *Bactra verutana*, 6 Sep, GREENE Co (EHM). *Lobesia carduana*, 7 Aug, GREENE Co, 3rd Co Record (EHM). *Hedya cyanana*, 19 Jun, GREENE Co (EHM). *Phaneta ochrocephala*, 28 Aug, 6 Sep, GREENE Co (EHM). P. ornatala, 24 Jul, GREENE Co (EHM). *Eucosma heathiana*, 24 Jul, 7 & 28 Aug, 6 Sep, GREENE Co, STATE (EHM). E. giganteana, E. pediasios, 24 Jul, GREENE Co (EHM). E. glomerana, 28 Aug, 25 Sep, GREENE Co (EHM). E. matutina, 24 Jul, 28 Aug, GREEN Co, 3rd Co record (EHM). E. cataclystiana, 24 Jul, 7 & 28 Aug GREENE Co (EHM). *Pelochrista zomonana*, 24 Jul, 6 Sep, GREEN Co, 3rd Co record (EHM). *Epiblema abruptana*, 24 Jul, GREENE Co, 2nd Co record (EHM). E. tripartitana, E. carolinana, E. dorsisuffusana, 24 Jul, GREENE Co (EHM). *Notocelia culminana*, 28 Aug, GREENE Co (EHM). *Sonia canadana*, *Grapholita interstinctana*, 6 Sep, GREENE Co (EHM). ARCTIIDAE - *Apantesis carlotta*, 2 Jul, CLARK Co (RWR). NOCTUIDAE - *Hypena humuli*, 2 Oct, WILLIAMS Co (RWR). *Cissusa spadix*, 23 Apr, PORTAGE Co (RWR). *Catocala nebulosa*, 22 Aug, MEDINA Co (JC). C. clintoni, 6 Jul, WILLIAMS Co (RWR). *Nola cilicoides*, 24 Jul, ROSS Co (JC). *Tarachidia binocula*, 12 Jun, T. tortricina, 24 Jul, GREEN Co, 2nd Co records (EHM). *Meropon ambifusca*, 28 Aug & 6 Sep, GREENE Co (EHM). *Archanara laeta*, 28 Jul, WILLIAMS Co (RWR). *Papaipema beeriana*, 28 Aug, 2 & 23 Oct, GREENE Co, 3rd Co record (EHM). *Lithophane pexata*, 22 Oct, LUCAS Co, STATE (EHM). L. disposita, 23 Oct, WILLIAMS Co (RWR). *Cucullia lucifuga*, 3 Jun, C. florea, 26 Jun, WILLIAMS Co (RWR). *Lacinipolia olivacea*, 4 Sep, WILLIAMS Co, 1st confirmed OH record (RWR). *Xestia bugrai*, 29 Aug, MEDINA Co (JC). X. bollii, 25 Sep, GREENE Co (EHM). *Cryptocala acadensis*, *Heliocheilus paradoxus*, 28 Jul, WILLIAMS Co (RWR).

INDIANA: RK reported a poor season overall, with rain throughout the summer and incredibly cool temperatures.

BUTTERFLIES: C. ebenina, 18 Apr, Clark SF, Clark Co. A. andria, 18 Apr, Clark SF, sighted, seen here in each of last three years. C. gemma, 29 Aug, Harrison-Crawford SF, Harrison Co (RK).

MOTHS: NOCTUIDAE - *Catocala piatrix*, 9 & 30 Aug, Harrodsburg, Monroe Co. C. habilis, C. serena, C. angusi, C. residua, 9 Aug, and C. maestosa, 30 Aug, Harrodsburg, Monroe Co, all at mv billboard lights (RK).

ILLINOIS: JRW reported a great collecting season, with generally cool and dry conditions. Huge numbers of *V. cardui* were noted in central and northern IL from mid-July-early October (RI). A huge migration was observed on 9 August while traveling west on I-88 in Lee and Whiteside Co. Thousands of individuals were flying in a SSW direction in mid-morning, with many being hit by cars and the highway littered with dead butterflies. Migration had ceased by mid-afternoon when the route was retraveled. A local concentration was also observed sitting, nectaring or flying about on 9 August in a Mercer County cemetery, with 625 individuals counted in five minutes (PC).

BUTTERFLIES: T. confusus, 28 Jul 1991, RANDOLPH Co, STATE (JRW). S. hayhurstii, 31 May, Iroquois Co (SB). E. martialis, 31 May, 9 Jun, Iroquois Co (SB, JRW); 27 June, Hardin Co (SB); 28 Jun, Union Co (SB, EB). E. lucilius, May, Aug, LAKE Co, STATE, det H. A. Freeman (IL). E. baptisiae, 27-28 Jun, Johnson, Hardin Cos (SB, EB); 28 Jul, Union Co, 18-19 Aug, Lake Co, 23 Aug, POPE Co (JRW). N. lherminier, 5 Aug, Pope Co (JRW). H. sassacus, 9 Jun, Iroquois Co (JRW). P. byssus, 27 Jun, Hardin Co (SB, EB); 28 Jun, JACKSON Co, 29 Jun, JOHNSON Co (JRW); 29 Jun 1991, UNION Co (JRW). P. viator,

18 Jul-19 Aug, Lake Co (SB, IL, JRW); 19 Jul, Iroquois Co (SB). E. conspicuus, 18 Jul, McHenry Co, 19 Jul, Iroquois Co (SB); 13 Aug, MASON Co (JRW). A. hianna, 18 May, Cass, Greene, Morgan Cos (JRW). A. hegon, 18 May, GREENE Co, 14 Jun, VERMILION Co (JRW). A. aesculapius, 5 Aug, Pope Co (JRW). A. belli, 1 Jun, Jackson Co (JRW), 4 Aug, Pope Co (T. Vogt & B. Sims per JRW). P. protodice, 29 Jun, Mason Co, few seen (SB). E. olympia, 30 Apr & 8 May, Mason Co, 13 May, Carroll, Whiteside Cos (JRW). P. sennae, 28 Jun, Union Co, few seen (SB, EB). G. xanthoides dione, 7 Jun-6 Jul, Mason Co (JRW). C. cecrops, 5 & 23 Aug, Pope Co (JRW). M. grynea, 8 May, Cass Co (JRW). E. ontario, 31 May, JOHNSON Co (JRW). G. lygdamus couperi, 13 May, Winnebago Co (JRW). L. melissa samuelis, rediscovered in northern IL, no data given for conservation reasons, last and only previous record about 100 years ago (JRW). E. claudia, 12 Sep, McHenry Co (RT). S. idalia, 29 Jun-13 Aug, Mason Co (SB, EB, JRW). C. selene, 16 May-19 Jul, Iroquois Co (SB, JRW). E. phaeton ozarkae, 31 May, JOHNSON Co (JRW). A. andria, 22 Apr, Menard Co, 31 May, Johnson Co (JRW), 23 Jun, DuPage Co, (RES). S. appalachia appalachia, 23-26 Aug, POPE Co, 1st record of nominate subspecies in state (JRW).

MOTHS: OECOPHORIDAE - Ethmia zelleriella, 29 Jun, Union Co (JRW). SESIIDAE - Paranthrene simulans, 30 Jun-26 Jul, Union Co, 16 Jul, MENARD Co, at pheromone (JRW). Melitta cucurbitae, 15 Jun, MENARD Co, on privet (JRW). TORTRICIDAE - Eucosma robinsonana, 7 Jul, Mason Co (JRW). Croesia semipurpurana, 22 Jun, Cook Co (RHL). ZYGAENIDAE - Pyromorpha dimidiata, 1 Jun, Union Co (JRW). LIMACODIDAE - Natada nasoni, Sibine stimulea, 1 Jul, Euclea delphinii, 25 Jul, Union Co (JRW). THYRIDIDAE - Dysodia oclatana, 24 Jul, Union Co (JRW). THYATRIDAE - Pseudothyatira cymatophoroides, 17 Jun, MENARD Co (JRW). SPHINGIDAE - Manduca jaminearum, 29 Jun, Union Co (SB, EB). Sphinx frankii, 27 Jun-25 Aug, Union Co (SB, EB, JRW). Erinyis slope, 29 Jun & 24 Jul, UNION Co, STATE (JRW). E. ello, 29 Jul, E. obscura, 24 Jul-7 Sep, Union Co (JRW). Eumorpha fasciata, 24 Jul-26 Aug, Union Co (JRW). Xylophanes tersa, 27 Jun & 31 Jul, Union Co (SB). ARCTIIDAE - Pygarctia spraguei, 5 & 18 Jun, Menard Co (JRW). NOCTUIDAE - Calyptra canadensis, 18 Jun, MENARD Co (JRW). Ascalapha odorata, 29-30 Jun, 26 Jul (3 in one night), 21 Aug, Union Co (JRW); 11 Jul, McHenry Co (RT). Catocala robinsoni, 7-8 Sep, fm "missouriensis" 22-26 Aug, Union Co (JRW). C. ulalume, 23 Aug, C. dejecta, 27 Jul-4 Aug, C. insolabilis, 26 Jul, and C. marmorata, 25 Jul, 3rd state record, Union Co (JRW). C. andromedae, 27 Jun-1 Jul, UNION Co (JRW). C. connubialis, 28 Jun, Union Co (SB, EB). Argyrogramma verruca, 22 Aug, UNION Co, STATE (JRW). Acotia delecta, Plagiomimicus pityochromus, 24 Aug, Cirrhophanus triangulifer, 21-26 Aug, Basilodes pepita, 21-24 Aug, Union Co (JRW). Bellura gortynoides, 26 Jun, Union Co (SB, EB). Eupsilia devia, 6 Apr, Lake Co (SB).

IOWA: HHC and MR responded to the Iowa DNR's invitation and conducted surveys at four prairie preserves on 30 Jun-1 Jul, adding many new records for the various sites. V. cardui was incredibly abundant on 30 Jun along I-80 in Adair, Madison and Cass Cos, and V. atalanta was also abundant in Adair and Cass Cos (RES). CORRECTION: The record of P. verna (11 Jun, Palo Alto Co) in the 1991 summary should be changed to A. hianna (RH).

BUTTERFLIES: E. horatius, E. martialis, 30 Jun, Loess Hill Prairie, Monona Co (HHC, MR). O. powesheik, 1 Jul, Caylor Prairie, Dickinson Co, Anderson Prairie, Emmett Co (HHC, MR). H. phyleus, 7 Aug, Palo Alto Co (RH). H. ottoe, 30 Jun, Loess Hill Prairie (HHC, MR); 8 Jul, LYON Co (TO). H. dacotae, 1 July, Dickinson Co, last recorded in 1981 and believed to be extirpated, verified by Jerry Selby (HHC, MR). H. leonardus pawnee, 22 Aug, LYON Co (TO). P. verna, 30 Jun, Loess Hill Prairie (HHC, MR). A. arogos, 1 Jul, Kalsow Prairie, Pocahontas Co (HHC, MR); 8 July, Lyon Co; 17 July, Ida Co, new sites (TO). P. viator, 10 Jul-20 Aug, Palo Alto Co (RH). E. dion, 19 Jul-18 Aug, Palo Alto Co (RH); 18 Jul, OSCEOLA Co (TO). E. conspicuus, 1-16 Aug, Palo Alto Co (RH). E. bimacula, 1 Jul, Kalsow Prairie (HHC, MR); 25 Jul, Woodbury Co (TO). H. crespontes, 22 Aug, LYON Co (TO). P. troilus, 1 Jul, Caylor Prairie, DICKINSON Co, NORTH by nearly 100 miles (HHC, MR). P. protodice, 30 Jun, incredibly abundant along I-80 in Adair, Cass and Pottawattamie Cos (RES). P. sennae, 15 Sept, Woodbury Co (Bob Moritz via TO). F. tarquinus, 15 Aug, POCAHONTAS Co (RH). G. xanthoides dione, 30 Jun, Loess Hill Prairie (HHC, MR). H. hylus, 1 Jul, Caylor Prairie (HHC, MR). M. grynea, 8 Jul, LYON Co (TO). G. lygdamus, 8 May, Pocahontas Co (RH). L. bachmanii, 10 & 31 Aug, Pocahontas Co (RH); 21 Aug, PALO ALTO Co (RH); 17 Aug, MONONA Co (Bob Moritz via TO). S. idalia, 30 Jun-1 Jul, Loess Hill, Caylor and Anderson Prairies (HHC, MR); 8 Jul, Lyon Co, 17 Jul, Woodbury Co (TO). C. bellona, 1 Jul, Caylor Prairie (HHC, MR). C. gorgone, 30 Jun, Loess Hill Prairie (HHC, MR).

MOTHS: TINEIDAE - Acrolophus arcanela, A. punctellus, PYRALIDAE - Urola nivalis, GEOMETRIDAE - Orthonama centrostrigaria, 5 July, at motel lights along I-80 at Stuart, Adair Co (RLL).

WISCONSIN: A rather mild winter was experienced, with spring being cool and dry and the remainder of the season cool and quite wet. Growing degree-day accumulations lagged behind normal and far behind those of 1991, with conditions 2-3 weeks delayed later in the season. Late occurrences and prolonged flight periods were noted for many species. A strong influx of V. cardui was first reported on 1-2 May in Dane Co (LF, KL), Sauk Co (AS), Winnebago Co (CS) and Douglas Co (RJ), with swarms seen in Green and Waukesha Cos 8 May-20 Jun (JE) and in Douglas Co in late May (RJ). Larvae were found on many Cirsium species (CS), including the endangered C. pitcheri on dunes in Door Co (LF), Lupinus perennis (AS) and Arctium minus (CS). D. plexippus arrived about as expected (SSB), with first sightings on 18 May, Winnebago Co, EARLY (CS) and 30 May, Douglas and Bayfield Cos (LF). Numbers were down, but not dramatically at a Door Co study site (SSB), but appeared to be about normal overall (AS). Few other migrant species and individuals were found, however E. lisa was seen in small numbers 8 Aug-9 Sep along the Mississippi Rvr in Grant and Crawford Cos (JCP, TR, LF). Extensive data were received from the DNR's Southeastern Wisconsin Wetland Lepidoptera Survey (BB, TB, SSB, HK), and from a survey at Fort McCoy, Monroe Co sponsored by the Department of Defense and The Nature Conservancy (JM). The WI moth list being compiled by LF and GB currently stands at 1115 macro species.

BUTTERFLIES: E. martialis, 29 Jul-15 Aug, Burnett Co (AS, JCP), Douglas Co (RJ, KL). E. baptisiae, 2 Aug, JACKSON Co (LF). H. ottoe, 3-6 Jul, Dane Co, new site (TR); 29 Jul-5 Aug, MONROE Co, nectaring on Monarda punctata (JM). P. verna, 20 Jun, Grant Co, 6 Jul, Dane Co (TR). A. campestris, 1 Sep, Milwaukee Co (JE). E. bimacula, 3-11 Jul, Jackson Co (TR, LF); 8 Jul, Barron Co (KL); 9-10 Jul, DOOR Co (JRW); 8 Aug, Kenosha Co (BB, HK). P. protodice, 5 Sep, Crawford Co, several seen (TR); 19 Sep, Waukesha Co, 1 female (JE). C. interior, 4 Sep, LATE (LF). E. dorcas, 9 Jul, Washburn Co (KL); 11 Jul-4 Aug, DOUGLAS Co (LF, RJ, KL). E. helloides, 11 Jul, ASHLAND Co (KL); 15 Aug, BURNETT Co (JCP); 13 Sep, Waukesha Co (JE). H. titus, 4 Sep, Bayfield Co, LATE (LF). I. irus, 20 May, Jackson, Wood Cos (AS). S. melinus, 17 Jul, TREMPLEAU Co (KL). L. melissa samuelis, 26 May-10 Jun and 27 Jul-21 Aug, Jackson Co (AS); Juneau Co (JE); Menominee & Portage Cos (HK); Monroe Co (JM); Wood Co (AS, JCP). P. saepiolus, 29 Jun, Bayfield Co (JCP). C. mutica, 27 Jul-19 Aug, Fond du Lac Co (BB, SSB, JE, HK); Ozaukee & Washington Cos (SSB). S. idalia, 30 Jun-25 Aug, Green Co (AS, KL). C. titania grandis, 1-15 Aug, Douglas Co (LF, RJ, KL, JCP). P. batesii, 12-30 Jun, Langlade, Outagamie Cos (HK); 27 Jun-4 Aug, MONROE Co (JM). P. satyrus, 4 Aug, Douglas Co (RJ); 21 Aug, Florence Co (TR). O. chryxus strigulosa, 21 May, Marinette Co (JE).

MOTHS: HEPIALIDAE - Sthenopsis thule, 16 Jul, WAUKESHA Co (HK); 17 Jul, DANE Co (TR). MIMALLONIDAE - Lacosoma chiridota, 30 May, GRANT Co, STATE (TR). SATURNIIDAE - Hemileuca maia, 22 Sep, PORTAGE Co (HK); JEFFERSON Co, larvae on purple loosestrife (Rich Henderson via LF). SPHINGIDAE - Dolba hyleus, 6-21 Aug, OUTAGAMIE Co (HK); 21 Aug, Marathon Co (JCP). Sphinx luscitiosa, 27 May, Burnett Co, on barrens (TR); 12 Jun, OUTAGAMIE Co (HK). Hemaris gracilis, 27 May, Burnett Co, on barrens (TR). Eumorpha achemon, 26 Jul, Waukesha Co (HK). Deidamia inscripta, 1 May-12 Jun, OUTAGAMIE Co (HK). NOTODONTIDAE - Hyparx aurora, 7 Jul, MONROE Co (JM). ARCTIIDAE - Crambidia casta, 23 Aug, MANITOWOC Co,

on dunes (LF); 20 Sep, MONROE Co, on barrens (JM). Grammia phyllira, 23 Aug, MANITOWOC Co, on dunes (LF). NOCTUIDAE - Macrochilo bivittata, 28 Jul, BAYFIELD Co, (LF). M. louisiana, 25 Jul, BAYFIELD Co, (LF). Catocala coelebs, 30 Aug, BAYFIELD Co, 2nd state locality (LF). C. nebulosa, 23 Aug, OUTAGAMIE Co (HK). C. luciana, 17 Sep, Outagamie Co (HK). C. abbreviatella, 28 Jun-18 Jul, Dane Co, new site (TR). C. whitneyi, 17 Jul-1 Aug, DANE Co (TR); 17 Aug, MONROE Co (JM). Autographa flagellum, 29 Jun, DOUGLAS Co (JCP). Syngrapha selecta, 25 Jul & 30 Aug, Bayfield Co (LF). S. viridisigma, 22 Aug, DOOR Co and 2 Sep, BAYFIELD Co (LF). Tarachidia virginalis, 3 Aug 1987, SAUK Co, STATE, on sand prairie, det EHM (LF). Acontia terminimacula, 21 Jul, OUTAGAMIE Co (HK). Acronicta falcula, 21 May, DOUGLAS Co (TR). Papaipema speciosissima, 1 Oct, PORTAGE Co, STATE (HK). P. appassionata, 30 Aug-1 Sep, BAYFIELD Co (LF). Hydraecia micacea, 4 Aug, OUTAGAMIE Co (HK); 30 Aug, BAYFIELD Co (LF); 3 Sep, GRANT Co (JCP). Chytonix sensilis, 30 Jul, BAYFIELD, STATE (LF). Lithophane amanda, 20 Apr, OUTAGAMIE Co (HK); 19 Sep, DOOR Co (LF). Brachylophia discinigrata, 30 Jul, BAYFIELD Co, STATE (LF). Trichoclea artesta, 17 Jul, DOOR Co, dunes (LF). Lacanobia nevadae, 30 Jul, BAYFIELD Co (LF). Orthosia segregata, 9 May, Door Co (LF). Copablepharon longipenne, 23 Aug, MANITOWOC Co, dunes, 2nd state locality (LF). Eucrotopcnemis fimbriaris, 4 Sep, MENOMINEE Co (HK); 20 Sep, MONROE Co (JM). Euxoa divergens, E. sinelinea, 27 Jul, BAYFIELD Co (LF). E. pleuritica, 21 Aug, DOOR Co (LF). E. niveilinea, 20 Sep, MONROE Co (JM). Actebia fennica, 21 Aug, DOOR Co (LF); 30 Aug, PORTAGE Co (HK); 1 Sep, BAYFIELD Co (LF). Xestia oblata, 31 Jul, BAYFIELD Co (LF). Protolampra rufipectus, 2 Sep, BAYFIELD, STATE (LF). Schinia indiana, 5-7 Jun, Menominee Co (HK, BB). S. florida, 17 Jul, DOOR Co (LF); 4 Sep, GRANT Co (JCP). S. lucens, 28 Jun, Dane Co, 16 Jul, Columbia Co (TR); 21 Jul, OUTAGAMIE Co (HK). S. nundina, 4 Sep, GRANT Co (JCP).

MICHIGAN: MN reported abnormal weather, with emergence of most species delayed by at least two weeks throughout the season. A killing frost, down to 14 degrees, severely damaged much vegetation over Memorial Day weekend. A record cold Jul was followed by much above normal rain by mid-Aug, and a wet and cloudy fall. Butterfly numbers were down. Y. cardui made a spectacular appearance statewide, with larvae found on many plants, even non-native horticultural species for sale in local stores. D. plexippus was not as common as in previous years.

The gypsy moth continues to spread in the lower peninsula, with concerns over the use of BT being expressed by citizens as well as state and federal officials.

BUTTERFLIES: P. zabulon, 28-29 Jun and 29-30 Aug, Cass, St. Joseph Cos, including the 1st state females (TH, MN). E. marcellus, 29 Jun, Cass Co (RLL, RES). P. napi oleracea, 29 Jun (RLL). G. lygdamus couperi, 29 May-14 Jun, Mackinac Co (TH, MN). L. idas nabokovi, 24 Jul, Alger Co (MN). A. vanillae, 28 Jul, INGHAM Co, STATE (TH). C. eunomia dawsoni, 13-14 Jun, Chippewa, Luce, Mackinac Cos (TH, MN). C. frigga, 30 May, Iron Co (MN). N. mitchellii, 18 Jul, St. Joseph Co (MN). C. tullia inornata, 24 Jul, Mackinac Co (MN). O. chryxus strigulosa, 30 May, Iron Co (MN). O. jutta ascerta, 30 May Dickinson Co (MN).

MOTHS: TORTRICIDAE: Archips striana, 28 Jun, Otsego Co (RHL). PYRALIDAE - Pyrausta laticlavata, 7-8 Aug, ALLEGAN Co, dunes (GB). Crambus whitmerellus, 21 Jun, Chippewa Co (GB). C. watsonellus, 22 Aug, PRESQUE ISLE Co, lakeshore wetland (GB). C. satrapellus, 25 Jul, Allegan Co, sand prairie/savanna (GB). Loxocrambus awemensis, Haimbachia albescens, 7-8 Aug, ALLEGAN Co, dunes (GB). Diviana eudorella, 25 Jul, Allegan Co, sand prairie/savanna (GB). Euzophera ostricolorella, 14 Sep, Kalamazoo Co (GB). Bandera binotella, 25 Jul-8 Aug, Allegan Co, dunes and sand prairie (GB). Peoria tetradena, 25 Jul ALLEGAN Co, STATE, sand prairie/savanna (GB). P. gemmatella, 17 Sep, Allegan Co (GB). P. roseotinctella, 25 Jul, Allegan Co, sand prairie/savanna (GB). Atascosa glareosella, 25 Jul-8 Aug, Allegan Co, dunes and sand prairie (GB). GEOMETRIDAE - Semiothisa eremiata, 25 Jul, Allegan Co, sand prairie/savanna (GB). Idaea violaceria, 7-8 Aug, Allegan Co, dunes (GB). Cyclophora nanaria, 2 Oct, MONROE Co, 2nd state record, det GB (MN). SATURNIIDAE - Eacles imperialis pini, 8-25 Jul, Otsego Co (MN). Hyalophora columbia, 13-30 Jun, Schoolcraft Co (TH, MN). SPHINGIDAE - Sphinx luscitiosa, 30 May-28 Jun, Iron, Otsego Cos (TG, MN). Darapsa versicolor, 8 Aug, St. Joseph Co (MN). NOTODONTIDAE - Dasylophia thyatroides, 7-8 Aug, ALLEGAN Co, dunes (GB). Hyparpax aurora, 25 Jul-21 Aug, Allegan, Barry, St. Joseph Cos (GB, MN). ARCTIIDAE - Haploa clymene, 7-8 Aug, Cass, St. Joseph Cos (TH, MN). Platarctia parthenos, 30 Jun-24 Jul, LUCE, Otsego, ROSCOMMON and Schoolcraft Cos (TH, MN). Caenurgia chloropha, 17 Sep, ALLEGAN Co, 2nd state record (GB). Catocala coelebs, C. semirelictata, 4-12 Sep, Cheboygan, Otsego Cos, (TH, MN). C. gracilis, 22 Aug, CLINTON Co (TH). Autographa mappa, 30 Jun, Schoolcraft Co (MN). A. californica, 9 Aug, ST. JOSEPH Co, 2nd state record (TH). Syngrapha altera, 30 Jun, SCHOOLCRAFT Co (MN). Spragueia leo, 17 Jul-22 Aug, Cass, St. Joseph Cos (MN). Raphia abrupta, 9-25 Jul, Otsego Co (MN). Acronicta quadrata, 28 Jun-8 Jul, Otsego Co (RHL, MN). Apamea apamiformis, 22 Aug, CASS Co (MN). Oligia bridghami, 5-12 Sep, Cheboygan Co (MN). Papaipema cerina, P. rutila, 25 Sep-8 Oct, Cass Co (MN). P. astuta, 8 Oct, Cass Co (MN). P. appassionata, 12 Sep, Cheboygan Co (MN). P. sciata, P. beeriana, 2-3 Oct, MONROE Co (MN). Iodopepla u-album, 22 Aug, PRESQUE ISLE Co, lakeshore wetland (GB); 12 Sep, CHEBOYGAN Co (MN). Bellura obliqua, 30 Jun, LUCE, SCHOOLCRAFT Cos (MN). Chytonix sensilis, 7-8 Aug, ALLEGAN Co, dunes (GB). Fagitana littera, 24 Jul, KALAMAZOO Co, in bog (GB). Condica sutor, 23 Oct, CASS Co (MN). Cirrhophanus triangulifer, 22 Aug, CASS Co (MN). Lithophane semiusta, 6 Apr, CLINTON Co (MN). Anathix aggressa, 26 Sep-2 Oct, CASS, MONROE Cos, STATE (MN). Brachionycha borealis, 20 Apr-1 May, Otsego Co (MN, RWR). Xanthia togata, 3-23 Oct, Cass, MONROE Cos (MN). Adita chionanthi, 8-12 Sep, CHEBOYGAN, Clinton Cos (TH, MN). Lacanobia nevadae, 12 Jun-22 Jul, Chippewa, Schoolcraft Cos (MN). L. radix, 30 Jun-23 Jul, ALGER, LUCE, Schoolcraft Cos (MN). Trichordestra rugosa, 30 Jun-22 Jul, LUCE, Schoolcraft Cos (MN). Papestra biren, 30 May, IRON Co (MN). Faronta rubripennis, 5 Sep, CHEBOYGAN CO (MN). Orthosia segregata, 22 May, EMMETT Co, lakeshore (GB). Trichosilia manifesta, 29 May, OCEANA Co, dunes (GB). Euxoa quebecensis, 22 Jun, EMMETT Co, dunes (GB). E. aurulenta, 29 May, Oceana Co, dunes (GB). Richia acclivis, 22 Aug, CASS Co, STATE (MN). Xestia oblata, 30 Jun-22 Jul, LUCE, Schoolcraft Cos (MN). Schinia thoreau, 8 Aug, ST. JOSEPH Co (MN).

ZONE 9: THE SOUTHEAST: TENNESSEE, MISSISSIPPI, ALABAMA, VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, FLORIDA.

Coordinator: Andy Beck (AFB)

Contributors: Richard Anderson (RA), John Bryson (JB), John Calhoun (JC), Rick Kergosien (RK), Bryant Mather (BM), Kelly Richers (KR), Jeff Sloten (JS), Dick Smith (RHS), Jim Tuttle (JT), & Steve Williams (SW). It was a mild year in North Florida, with no real winter to speak of at either end of the calendar. Collecting was nonetheless down, judging from the low volume of reports received. Thanks to all contributors, old and new.

TENNESSEE, ALABAMA, NORTH CAROLINA, SOUTH CAROLINA, BERMUDA: No reports received.

FLORIDA (FL): Contributors: RA, JC, JT, SW.

MOTHS: SPHINGIDAE - P. strigilis, Key Largo, Monroe Co, 28 Dec; P. carteri, Key Largo, 28 Dec; M. pseudothyreus, Key Largo, 28 Dec; P. lusca, Everglades NP, Monroe Co., 29 Dec, all sight records (all JT).

BUTTERFLIES: Hesperidae. N. neamathla, Dade City, Pasco Co, 17 May; E. dukesi, Dade City, 9 May-10 Jun; 14 Sep; A. loammi, Dade City, 17 May; A. aesculapius, Rock Springs, Orange Co, 5 Apr (all JC); T. azia, St Petersburg, PINELLAS Co, Nov, nectaring on Solidago sp (RA via JC); I. irus, nr Middleburg, Clay Co, 29 Feb EARLY (JC); E. angelia, St Petersburg, PINELLAS Co, Nov, nectaring on Solidago sp (RA via JC); L. cassius theonus, Dade City, PASCO Co, 30 Aug; A. clyton flora, Dunedin, Pinellas Co, 5 Jul; E. portlandia floralae, Rock Springs, 5 Apr (all JC).

GEORGIA (GA): Contributor: SW

MOTHS: GEOMETRIDAE - I. larvaria, E. clemataria, P. transversata, Conley, Clayton Co, 31 Oct. NOCTUIDAE - M. latipes, Conley, 30 Oct (all SW).

BUTTERFLIES: Pieridae. P. protodice, Z. cesonia, Conley, Clayton Co, 31 Oct; A. andria, A. celtis, High Falls SP, Monroe Co, 1 Nov (all SW).

MISSISSIPPI (MS): Contributors: JB, BM, JS.

BUTTERFLIES: Hesperidae. U. proteus, Tupelo, LEE Co, 10 Oct, NORTH, additional collections through 25 Oct (JB via BM); P. aaroni, Bay St. Louis, HANCOCK Co, 27 Sep, STATE, brackish marsh, additional captures 28 Sep by JS & RK (JS). Nymphalidae. S. c. cybele, Tupelo, LEE Co, 2 Sep, 5th MS Co from which this sp is recorded (JB via BM).

VIRGINIA (VA): Contributor: KR, RHS.

MOTHS: PYRALIDAE - Perispasta caeculalis, Penn Laird, Rockingham Co, 23 May, bl (KR). GEOMETRIDAE - Semiothisa promiscuata, S. minorata, S. granitata, Iridopsis larvaria, Eufidonia notataria, Hypagritis unipunctaria, Euchlaena serrata, Xanthotype urticaria, Lambdina pellucidaria (abundant), Tetracis crocallata, T. cachexiata, and Hethemia p. pistasciaria, Penn Laird, 23 May, all at bl (KR). NOCTUIDAE - Marathyssa inficita, Penn Laird, 23 May, bl (KR).

BUTTERFLIES: Hesperidae. A. cellus was NOT seen at several historical sites as follows: Difficult Run, Fairfax Co, 25 May 1990; 1, 9 Jun 1990; 6, 13 Jun 1992; Hopewell Gap, Prince William Co, 13 Jun; Thoroughfare Gap, Fauquier Co, 1 Jun 1990; 13 Jun 1992 (all RHS); P. coras & P. themistocles, Penn Laird, Rockingham Co, 23 May (KR); E. phaeton & E. anthedon, Hopewell Gap, 13 Jun (RHS).

ZONE 10: THE NORTHEAST: NEWFOUNDLAND, LABRADOR, MARITIMES, NEW ENGLAND, NEW YORK, PENNSYLVANIA, NEW JERSEY, MARYLAND, DELAWARE, DISTRICT OF COLUMBIA.

Coordinator: Dave Winter (WDW)

Contributors: Chris Adams (CA), Jim Boone (JB) via MS, Richard Boscoe (RB), William Boscoe (WB), Brian Cassie (BC), Ed Cohen (EC) via RS, Luke Curtis (LC) via MS, Robert Dirig (RD), Thomas Dodd (TD) via BC, Edna Dunbar (ED) via BC, Mark Fairbrother (MF), John Fales (JF), Douglas Ferguson (DF), Tim Fowler (TF), Robert Godefroi (RG), John Grehan (JG) via MS, Mark Gretch (MG), Scott Griggs (SG), W.R. Grooms (WG) via JF, James D. Hedbor (JDH), Henry Hensel (HH), Richard Hildreth (RH) via BC, Craig Hollingsworth (CH) via WDW, Jim Holmes (JH), Mark Kasprzyk (MK) via BC, Warren Kiel (WK), Ross Layberry (RL), Lynne Lovell (LL) via BC, Donald Miller (DM), Mark Mello (MM), Gordon Nielsen (GN) via MS, Bruce Parker (BP) via MS, William Partridge (WP) via RL, Roger Pease (RP), Ed Peters (EP), Jan Reese (JR) via JF, Howard Romack (HR), Michael Sabourin (MS), Calvin Schildknecht (CS), David Shaw (DS), Tim Simmons (TS) via BC, Richard Smith (RS), Alfred Spoo (AS), Ned Swanberg (NS), Martin Turgeon (MT), Richard Walton (RW), Darryl Willis (GDW), Dave Winter (WDW), Amy Wright (AW). Determinations: P.T. Dang (PTD), Douglas C. Ferguson (DCF), John R. Grehan (JG), J. Donald Lafontaine (JDL), Bernard Landry (BL), Jean-Francois Landry (JFL), William E. Miller, (WEM), A. Mutuura (AM), Michael A. Roberts (MAR), Michael Sabourin (MS), Dale F. Schweitzer (DFS).

GENERAL: Reports lacking specific locality data, i.e., giving county only, or a general region of the state, are so entered at the request of the contributor, for reasons of conservation. Records with the notation "by sp perm" (by special permit) are state-listed endangered species taken during an approved faunal survey. Through much of the northeast the 91-92 winter was warmer than usual, and with less snow cover, and most of the '92 collecting season cooler, cloudier, and damper than usual. In MD, for example JF noted "butterfly active days" Apr-Oct only 52% of days, vs 78-7% the previous two years. Moth collecting was far below expectations in late summer, esp. for Catocala.

MIGRATORY SPECIES: As predicted by L. Brower's reports of excessive winter kill of D. plexippus in the Mexican overwintering grounds, JF reported single returnees 24 & 25 Apr in Calvert Co, MD with no further sightings until 11 & 20 Jun. Most specimens, feeding and mating, were seen in the first half of Aug. Small numbers of migrators were seen from 31 Aug to 16 Oct. Total observations for the year were 86% below 1991. In Lancaster Co PA, CS saw no monarchs until early Aug, small numbers through the month, only 8 larvae compared with his usual hundreds reported, and a short migration period, 8-14 Sep. BC, for the MA B'fly Club, reported very low numbers, and only in Falmouth and Martha's Vineyard. MG in Essex Co, northeastern NY, saw none until 11 Aug, few thereafter. An observer in Waldo Co, coastal ME (via WDW), who usually rears dozens of immatures, found no ova or larvae at all. RL reported 1 adult 14 Jul on P.E.I. (past prov. records minimal), and none in NS, late Jul. V. cardui was reported in increased numbers by JF, Calvert Co, MD, starting 23 Apr with a peak on 3 May; numerous until 23 Oct except for complete absence throughout Aug. BC and the MBC noted increased numbers 28 Apr-14 Oct, with larvae on Cynoglossum virginianum, Althaea officinalis, Artemisia vulgaris, Bachelor Button, Hollyhock. MG in NE NY confirmed large flight; DS noted large numbers in all northern counties of NY to early Aug, with many individuals in early May appearing to be moving southward. WDW in early Sept, Islesboro, ME, found many larvae on C. muticum, all parasitized. RL found many larvae on Artemisia stelleriana along beach edges 14-19 Jul on PEI. WP on 20 May saw a large migration flying west, off the ocean, at the Panmure Is Causeway, PEI, nearest land 50 mi E, or 20-30 mi NE or SE. JF recorded '92 as the third largest of five major migrations of P.

sennae in the last eighteen years in southern MD, with the first seen 21 May 1½ mo. ahead of previous EARLY record. First southward movement noted 2 Aug, and 13 & 17 Aug flying in the rain. First white female noted for MD 28 Aug; also 29 May EARLY, Fairfield, Montgomery Co (EC), and 9 Jun Scaggsville, Howard Co (RS).

IMMIGRANT SPECIES: Noctua pronuba, merits special attention as its numbers and range increase in the northeast following its first recognition in Nova Scotia in 1979. ME: Islesboro, Waldo Co, 8 & 10 Sep (WDW). VT: Burlington, Chittenden Co, 6 Jun-9 Aug (9), and Franklin Bog, Franklin Co, 14 Aug (JG); S. Hero, Grande Isle Co, 26 Aug (4) (JH). MA: Holliston, Middlesex Co, 20 Jul, 11 Aug (3), 25 Aug (2), 5 Sep, 7 Sept (2) (GDW); Dedham, Norfolk Co, 11 Jun, 17 Jul, 20 Jul, 3 Aug, 15 Aug, 17 Aug (2), 18 Aug, 19 Aug, 24 Aug (2), 25 Aug (2), 26 Aug (2), 27 Aug (2), 28 Aug (4) (collecting hiatus 29 Aug-14 Sep) 19 Sept (WDW). MSSF Plymouth Co 1 Aug (MM). S. Dartmouth, Bristol Co, 28, 29 Jun (MM). NY: Cambridge, Washington Co, STATE, 25 Jul (HR); Bellona, Yates Co, WEST, 3-10 Aug (2) (CH). MD: Glen Elg, Howard Co, STATE, SOUTH, 18 Aug (DF).

LABRADOR and NEWFOUNDLAND: *No reports.*

NEW BRUNSWICK:

BUTTERFLIES: L. idas common 21-26 Jul, not only on usual clifftops and dunes, but in 13 bogs in Cape Breton & Richmond Co; hostplant Empetrum nigrum present but largely obscured by sphagnum, RL.

NOVA SCOTIA:

MOTHS: Ypsolopha falciferalia, 13 Oct and Cydia ingrata 27 May St. Basile, Madawaska Co; Sphinx drupiferarum 20 Jun Belone Brk, Restigouche Co, Apantesis williamsii 30 Jun St. Basile, and Anomis erosa 18 Sep St. Basile, NORTH, (all MT). Cissusa spadix 22 May St. Basile, MADAWASKA CO (MT). Ascalapha odorata 20 Sep Edmundston, Madawaska Co, and Ctenoplosia oxygramma 18 Sep vic Edmundston (HH); Eosphoropteryx thyatyroides 8, 11 Aug St. Basile (MT); Syngrapha altera larvae (prev. unknown) on Vaccinium, vic State Lk, Restigouche Co, em. 18-24 Jun, (HH/MT); Syngrapha selecta 7-24 Aug Edmundston, (HH). S. surena 22, 24 Aug Edmundston (HH), and 23, 25 Aug St. Basile (MT); S. alticola ex ova from Churchill, Man. Jul 1991, reared on dandelion, em. 24, 27 May 92, larva prev. unknown (HH); Apamea ophiogramma 7 Aug Edmundston (HH). Apamea plutonia 18 Jul and Hypocoena defecta 18 Aug E Iriquois Rvr, Madawaska Co; Sideridis maryx 12 Jul, Stretchia plusiaeformis 11 May, and Morrisonia evicta 14 May St. Basile (all MT). Ufeus satyricus, 11, 16, 24 Oct Edmundston (HH).

PRINCE EDWARD ISLAND:

BUTTERFLIES: V. atalanta 16 Jul taken 4 mi out to sea E of Panmure Is, (WP); E. anthedon, 15 Jul E. of Milltown Cross, Kings Co, and 17 Jul Brae Harbour, Prince Co, PROVINCIAL, (RL); C. inornata 17 Jul Brae Harbour, PROVINCIAL, (RL).

VERMONT: *Errata: '91 records of Catocala amica have been det by DFS as lineella.*

MOTHS: Sthenopsis thule 25 Jul S. Hero, Grand Isle Co, STATE, (JH); Amydria efferentella 28 Jul Underhill SP, Chittenden Co (JB), det JFL; Polix coloradella 14 Jul Lincoln, Addison Co (LC), det JRG; Asymmetrura impositella 16 Aug Underhill (MS), det JFL; A. scintillifera 28 Jul Colchester, Chittenden Co (MS), det JFL; Arogalea cristofasciella Camp Johnson, Colchester (JG) det JFL; Dichomeris picrocarpa 20 Aug Colchester (MS); Anacamptis agrimoniella 20 Aug New Haven, Addison Co (JG); Plutella porrectella 3 Aug S. Burlington, Chittenden Co (JG) det JFL; Olethreutes electrofuscus, 13 ul- 15 Aug, and O. atrodentata 20 Jul Colchester, (MS); O. punctata 15 Jul S. Burlington (MS); O. valdana 13 Jul-2 Aug Colchester (MS); O. polluxana 1 Aug Franklin Bog (JG) det MS; Phaneta umbrastriana 8 Jun S. Burlington (MS); Eucosma vagana 27 Jun S. Burlington (JG) det MS; Epiblemma desertana 30 May Camp Johnson (MS); Notocelia trimaculana S. Burlington (MS); Pseudexentera virginiana 9-10 May Camp Johnson (JG) det MS; Epinotia nonana 22 Jul-16 Oct S. Burlington off bark of mature cottonwood (MS); Ancyliis mediofasciana 22 May Franklin Bog (JDH), det MS; Cydia candana 17, 30 Apr Randolph, Orange Co, reared from sugar maple seeds (BP) det WEM; Cnephasia stephensiana 13-20 Jun S. Burlington (JG) det AM; Sparganothis violaceana 7 Jun Belvidere, Lamoille Co (MS) det MAR; Aethes oenotherana 3 Aug S. Burlington (JG); ? Platyptilia comstocki 25 Aug Mt Mansfield, Lamoille Co (JB) det BL; Stammodes gibbicostata 25 Aug-15 Sep Underhill (JB) det JRG; Hypenodes palustris 14 Aug Franklin Bog (JG); Catocala gracilis 5 Aug Grand Isle, and C. coccinata 4 Aug Grand Isle (SG), latter det DFS; C. praeclara 4 Aug Franklin Bog, Franklin Co (JH) C. micronympha 3 Aug S. Burlington, JG det JDL; Rachiplusia ou 22 Sep Hinesburg, Chittenden Co (GN) det MS; Apamea ophiogramma 7 Aug S. Burlington (JG) det JDL.

NEW HAMPSHIRE:

MOTHS: Semiscopsis merricella 8-21 May, and Menesta tortriciformis 12 Jun Whitefield, Coos Co (WK); Polix coloradella 23 Aug Jefferson, Coos Co (JH); Epiblema tripartitana 20 Jul, Dichrorampha gueneana 24 Aug (1988), and Cnephasia stephensiana abundant late Jun-late Jul, Whitefield (WK); Clepsia moeschleriana both forms abundant 25 July at 5500' in Alpine Gardens Mt Washington, Coos Co (JH&WK). Perispasta caeculalis 18 Jun, Cerura scitiscrita canadensis 8 Jun, Catocala neogama 18 Sep, damaged male, NORTH, Nycteola frigidana ex larvae 15 Jun in loosely webbed willow leaf tent, emerged 18-26 Jul, Acronicta laetifica 22, 26 Jul, comp. det DCF, and Agroperina inficita 10 Jul 1991, det DCF (all WK), Spartiniphaga panatela 4 Jul (JH), and Sideridis maryx 24 Jun (WK), all Whitefield.

MAINE:

MOTHS: Atteva punctella 31 Aug, and Anomis erosa 9 Sep Islesboro, Waldo Co (WDW).

BUTTERFLIES: C. eunomia 17 Jun Magalloway, Oxford Co, observed ovip on Vaccinium oxycoccos; confined females ovip on same, reared to 3rd instar diapause (RB).

MASSACHUSETTS:

MOTHS: Eumacaria latiferrugata 21 May Ft Devens, Worcester Co (MM); Itame n sp nr inextricata (by sp perm) 10 Jun, 10 Jul (MM) and 26 Jul (EP), Ft Devens, 18 Jul, MSSF, Plymouth Co (MM). Glenn cognataria 30 May, 26 Aug and Scopula cacuminaria 26 Jul (MM); Sphinx drupiferarum 19 Jun (EP); Lapara coniferarum 11 Jun-26 Jul (MM&EP); Epantheria scribonia 26 Jun (MM); Idia julia 17 Jul (EP); Zanclognatha martha (by sp perm) 10-26 Jul Ft Devens, (MM&EP); Hypenodes

hypocritalis 10 Jul, det JDL, Hyponodes franclemontii 10 Jul, Hyponodes palustris 10 Jul, det JDL, Dyspyralis puncticosta 3 Aug, det JDL, and Anomis erosa 16 Oct (EP), Zale curema 14 May-19 Jun (MM&EP); Catocala judith 26 Aug (MM); 2 C. n sp nr lineella 27 Jul-16 Sep (MM&EP) all Ft. Devens. Nola ovilla 18 Jul det JDL, Paectes pygmaea 11 Jul, Abrostola ovalis 21 Jun, all Shirley, Middlesex Co (EP). Hyperstrotia pervertens 8 Jul (EP); Apamea vulgaris 25 Jul (MM); Crymodes burgessi 26 Aug-28 Sep (MM&EP); Eremobina hilli 10 Aug, det JDL, and Oligia crytora 10 Jul (EP); Lemmeria digitalis 28 Sep, Platyperigea meralis 28 Aug, 4 Sep, and Amolita roseola 17, 26 Jul (MM&EP) all Ft. Devens. Psectraglea carnosia 10 Oct Dedham, Norfolk Co (WDW), 11 Oct Ft Devens (MM), 24 Oct S. Dartmouth, Bristol Co (MM); Apharetra purpurea 29 Jun-27 Jul (MM&EP); Leucania linda 6 Sep, and Homorthodes furfurata lindseyi 28 Aug (EP), both det JDL; Agrotis manifesta, 30 May (MM); Pleonectopoda pleuritica 10 Aug-4 Sep, Euxoa violaris 14-28 Sep, and Aplectoides condita 11, 22 Jun (MM&EP) all Ft. Devens. Abagrotis crumbi benjamini 28 Jul S. Dartmouth (MM) and Derrima stellata 7 Aug (WK), and 10, 26 Aug (MM&EP) Ft. Devens.

BUTTERFLIES: P. midea 23 May Savoy, Berkshire Co (TS); S. c. falacer peaked at 3575 counted 11 Jul, Foxboro, Norfolk Co (BC). F. ontario 27, 28 Jun (TD), 1 Jul (LL), Worcester, Worcester Co, 11 Jul Montague, Franklin Co (MF); 11 Jul Wrentham, Norfolk Co and 28 Jun-11 Jul Foxboro (BC). P. m-album 3 Jun Plymouth, Plymouth Co (MK); 6 Aug Sudbury, Middlesex Co (RW); 6-20 Aug Easton, Bristol Co (BC); 21 Aug Milford, Worcester Co (RH); E. laeta, 22 May-1 Jul Mt. Greylock, Berkshire Co (ED); G. lygdamus couperi 7 Jun Tewkesbury, Middlesex Co, STATE (RG).

NEW JERSEY, CONNECTICUT, RHODE ISLAND: No reports.

NEW YORK:

BUTTERFLIES: (all DS exc. last) E. martialis 15 Jun Saratoga Co Arpt, SARATOGA CO; E. lucilius 30 Jul Brasher Twp, ST. LAWRENCE CO; T. lineola 16 Jul Greenwich Twp, WASHINGTON CO, 21 Jul E of Lake Placid, ESSEX CO, and 22 Jul Bombay Twp, FRANKLIN CO; P. peckius 30 Jul Bombay Twp, FRANKLIN CO; W. egeremet 30 Jul, Ft. Covington Twp, FRANKLIN CO; P. verna 27 Jul Mendon Ponds Pk, MONROE CO; A. logan 18 Jul Bennington Twp, WYOMING CO; 19 Jul Mendon Ponds Pk, MONROE CO; P. massasoit 22 Jul Covington Twp, FRANKLIN CO; P. viator 30 July Lisbon Twp, ST. LAWRENCE CO; E. dion 16 Jul Karner Pine Bush, ALBANY CO; E. vestris 22 Jul Brighton Twp, FRANKLIN CO; A. hianna 15 Jun Saratoga Co Arpt, SARATOGA CO; P. troilus 20 Jul Van Buren Twp, ONONDAGA CO, Westmoreland Twp, ONEIDA CO, and 22 Jul Bombay Twp, FRANKLIN CO; E. olympia 15 May Brownville Twp, JEFFERSON CO; F. tarquinius 30 Jul Brasher Twp, ST. LAWRENCE CO; H. titus, 22 Jul Covington Twp, FRANKLIN CO; I. niphon 22 May, Mendon Ponds Pk, MENDON CO, E. laeta 5 Aug worm male, Exeter Twp, OTSEGO CO; G. lyg. couperi 10 Jun, Deerfield Twp, ONEIDA CO; 10 Jul Morehouse Twp, HAMILTON CO; 15 Jun Rotterdam Twp, SCHENECTADY CO; L. mel. samuelis 15 Jun Saratoga Co Arpt, few worn individuals observed; P. "pascoensis" 29 May Bennington Twp, WYOMING CO, 18 Aug Mendon Ponds Pk, MONROE CO, 23 Aug Sand Lk, RENSSELAER CO, all based on series >10; E. anthedon 22 Jul Brighton Twp, FRANKLIN CO, and 30 Jul Norfolk Twp, ST. LAWRENCE CO; C. inornata 14 Jun S. Barre, Orleans Co, WEST. RD reported determining second NY record for O. jutta, taken in Jul nr Lake Placid, Essex Co, by an unnamed collector.

PENNSYLVANIA:

MOTHS: C. piatrix LATE 5 Nov, and C. maestosa 28 Aug, 3 Oct Willow Grove, Montgomery Co (WB).

BUTTERFLIES: CS reported on episodes of E. claudia and D. plexippus chasing each other, N. antiopa and B. astyanax chasing B. philenor and each other. AS obs. E. lucilius ovipositing on A. canadensis 25 Sep Rothsville, Lancaster Co.

MARYLAND:

MOTHS: Hemileuca maia 12 Nov Lusby, Calvert Co (JF).

BUTTERFLIES: E. clarus in Talbot Co was very high, with peaks of 85 per day at single sites in mid-Aug, but skippers generally were very low (JF); P. m-album 29 Mar EARLY, Talbot Co (JR); E. laeta 29 Apr Potomac SF, GARRETT CO (RS); I. irus 25 Apr Lusby, CALVERT CO (WG).

DELAWARE:

BUTTERFLIES: P. bulenta numerous 19 Jul nr Bombay Hook NWR, Kent Co, STATE, nectaring on A. cannabinum nr edge of marsh supporting Spartina cynosuroides, presumed local hostplant (RS).

DISTRICT OF COLUMBIA: Clintonius primus 3 Nov, EAST, UPI.

ZONE 11: HAWAII and PACIFIC ISLANDS.

Coordinator: David Preston

Contributors: Dan Pettr (DP), Dale L. Clayton (DLC), and F.G. Howarth (FGH). Wetter than normal season. The two native butterflies Vanessa tameamea and Udara blackburni were seen in higher numbers than some years but remain uncommon. As of yet no reports of new introductions due to Hurricane Iniki, September 11 ("911"). Heavy rains that followed the hurricane did not seem to effect the native butterflies, too early to assess.

HAWAIIAN IS:

BUTTERFLIES: KAUAI I: 11-14 May, Hylephila phyleus, Papilio xuthus, Pieris rapae, U. blackburni, Strymon bazochii, Lampides boeticus, Agraulis vanillae, V. tameamea, Danaus plexippus, Brephidium exilis; Lampides and Brephidium were collected, all others were sighted only. ex. DP and DLC.

BUTTERFLIES: HAWAII I: 23-24 May, H. phyleus, P. xuthus, P. rapae, U. blackburni, Tmolus echion, S. bazochii, L. boeticus, A. vanillae, V. tameamea, D. plexippus, all were collected except V. tameamea. ex. DP and DLC.

BUTTERFLIES: OAHU I: 30 May-8 June, Erionota thrax, P. xuthus, P. rapae, U. Blackburni, B. exilis, L. boeticus, V. tameamea, D. plexippus - specimens collected, DP and DLC.

BUTTERFLIES: NIIHAU I: 16 May, S. bazochii, D. plexippus and A. vanillae. Agraulis specimens tended to be small, (one specimen fw = 26mm from wing base to apex). ex. DP and DLC.

MOTHS: MAUI I: Sept 1992 - Feb 1993, Manduca Blackburni - 3 larvae collected, no adults seen, DJP and FGH.

ZONE 12: THE NORTHERN NEOTROPICS: MEXICO, CENTRAL AMERICA, ANTILLES.

Coordinator: Eduardo Welling M. (EW)

"Welling reporting from Houston, Texas comments that there were no reports from his zone."

ZONE 13: SOUTH AMERICA

Coordinator: Boyce Drummond

Contributors: Keith S. Brown, Jr. (KB) & Ron Leuschner (RHL). Only two brief reports were received this year, prompting speculation that recent enforcement of the Lacey Act by U.S. Fish & Wildlife agents may have dampened enthusiasm for reporting on collecting activities outside the U.S.A. KB's usually long annual report

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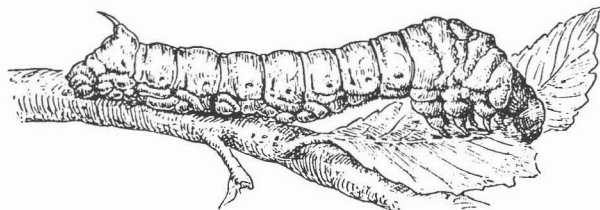
Coordinator: Boyce Drummond

Field Trip to Otsego County, Michigan

Following the 1992 annual meeting of the Lepidopterists' Society (in East Lansing, MI) fourteen lepidopterists converged at Mo Nielsen's hut in Otsego County, Michigan. A certain amount of discussion ensued regarding the preparation of dinner (Ted and Stephanie managed to reheat the spaghetti sauce without burning it) and the various mothing locales in the area. Following the excellent repast, collectors departed for their respective collecting points. Many interesting lepidoptera were collected or seen. The following morning moth-ers were found busily sorting, examining and pinning specimens amid breakfast dishes. Those who attended were Mike and Todd Gilligan, Ted and Terry Herig, Bernard Landry, Jean-Francois Landry, Ron Leuschner, Stephanie, Ron, Erin and Shannon McKown, Greg Swanson, Mo Nielsen and Roger Zebold. Photos courtesy of Mo Nielsen.



Photo captions: 1- Stephanie McKown and Ted Herig. 2- Mo Nielsen. 3- Terry Herig. 4- Fruit of the Loom Sheet Inspectors #12 and #13 (Leuschner and Swanson). 5- Ron Leuschner finds an interesting moth. 6- Erin and Ron McKown. 7- Bernard Landry and Jean Francois Landry preparing micros. 8- Greg Swanson and Todd Herig watch Mike Gilligan sort moths. 9- "Is this pepper or micros on my fried eggs?!!!" (Ted). 10- A tired but happy lepidopterist (Mike). Roger Zebold left before his picture could be taken and Shannon McKown never stayed in one place long enough to be photographed.



Election Results

Election of Officers, 1992

The 697 ballots received by the 15 January 1992 deadline have been counted, with the following results. The names of the successful candidates are in boldface type.

President:

Paul A. Opler 650

write-ins:

George T. Austin 3
Bozo the Clown (non-member) 1
Julian P. Donahue 1
Thomas C. Emmel 1
J. D. Lafontaine 3
Robert C. Lederhouse 1
Ray B. Nagle 1
Mogens C. Nielsen 1
Floyd W. Preston 1
John E. Rawlins 1
Arthur M. Shapiro 11
Richard J. Skalski 2

Vice Presidents:

Chen-Shing Lin 576
Jorge E. Llorente-Bosquets 571
Frederick W. Stehr 620

write-ins:

Vitor O. Becker 1
Lincoln P. Brower 1
J. Richard Heitzman 1
Thomas W. Kral 2
Robert C. Lederhouse 1
Eric H. Metzler 1
C. Don MacNeill 2
David L. Wagner 1

Treasurer:

Robert J. Borth 637

write-in:

Eric L. Quinter 1

Executive Council, Members-at-Large:

John V. Calhoun 368
Robert C. Lederhouse 355*
William E. Miller 381
Maria Alma Solis 258
James P. Tuttle 355*
Adrienne Venables 208

write-ins:

Eric J. Metzler 1
James S. Miller 1
Reginald P. Webster 1

* As specified in the By-Laws, Article V, Section 1, "A tie vote in an election for any office of the Society will be settled by a single toss of a coin, performed by a disinterested person in the presence of the Secretary." The toss was won by Robert Lederhouse.

Karl Jordan Medal Representative for 1994:

Susan J. Weller 616

write-ins:

Philip J. DeVries 1
Marc Epstein 1
J. Paul Grey 1
J. D. Lafontaine 1
Robert C. Lederhouse 1
Michael Sabourin 1
Kent H. Wilson 1

Constitutional amendment (see NEWS #5, p. 87, 1992 for text). A two-thirds majority of members voting by mail ballot is required for passage.

For	584
Against	62
Abstain	51

Four ballots were invalid with regard to Members-at-Large, because the member in each instance voted five or six names for only three available positions.

Comment: The new procedure, recommended by Treasurer Bob Borth, of sending out but a single return envelope with the ballot/renewal notice, was intended not only to keep the ballot mailing under one ounce for savings on postage of over \$400 to the Society, but also to reduce return postage costs for members by one-half. Not only were these goals accomplished, but the number of ballots returned increased 43% above the average of the previous three years. This practice is worth continuing.

Respectfully submitted,
William D. Winter, Secretary
31 January 1993

Officers of the Society are now as follows:

Until 11 July 1993:

President: Ray Stanford
Immediate Past President: Floyd Preston
Vice Presidents (3): M. Deane Bowers
Hiroshi Inoue
Ian Kitching

After 11 July 1993:

President: Paul A. Opler
Immediate Past President: Ray Stanford
Vice Presidents (3): Cheng-Shing Lin
Jorge E. Llorente-Bosquets
Frederick W. Stehr

Full Calendar Year:

Secretary: William D. Winter
Assistant Secretary: Julian P. Donahue
Treasurer: Robert J. Borth
Assistant Treasurer: Eric H. Metzler
Publications Manager: Ron Leuschner
Sponsored Memberships Sec'y: Floyd W. Preston

Members-at-Large, Executive Council:

(terms expire at Annual business Meeting in year indicated)

1993: Karolis Bagdonas
Steven J. Cary
Stephanie S. McKown
1994: Charles V. Covell, Jr.
Linda S. Fink
Scott E. Miller
1995: Eric H. Metzler

Robert K. Robbins
J. Benjamin Ziegler
1996: John V. Calhoun*
Robert C. Lederhouse*
William E. Miller*

Editorial Committee:

Paul Opler (chairman)
Stephanie S. McKown (NEWS)
John Brown (JOURNAL)

William Miller (MEMOIRS)
Frederick W. Stehr (at large)

Karl Jordan Medal Representative:
1993: David L. Wagner
1994: Susan J. Weller

* term begins at end of Annual business Meeting, 11 July 1993.

New Additions to Endangered Species List

by Paul A. Opler
US Fish and Wildlife Service
Office of Information Transfer
Ft. Collins, Colorado

The most recent version of the U.S. List of Endangered and Threatened Wildlife and Plants was published on August 29, 1992. This list includes those species of Lepidoptera protected under regulations of the Endangered Species Act of 1973. Copies of the list may be obtained from the Publications Unit, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

Since the list was published the Karner blue (*Lycaides milissa samuelis*) and Myrtle's Silverspot (*Speyeria zerene myrtleae*) have been added to the list as the result of final rulemakings published in the Federal Register.

As the result of settlement of a lawsuit filed by several conservation organizations, the Fish and Wildlife Service has agreed that it will add 401 candidate plants and animals to the Endangered Species List by the end of 1996. Butterflies that will be added to the federal list under this agreement are Wright's Checkerspot (*Euphydryas editha quino*), Behren's Silverspot (*Speyeria zerene behrensii*), and the Callippe Silverspot (*Speyeria callippe callippe*).

Society members are encouraged to refer to the September/October 1992 NEWS, pg. 85-87 to see what regulations apply to listed and candidate species. Unanswered questions about the effects of these listings should be referred to your regional Fish and Wildlife Service solicitor or law enforcement office.

Endangered Status for three foreign butterflies

from the Federal Register, Vol 58, No.9,
Thursday, January 14, 1993.

The US Fish and Wildlife Service has determined endangered status for the Homerus (*Papilio homerus*), Corsican (*Papilio hospiton*), and Luzon peacock (*Papilio chikae*) swallowtail butterflies, which are found, respectively, in Jamaica, Corsica (France) and Sardinia (Italy), and the Philippines. **Effective date: February 16, 1993.** All occupy restricted ranges and are jeopardized by human habitat disruption and collection. This rule will implement the protection of the Endangered Species Act of 1973 (ESA or the Act) for these three butterflies. These three butterflies along with Queen Alexandra's birdwing (*Troides alexandrae*) have been placed on appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Convention). *Troides alexandrae* was previously added to the U.S. List of Endangered and Threatened Wildlife in the Federal Register of

September 21, 1989. The other three --the Homerus, Corsican, and Luzon peacock swallowtail butterflies -- are now classified as endangered by the International Union for Conservation of Nature (IUCN).

In the proposed rule of September 10, 1991, and associated notifications, all interested parties were requested to submit information that might contribute to development of a final rule. Cables were sent to United States embassies in countries within the ranges of the subject species, requesting new data and the comments of the governments of those countries. Four comments were received. Dr. Tim R. New, Chairman of the IUCN Species Survival Commission Lepidoptera Group, supported the listing of all three butterflies. The Science Office of the U.S. Embassy in Rome collected data supporting the listing of *P. hospiton*. However, both Rudi Mattoni, editor of the Journal of Research on the Lepidoptera, and Professor H. Descimon of the University of Provence in France submitted comments suggesting that *P. hospiton* might not be endangered. Both observed that suitable habitat for this species is still widespread and that overcollecting is not a major problem. Nonetheless, they also indicated that the species is rare and at least potentially jeopardized by habitat destruction. In addition, Professor Descimon pointed out other possible problems, including hybridization, heavy parasitism, and difficulty in enforcing protective laws. These factors, together with information available from other sources, have led the Service to conclude that classification of *P. hospiton* as endangered is appropriate.

A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the ESA.

A. *The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range*

Habitat destruction is the main factor in the decline of at least two of these species. The Homerus Swallowtail originally was recorded from most parts of Jamaica, but now is restricted to two disjunct areas of virgin forest, each comprising only a few square kilometers. Both populations are continuing to decline, largely because of logging and agricultural activity.

The Corsican swallowtail has declined dramatically on both Corsica and Sardinia. On each island, the food plants of the butterfly are believed by the local people to be poisonous to sheep, and are therefore being destroyed by fires. In addition, developments such as ski resorts have destroyed habitat on Corsica. Populations of the butterfly are now extremely localized.

The Luzon peacock swallowtail is found in a mountainous area, part of which is a popular summer tourist resort. New roads and other developments are reducing available habitat for the butterfly.

B. *Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

Excessive collection by butterfly enthusiasts and commercial interests is a problem for all three species, and is the main factor jeopardizing the Luzon peacock swallowtail. The latter is among the most beautiful and desirable members of the family, and its habitat is becoming easily accessible through road construction. It is readily captured, as its flight is very slow and it is attracted by decoys. Commercial collecting has been intensive and prices on the international market have been remarkably high for this species. In 1983 specimens were being sold in Japan for the equivalent of U.S. \$150. In 1986 a dealer in the Philippines reportedly was purchasing pairs from local collectors at high volume and for the equivalent of U.S. \$40.

The Corsican swallowtail also has suffered through excessive taking by both local and foreign collectors, who are aware of its rarity. Collecting of the Homerus swallowtail is

difficult in its mountainous habitat, but may be a problem since it does command a high price and there are no effective protective measures in place. In 1984 a female was advertised in the United States for \$2,800 and a male for \$1,575.

C. *Disease or Predation*

Not now known to be immediate problems, but of potential concern in any case of a species reduced to very limited numbers or habitat. As noted above, parasitism may be a threat to *P. hospiton*.

D. *The Inadequacy of Existing Regulatory Mechanisms*

The Homerus swallowtail is not covered by any specific conservation measures. The Corsican swallowtail is protected from direct taking on Corsica under French law, but the Sardinian population is not protected. There are no regulatory measures on either island to prevent habitat destruction, which is the main problem. The Luzon peacock swallowtail and its habitat are completely unprotected. Being on Appendix I of the Convention helps to control international trade in these species, but does not affect environmental disruption or local collecting.

E. *Other Natural or Manmade Factors Affecting its Continued Existence*

None now known. The decision to determine endangered status for the Homerus, Corsican, and Luzon peacock swallowtail butterflies was based on an assessment of the best available scientific information, and of past, present, and probably future threats to these insects. All three have suffered substantial losses in habitat and/or numbers in recent years and are vulnerable to human exploitation and disturbance. If conservation measures are not implemented, further declines are likely to occur, increasing the danger of extinction for these butterflies. Critical habitat is not being determined, as such designation is not applicable to foreign species.

Section 8(a) of the Act authorizes the provision of limited financial assistance for the development and management of programs that the Secretary of the Interior determines to be necessary or useful for the conservation of endangered species in foreign countries. Sections 8(b) and 8(c) of the Act authorize the Secretary to encourage conservation programs for foreign endangered species, and to provide assistance for such programs, in the form of personnel and the training of personnel.

Section 9 of the Act, and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions, and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered wildlife. It also is illegal to possess, sell, deliver, transport, or ship any such wildlife that has been taken in violation of the Act. Certain exceptions apply to agents of the Service and State conservation agencies. Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22. Such permits are available for scientific purposes, to enhance propagation or survival, or for incidental take in connection with otherwise lawful activities. All such permits also must be consistent with the purposes and policies of the Act. In some instances, permits may be issued during a specified period of time to relieve undue economic hardship that would be suffered if such relief were not available.

The complete file for this rule is available for public inspection, by appointment, from 8 a.m. to 4 p.m., Monday through Friday, in room 750, 4401 Fairfax Drive, Arlington, Virginia 22203.

The primary author of this rule is Ronald M. Nowak, Office of Scientific Authority, U.S. Fish and Wildlife Service, Washington, DC 20240 (phone 703-358-1708 or FTS 921-1708).

Editors Note: This is only part of the entire Final Rule. For further information or a copy of the complete text including list of references see a copy of the Federal Register/ Vol. 58, No. 9/ Thursday, January 14 1993/ page 4356, available from Dr. Charles W. Dane, Chief, Office of Scientific Authority; Mail Stop: Arlington Square, room 725; U.S. Fish and Wildlife Service; Washington, D.C. 20240 (phone 703-358-1708 or FTS 921-1708; FAX 703-358-2202).

The Morality of Collecting: Who Cares and Why?

by Arthur M. Shapiro
Center for Population Biology
University of California
Davis, CA 95616

Is it immoral to collect butterflies? Not so long ago such a question would have seemed preposterous on its face to all but a handful of human beings. Today it is an issue of increasing importance and divisiveness within the Lepidopterists' Society and elsewhere, although it still seems preposterous on its face to most people. This is an attempt to outline the underlying philosophical issue in as unthreatening and comprehensible a manner as possible without advocating any particular view. It was triggered by a seminar on my own campus in early February, which made it plain that a great many things were muddled together in the minds of even professional biologists who "should know better." Perhaps an objective treatment is impossible, but let's try.

First, we need to distinguish rhetoric from logic. Rhetoric is the use of language to persuade. The skilful use of rhetoric can obscure underlying logical deficiencies in the arguments being presented, and that is the objective of any advocate who knows the weaknesses in his case. The injunction "let the listener (reader) beware" always applies. For example, an advocate of "animal rights" may tell you that her position represents the historical evolutionary process that has taken us from slavery to concern for self-determination and human rights. 150 years ago only the most enlightened people thought that slavery was immoral, and few Americans who subscribed to the ringing appeals to "inalienable" human rights in the Declaration of Independence thought they applied, at least fully, to blacks, American Indians, or women. The notion that animals have inalienable rights represents the logical progression of a civilizing, consciousness-raising process, and it too began as a position of a tiny minority but will grow to be generally accepted. You as recipient of this argument are entitled to ask where such rights come from and to question whether there is a qualitative or quantitative difference in the rights claimed for humans vs. non-human beings. You have a right to weigh, accept or reject the answers.

Keep in mind that a standard rhetorical ploy, used by advocates on all sides of any dispute, is to trivialize the opposing viewpoint, thereby avoiding having to refute it rigorously. For example, an advocate of collecting may dismiss opponents as "just a bunch of animal-rights nuts." Beware whenever an advocate refers to anything as just so-and-so. What he means is "If I can get you to label the other guy's position and reject it without actually thinking about where he's coming from, I've won."

That said, let's move on to some of the arguments in circulation.

Is conservation inherently "good?" Such a claim can be justified

on at least three grounds: moral, esthetic, and utilitarian (some would say utilitarian is derived from one moral position). The moral argument is discussed at some length below. It can be summarized thus: "Pieris rapae has an inherent right to exist" (a variant is "God made Pieris rapae and we have no right to destroy it"). The esthetic argument runs: "The world is more beautiful because Pieris rapae is in it. Beauty is good, therefore, P. rapae should be preserved." (This of course pushes the question back one step: why do we believe beauty is good? Or even, why do we think P. rapae is beautiful? - Not everyone does.) The utilitarian argument goes like this: "Pieris rapae, although not appreciated today, may have some as yet undiscovered value for mankind: hence it should be preserved," (This is often phrased in terms of potential cancer cures, and indeed the pteridine pigments of Pierid butterflies are already of some interest in that regard.) The utilitarian argument is consequent on humanism, a philosophical position which treats man as the measure of all things. (But it is often used rhetorically on behalf of conservation by people whose true philosophical commitment is to natural rights, which is deeply opposed to humanism. It is so used because most people are unthinking humanists at least on this level, and predisposed to accept it.)

Now to the moral argument:

Nature has an absolute right to exist. Those who make this claim do so on behalf of all natural objects, living or not; or they may restrict it to living objects (organisms) only; or they posit some criterion for applying it selectively to some organisms and not others; or they may apply it to such complex "natural" entities as communities, ecosystems, or landscapes, or (in the case of those advocating the "Gaia Hypothesis," the notion that the entire planet is one living organism) to the Earth in toto.

Directly opposed to a claim of natural rights is a claim that Man has an absolute right to use nature for his own purposes. This is often attributed, by both proponents and opponents to traditional Judeo-Christian attitudes derived from the Old Testament. Again, it may be qualified in various ways.

Whence come such rights in either formulation? The Declaration of Independence, in its Enlightenment humanism, asserts that human rights are "self-evident." But such a claim can only succeed where everyone accepts it. Clearly, not everyone in our society accepts as self-evidently true either that nature has inalienable rights or that we have an inalienable right to use nature. The Declaration proceeds from self-evidence to a specific attribution: human beings are "endowed by their Creator" with certain inalienable rights. Both sides in the nature-vs.-man debate can and do claim that the rights they perceive are bestowed by God. But many people in both camps do not subscribe to specific religions, and a fair number are atheists. Absent derivation from God, there is no defined basis for such absolutes. This is the existentialist's central problem, and we will return to it at the end of this article.

Suppose a claim of natural rights is made, on whatever basis. At what level of organization do such rights inhere? This is a non-trivial question even for human rights. In the political debate over "affirmative action," the "cons" emphasize the priority of decisions based on individual merit and may deny the validity of any claim of rights vested in groups. The "pros" emphasize historic injustice to groups and the need for redress at that level, and may adduce the reality of rights vested in groups. So, does Pieris rapae have a right to exist as a species? Does every individual of Pieris rapae have a right to exist? Or is the cutoff somewhere in between, say at the population level? (Suppose there only one population of P. rapae in Guatemala, or Bozorth County.) If the right is asserted at the individual level, it presumably applies to all individuals of other species as well, which may exist only by killing and eating Pieris rapae (say, the parasitoids Cotesia glomerata and Phryxe vulgaris). How are we to reconcile the

clash of individual rights implicit in every act of predation or parasitism? Some will claim that there is no conflict within nature, but only where taking by man is concerned. They are then obliged to explain why they regard man as outside of nature, or morally unique in this regard.

Suppose the claim is made at the species level. Then problems arise when speciation is not complete, hybridization has occurred, or the taxonomy is confused. Should absolute rights be adduced at a level definable only by highly technical (i.e., genetic) or legalistic (i.e., taxonomic) information? If the claim is made at the population level, are all populations equally privileged, or is there a criterion for weighing privilege or right? That leads us to our next conundrum.

If some organisms have a stronger claim on the right to exist than do others, what criterion is to be used to differentiate among them? Some advance claims based on "evolutionary advancement", "biological complexity", development of consciousness or sentience or intelligence, all of which echo the historic notion of the "Great Chain of Being" and its offspring, that of evolutionary progress. The ultimate criterion, then, boils down to similarity to man (or to God, in whose image man is made). Thus a weak form of the natural rights claim reduces to humanism! Many commentators have noted the special properties of so-called "charismatic species", which are highly valued for esthetic reasons, as well as the (otherwise) arbitrary exclusion from protected status of organisms perceived as pests, pathogens, or disease vectors. Thus there is a role for utilitarian criteria as well in limiting the scope of "natural rights."

A specific criterion for protection is degree of perceived threat. That is whether or not an underlying right to exist is claimed, those organisms with the highest claim to protection are in greatest peril of extinction. This is the rationale for the Endangered Species Act in the USA, which pro-rates different organisms for protection based on both taxonomic group and perceived scarcity. Natural rights cannot be so prorated, but if resources are required to implement conservation and such resources are in short supply, one may argue that such resource allocation may be pro-rated even if there is an assumption of underlying rights. The law, however, makes no such assumption.

If collecting organisms is not absolutely prohibited on moral grounds, what if any restrictions should obtain? If preservation of endangered species or populations is the objective of regulation, there is no need to protect Pieris rapae, but there may be for Apodemia mormo langei. Consider the hypothetical single population of P. rapae in Bozorth County. Since the borders of Bozorth County are historical artifacts with little or no biological meaning, is it legitimate to conserve P. rapae because it is local and rare within an arbitrary political unit? On what basis?

Is the reason or motive for collecting important, or even relevant? Is collecting for a "scientific" objective more justifiable than collecting for personal fulfillment (hobby)? If so, why? Some claim that scientific knowledge, once published, becomes the property of all mankind and thus has a higher claim against nature than the proprietary interest of a single individual. But this is imposing a retrospective criterion, insofar as science is not recognized as such until it is published. Suppose a permit is required to collect Pieris rapae. The "scientific" applicant cannot show that her objectives are any more "scientific" than those of the amateur, because only the act of publishing in a scientific journal can validate that claim. The permit-issuing agency may choose to make a prior assumption based on, say, institutional affiliation or the reputation of the applicant. But some amateurs ("hobbyists") have made and continue to make superb

contributions to science, and some professionals have made at best trivial, insignificant, redundant or grossly wrongheaded contributions, or have failed to publish at all. Moreover, the claim of a qualitative difference between science and hobby requires justification. Despite popular mythology, and the views of some naive philosophers, scientists rarely "do science" for altruistic motives. For most scientists, research is an art form, a source of self-fulfillment or "psychic income." It happens that their hobby, research, happens to have implications beyond their personal aims. But is this a valid basis to draw a moral distinction? There is an implication of utilitarian criteria here, yet - as we have seen - the assumption of utilitarian value may not be justified.

What about collecting for sale? Here again, morality may be associated by some with motive. In many traditional societies natural rights are acknowledged, but the right of human beings to exist by eating other organisms is also granted. The contradiction is dealt with by allowing the hunter or gatherer to acknowledge the rights of his quarry and apologize sincerely to it for his need to kill and consume it in order to live. Is collecting for sale to others more moral if it is the collector's sole source of income (i.e., used for necessities) than if it allows him to buy a BMW? If so, why?

Another potential criterion for limiting collecting is potential impact of species extinctions on multispecies systems (communities, ecosystems, the biosphere). It may be argued that loss of a single species may trigger a cascade of catastrophes leading to large-scale ecological collapse. If we can posit a plausible mechanism for such a collapse we may be able to persuade others of the riskiness involved. But if we cannot, dare we take the risk? this is somewhat analogous to a utilitarian argument, but usually derivative from a natural-rights perspective.

The diagram (fig. 1) shows just some of the ways these issues are interconnected in our thinking and decision-making.

I want to close by observing that both the natural rights and humanistic claims are fundamentally and inescapably ideological. That is to say, they are not derived by argument from other propositions, but serve as the bedrock on which systems of propositions are erected. They cannot be tested, proved, or falsified. Where do they come from? Perhaps from a God; perhaps from the individual's unique history of genetic endowments, psychological development, upbringing and socialization; perhaps from both. In any case, it is misleading to claim that conservation is mandated by scientific knowledge. No scientific knowledge can mandate moral choices. At best, it can inform them. but the criteria for choosing one moral position over another are ideological, not "objective," as science claims (questionably) to be.

In my experience, this is clearly understood and admitted by "deep ecologists", such as Earth Firsters, who in general subscribe to a strong version of the natural rights argument. On the other hand, conservation biologists - academic professionals - rarely will admit it. They have been socialized in a positivist environment, in which "scientific objectivity" has been raised to the cardinal virtue, and they want desperately to believe that their underlying ideology is scientifically mandated (or at least validated). That has a bearing on their rhetoric, but is irrelevant to the question of whether or not conservation is good.

Well, I did manage to give a sermon after all. But notice that I never did tell you whether or not it is immoral to collect butterflies. (Hint: I still have my net.)

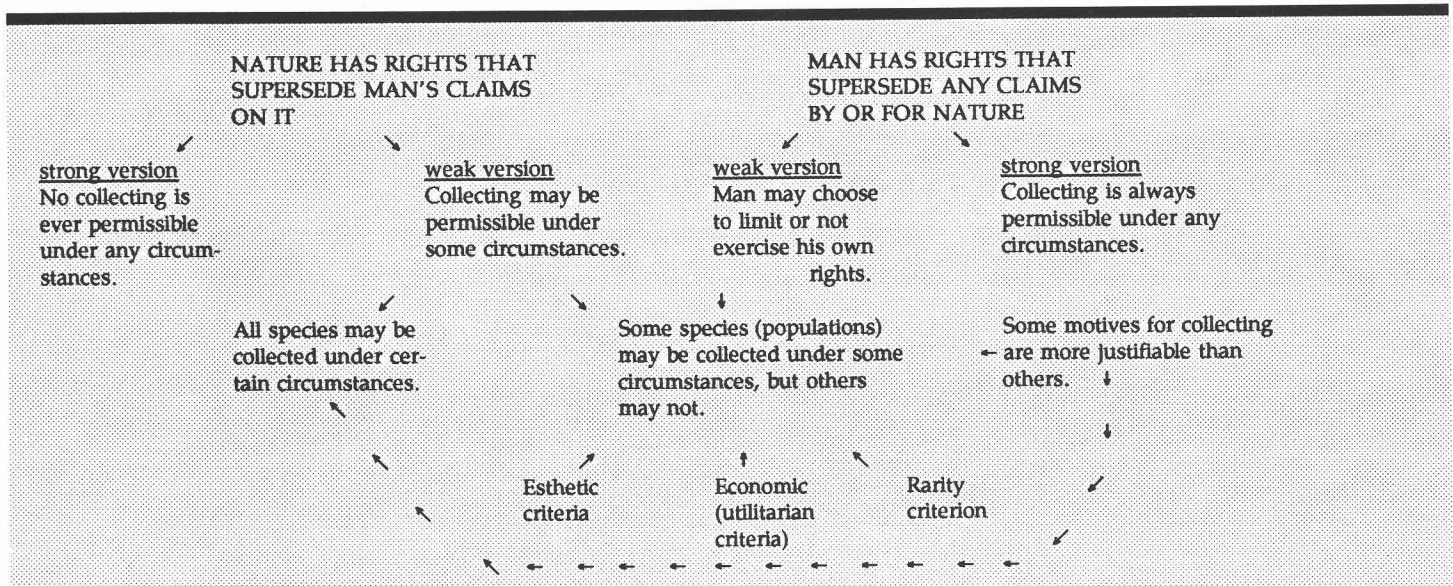
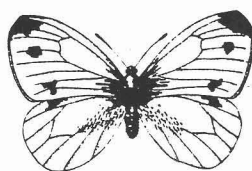


Fig.1. Some interconnections among arguments used in debates over the morality of collecting.



The Xerces Society's 4th of July Butterfly Count, 1992 and information about joining/starting your own Xerces/NABA count.

by Ann Swengel, National Count Co-Editor
and NABA Treasurer
909 Birch Street, Baraboo, WI 53913

The 18th annual 4th of July Butterfly Count, sponsored by the Xerces Society, was held in the summer of 1992. Volunteer participants conducted a one-day census of all butterflies observed at sites within the count area, a 15-mile diameter circle. Most counts were held in late June and July.

The 185 4th of July butterfly counts held in 1992 represent a considerable increase from the 1991 total of 149 and 124 in 1990. This year's counts included 50 first-year counts (39 in 1991 and 22 in 1990). The 1992 counts occurred in 39 states (five more than last year) and 4 Canadian provinces (one more than last year), as well as one state in Mexico (none last year). California and Wisconsin tied for the state with the most counts (15). Four counts (Berkeley, California; Gilpin County, Colorado; High Line Canal, Colorado; Lower Pearl River, Louisiana/Mississippi) have been held for all 18 years of the count program. The number of people participating in each count adds up to 1,297, although some people are tallied more than once, since they participated in two or more counts.

Three counts surpassed the previous all-time high for species diversity of adult butterflies on a single count in North America north of Mexico. The previous record was 97, achieved by both the Gilpin County (lower circle), CO count in 1981 and the Ramsey Canyon, AZ count in 1991. The new record is 102, achieved by the Patagonia, AZ count, followed by 101 (Gilpin County lower circle, CO) and 98 (Atascosa Highlands, AZ). In Mexico, the Puerta Vallarta count beat the previous record it set (115 species in 1990) with an amazing 169 this year. By counting a mind-boggling total of 16,994 adult butterfly individuals, the Klamath Falls, OR count demolished the previous record total of 10,475 individuals on the Ramsey Canyon, AZ count in 1987.

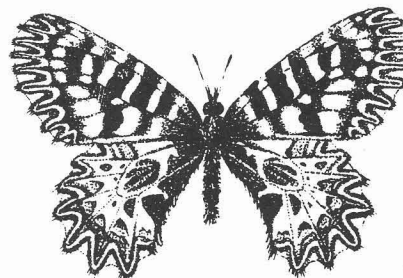
The counts this year clearly reflected the lower numbers of "Mexican" monarchs (*Danaus plexippus*) (the population of Monarchs breeding east of the Rocky Mountains during summer and wintering in Mexico) compared to last year, as measured by monarchs per party-hour of counting effort. The average monarchs per party-hour for counts within the breeding area of Mexican monarchs declined about 75%, but still remained about three times higher than the average in 1988, which was about as hot and dry a summer as 1992 was cool and gray. The 1992 results fall within the range of average for all years since 1980. Since the 1991 counts produced the highest levels of Mexican monarchs ever recorded by the count program, the decline from 1991 to 1992 was quite obvious, but we should remember when making comparisons that 1991 was at least as good a year for Monarchs as 1992 was poor. Butterfly counters around the country should be proud that their effort is being used to monitor the ups and downs of the Mexican Monarchs, as reported in the October 13, 1992 *New York Times*.

For the second year in row, the painted lady *Vanessa cardui* was widespread and abundant throughout the continent. In 1991, 94 of 149 counts (63%) reported this species compared to 139 of 185 counts in 1992 (75%). The 1991 counts averaged 28.9 painted ladies per count; in 1992 the average was 27.3. By contrast, in the years 1987-1989, the percentage of counts reporting this species varied from 27-32% and the average individuals per count ranged from 1.4 to 2.1.

Join/Start your own count

No matter how much or how little butterfly watching you've done, the

results of butterfly counting can be surprising and interesting. If a count already exists in your area, please join them for a day of fascinating butterfly counting. If there is no count in your area, you may start your own if you know how to identify the butterflies. Otherwise, inspire a nature center or butterfly club to start one for you! Last summer, the Xerces Society and the newly formed North American Butterfly Association (NABA) agreed to transfer administration of the 4th of July Butterfly Counts to NABA in 1993. For more information on NABA, the count program, counts in your area, and how to conduct a count, contact Ms. Swengel.



News from Europe

by Willy De Prins
Antwerpen, Belgium

Every European country has its national natural history museum in which the most important collections of natural objects (i.e. Lepidoptera) are kept. In many countries there are other regional museums and universities that house such collections. Furthermore, there are numerous private collections that are usually of only local faunistic interest or limited to a small taxonomic group. Occasionally such private collections are of great interest to students of faunistics or systematics as they contain quite important series of well labelled specimens originating from a vast geographical region. Only in very rare cases can these collections become as large as true museum collections. One example of such a collection is the Entomological Museum of Dr. U. Eitschberger (Germany) on which J.A. Hyatt reports hereunder.

A Visit to the "Entomologisches Museum Dr. Ulf Eitschberger"

by John A. Hyatt
439 Forest Hills Drive, Kinsport, Tennessee 37663

In July 1992 I had an opportunity to visit one of the most extensive Lepidoptera research collections in private hands, and would like to share some information about the collection and collector with members of the Lepidopterists' Society.

Dr. Eitschberger resides in the small town of Marktleuthen in rural Germany near Bayreuth. A life member of the Lep. Soc., he serves as the editor of the journal *Atalanta* (which now publishes significant amounts of systematics research as well as papers in its traditional area of Lepidoptera migration) and the monograph series *Neue Entomologische Nachrichten* and *Herbipoliana*; he is also editing the systematics part of the ongoing *Butterflies of Europe*.

The collection is housed in a 12-bay compactor in a specially-designed section of his residence, and there are professional facilities for photography, dissection, etc. as well as for curatorial work. Although in the days I was there I could not begin to

examine all of the material, I can make some valid generalizations: The collection comprises on the order of 700,000 specimens (Dr. Eitschberger has collected widely in Europe and North Africa, and his personal collection has been augmented by purchase or donation of at least a dozen other significant private collections). The material is about equally divided between butterflies and moths; probably 90% of the specimens are from the palearctic region and there are perhaps 20,000 - 30,000 North American specimens. Areas of particularly heavy representation include Pieridae, Satyridae, Lycaenidae, Noctuidae and Sphingidae. There is much old material from eastern Europe, Asia Minor, and central Asia, and significant sections of recent central Asian and north African material. Particularly impressive were the long series of Turkish, Iraqi, and Iranian Lycaenidae, the excellent central Asian and Chinese *Colias*, and the series of Asian Parnassians recently collected by Russian workers.

Dr. Eitschberger's museum now includes the collections of Dr. F. J. Gross (with many types of *Pseudochazara* and other Satyridae), Dr. R. Roesler (which includes some microlepidoptera types as well as the types of some Riodinidae), H. Pfister (with a number of Arctiid types), and R. Loerbauer (which includes many Noctuidae and Geometridae type specimens). More recently obtained was the F. Eichler collection of Sphingidae (including much old type material and a lot of hybrids) and microlepidoptera. Also present in Marktleuthen are eight other smaller collections and many drawers of P. Lorkovic's bred *Pieris*. There are probably several thousand types and paratypes in the entire collection (long paratype series are present for a number of taxons).

Equally impressive as the collection, is Dr. Eitschberger's research library: A number of private entomological libraries have been acquired, and the several thousand volumes present include such ancient rarities as original editions of Cramer, Heubner, etc. (some of whose hand-painted figures must be considered type specimens!), and scores of more recent but difficultly accessible works such as those of Verity, Seitz, etc. The library is kept up to date by acquisition of the current literature.

As one might expect, curation of such a large collection by one individual who is also involved in publication and research is a problem. Some of the recently acquired collections await incorporation into the whole, and curation seemed complete only through the Papilionidae and Pieridae. But Dr. Eitschberger has hired a part-time preparator to work on the large volume of papered material present, and progress is being made. Currently active research projects include ongoing work on the Pieridae, scanning electron microscopic study of Papilionid egg morphology, and work on Sphingidae systematics.

The "Entomologisches Museum Dr. Ulf Eitschberger" is available for the use of serious researchers; the guest book I examined showed that a large number of European and Asian researchers make regular visits to Marktleuthen. Dr. Eitschberger and his family are very generous and gracious hosts and I recommend that workers who need access to a nearly unmatched library and collection of Palearctic Lepidoptera consider a trip to Marktleuthen. The address is Humboldtstrasse 13A, D 8688 Marktleuthen, Germany.

Wing Tips

by Charles V. Covell, Jr.
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Louisville, KY 40292-0001 USA

In a recent telephone conversation, the NEWS Editor, Stephanie McKown, asked me for ideas to make the NEWS more useful and enjoyable for you. I had once done a column called "The Spreading Board", with miscellaneous technique items and other tips, but it was discontinued. Now that our readers represent much more diverse

interests in Lepidoptera (watching, gardening, photography, art, philately, etc., as well as collecting, taxonomy and biology) I thought the above title would be more a'propos. So here we go, with a column designed to give you "short takes" (and some not so short) on all sorts of hints to make lepidoptering more satisfying.

Here are some ideas for subjects we might include: variations on home-made nets, spreading boards, storage boxes and cabinets, labels, tools, collection arrangements, baits, lights, traps, relaxers, fumigants and museum pest control, field notes, computer programs, shipment of specimens, camera rigs, film processing, video making, sketching and painting Lepidoptera, field trip planning, butterfly flower and foodplant gardening, awareness programs, education uses, making greeting cards, starting a collection of butterfly stamps, etc.

Also.... on the subject of techniques.... the Society plans to publish two books on techniques - a beginner's book first, and later an advanced techniques manual. Dr. Dave Winter is already preparing the elementary book. Organization of the advanced manual is still proceeding. Good technique items submitted for this column could also be included in the techniques manuals, with credits for the contributors.

For this feature to succeed, I need your participation. Each person develops special equipment and techniques all his or her own, and these are worth sharing with your colleagues. Please write up a brief description, and perhaps include pictures where appropriate. I will work them into the column as space permits. Let me hear from you soon!

Here are a couple of initial "wing tips";



NET REPAIR:

When in the field, it is very annoying to have my net snag and rip on a barbed-wire fence or strong thorn. When it happens at the tip, I have tied a knot for temporary remedy; however, tears along the side cannot be repaired this way. One idea is to wrap several inches of adhesive tape around the net pole so it can be used for repairs. Other kinds of tape can be used as well, but a flexible and properly sticky type seems best. Stephanie suggests carrying a small sewing kit, such as those found in motels as "freebies", or one made by putting strong thread and a needle and a few small safety pins in a plastic film capsule, a Sucrets tin, or headache remedy bottle. I guess the best advice is to have along an extra net bag, although this is sometimes not practical when you want to travel light.



LABEL ATTACHING DEVICES:

Pinned specimens need to have data labels attached. For doing this, I have used the "3-step pinning blocks" sold by Ward's, BioQuip, and other companies. Watkins and Doncaster in Britain make one of aluminum which is very hardy. But one can make these in various forms for one's self. Once I drilled a hole in the edge of a work table with the finest bit in my electric drill, and used that, estimating the height on the pin where the label should be. Stephanie reminded me of another trick, which I use as well. When I was in Arizona several years ago, I was given a section of dried *Agave* flowerstalk, which I cut into sections about 3 inches long. The diameter of the section was also about 3 inches. The pithy center makes an ideal material for pushing in pins for labelling or temporary holding of the specimen.

Any further ideas from you?



A Very Good Rearing Flask

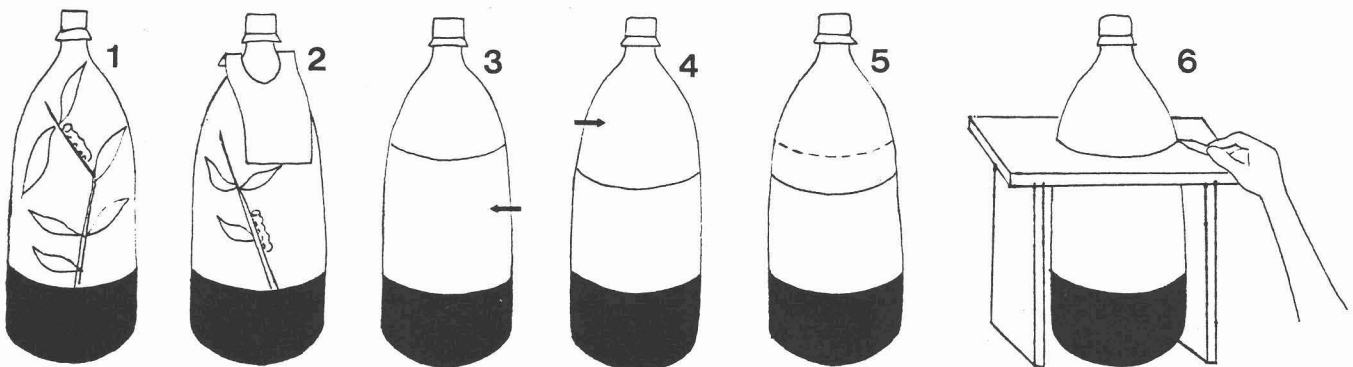
by Annette Aiello & Ricardo Cortez
Smithsonian Tropical Research Institute,
Box 2072 Balboa, Ancon, Republic of Panama

A very good and very inexpensive rearing flask (Figure 1), can be made from clear, 2-liter (½-gallon), polyethylene soda bottles. One bottle is trimmed to make the main section, which holds the larva and its food plant. The other bottle is cut to provide a tight-fitting cover. The flask is suitable for medium to large larvae, or for aggregations of smaller larvae.

The rearing flask has a number of advantages. It is easy to open and close, its contents are clearly visible, and because it has a rounded floor, it is easy to clean. Larvae behave more naturally in these flasks than in cages, petri dishes, or bags, and butterfly larvae tend to rest and to pupate on their food plant instead of on the container. In addition, it is easy to remove the food plant and larva for photography without overly disrupting the larva. Larval food plants and support-sticks can be kept upright by cutting them long enough to reach into the narrow portion of the flask cover. A square of paper towel pressed into the curve of the flask floor catches fecula and other debris, and helps regulate moisture. To increase humidity, the floor paper can be moistened, or wet paper can be stuffed into the cap. Plants set in small vials of water, with paper towel stoppers, remain very fresh in the flask. Data can be written on a paper label slipped over the cap (Figure 2), or recorded directly on the flask with a China Marker, which wipes off easily with dry paper towel.

The rearing flask works especially well if the bottle that provides the main section is cut to a height of 20.5 cm (8") (Figure 3), and the bottle that provides the cover is cut at a height of 17 cm (6.75") (Figure 4). Thus cut, the flask and its cover will overlap (Figure 5) by approximately 2.5 cm (1"), providing a good moisture-retaining seal. To obtain the best seal, loosen the cap, press down on the cover, then re-tighten the cap. Even if well-sealed though, the flask will open easily, so, when in use, it is important not to lift it by its cover.

Attention to the following suggestions will help ensure good results when marking and cutting bottles.



Figs. 1-6. Rearing flask use and preparation: 1, Rearing flask, closed, with plant and larva inside; 2, Rearing flask with paper label over cap; 3, Bottle marked at a height of 20.5 cm in preparation for cutting a rearing flask bottom (arrow); 4, Bottle marked at a height of 17 cm in preparation for cutting a rearing flask top (arrow); 5, Detail showing top in place, overlapping bottom of flask; 6, Bottle in place in jig, before marking a rearing flask bottom.

1. Use only undented bottles.
2. When marking bottles for cutting, use a fine-tipped marker with ink that can be removed later with alcohol. Sharpie brand markers work well.
3. Devise a support to maintain the marker at the desired height during marking.

A. While it is possible to mark bottles by rotating them against a stationary marker, more accuracy can be attained with a jig (Figure 6) that allows you to move the marker instead of the bottle. Why? Because most bottles are not centered accurately in the cup-shaped bases that support them and, therefore, are not precisely upright. They rotate in a wobbly manner.

B. If you decide to construct a jig, regardless of the design you choose, make it 20.5 cm (8") high, minus half the thickness of the marker you are going to use. That way, when you mark a bottle for a flask bottom, the marker point will touch it at a height of exactly 20.5 cm (8"). You can mark a bottle for a flask top in the same jig by raising the bottle with a spacer 3 cm (1.25") thick.

4. Use sturdy shears of medium length to cut the bottles. Long shears won't fit within the curve of the bottle. Short scissors are not very accurate. Kitchen shears work very well.
5. In preparation for cutting, use a sharp object, such as an ice pick or a pair of nail scissors, to pierce the portion of the bottle that will not be used. Insert the shears into the hole and make a rough cut all the way around the bottle before cutting on the line.

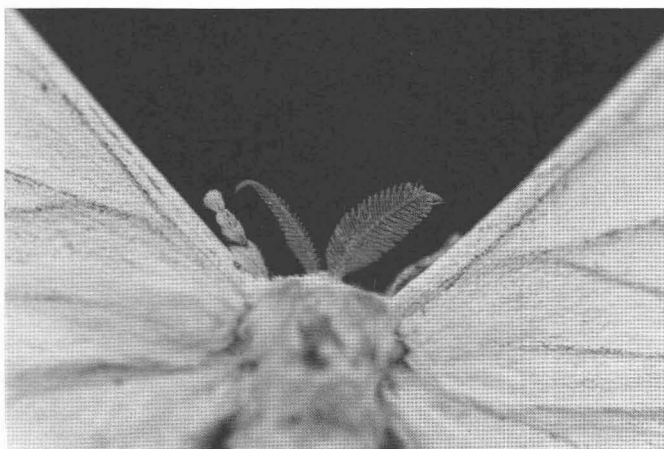
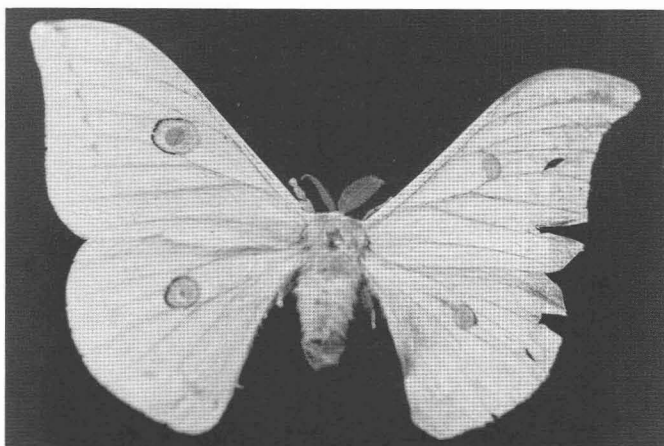
Unused tops of bottles can be used as funnels, and it's a good idea to keep a few extra caps as spare parts. Unused bottoms can be cut to appropriate heights for a variety of uses, e.g., planters; containers for soaking and cleaning paint and varnish brushes; cups for mixing epoxy resin; receptacles for small objects, such as paper clips, rubber bands, or small hardware. The rearing flasks themselves also make good containers for spaghetti and soda straws.

Many thanks to Arcadio Rodaniche for drawing the figures, Vielka E. Vergel and Angel Aguirre for technical assistance, and to Astrid Caldas, Donald Windsor, Dave Winter and an anonymous reviewer for helpful suggestions.

A bilateral gynandromorph of Antheraea brunei

by G. Ping
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I regularly run a mercury vapor light against a white wall outside my house which is on the edge of about two miles of mangrove swamp. A frequent visitor, though in small numbers, is Antheraea brunei. On 5 July 1992 I made the capture of a lifetime, a bilateral gynandromorph of this species (photos below). The specimen has been donated to the Natural History Museum in London.



Observations of Vanessa atalanta

by Laurent Schwartz
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It is well known that many butterflies, and particularly many Nymphalidae, have a small territory where they return time and time again. But the case I will discuss here, is really unusually strong! Every mid-July since 1977, I travel to the village of Saint Bonnet in Chanpsaur in the Southern Alps. This area is at an elevation of 1000 meters. Years ago there were many many butterflies to be seen, but as in many areas of France, over the past twenty or twenty-five years, they have mostly disappeared. The Nymphalid *Vanessa atalanta* was common everywhere in France, and Saint Bonnet was no exception. But for many many years, I've not seen it except one every year if I go walking on a certain road. This particular road is bordered by nettles (foodplant of the larva), surrounded by big trees, rather sunny in many places and is frequented by cows and horses. There is an ideal place at the summit of the road for *atalanta* to remain on the soil, opening its wings to capture the sunlight.

The first time I went to Saint Bonnet was in 1977. At this place, during the fifteen days I was there, I consistently observed one *Vanessa atalanta*, between the hours of 6 p.m. and 8 p.m.. This constancy did not amaze me too much. However, in the following years, returning to the same locality at the same time of year...I always saw one *V. atalanta* in the same position. For thirteen years this continued (from 1977 to 1989). The years 1990 and 1991 were very cold and rainy, and there was no possibility for any butterfly there. But again, in 1992, the weather was splendid, and I went to the same place anxious to see if *Vanessa atalanta* would be there or not. And it was!! Thus, during sixteen years (with two exceptions caused by bad weather) I observed *V. atalanta* at Saint Bonnet at the exact same spot....quiet and motionless.

Last year, a second *atalanta* came. Both of them were males. The first one was very aggressive, attacked the second one and drew it away. Immediately afterwards, it came back to the same favorite spot. It has been troubled several times by cars or by people passing through, and it went away for approximately one minute, and then returned. I say "it" as if it were the same *atalanta* for all those years! Of course, it's absolutely impossible. However... ecologically, this place was so adapted to them that the same phenomenon always occurred. Moreover, there were some times one or two *Vanessa cardui*, or *urticae* or *io* would also appear. The *atalanta* and the others did not disturb each other. It is evidently a good spot for Nymphalidae.

I am looking forward to seeing one again every year in the future!

A Hairstreak Experience

by Jack Holliday
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Ottawa, Ontario K1Y 0E9, CANADA

The Scene...

In eastern Ontario the summer of 1992 was cooler and wetter than normal; 6¼ inches of rain fell in July and 2 inches fell the first weekend of August. Some butterflies were very conspicuous by their absence....there were very few common sulfurs for example....I saw only one Monarch (4 July). All butterfly flight dates seemed about 3 weeks later than normal.

The story begins...

On the 2nd of August I was at a cottage in the Tweed, Ontario area, about 30 miles north of Lake Ontario. At about 11 am the showers let up and the sun shone intermittently through the low cloud ceiling. I walked a gravel road to see what was "a-wing" (if anything) and was pleasantly surprised to find the Pearly Eye (Lethe anthedon) and Wood Nymphs (Cercyonis pegala) flying through the shrubbery, the Dun Skipper (Euphyes ruricola) in the grasses alongside the road, and Speyeria cybele, Basilarchia arthemis, Celastrina ladon, and Polygonia progne on the wing.

One open area had three milkweed plants in bloom so I approached them to see if there were any hairstreaks nectaring on the flowers. One plant had 2 hairstreaks, the second had one, and the third had the remains of 2 dead...apparently drained by a flower spider. I mentally registered them as Striped Hairstreaks (Satyrium liparops) and continued my walk watching for leaves illuminated by the sun, where liparops males frequently perch.

The plot thickens...

Not far, I soon saw a hairstreak perched, as expected, on a leaf of basswood. Not expected was a pair, en copula, on the adjoining leaf! "Very strange," I thought, since male liparops are usually very aggressive toward other males.

Next, I noticed that the basswood was in full bloom and other hairstreaks were nectaring on the blossoms. I stepped back and examined the tree. I noted that it was a young tree with widespread branches, competing with a wall of other trees alongside the roadway. It was in full bloom. Every twig supported a clump of fragrant flowers, and every clump of flowers was visited by hairstreaks....hundreds of them! Never before having encountered such a gathering of butterflies, I hurried back to the cottage for my camera.

Attempting to photograph the congregation...

Back at the tree, my brother-in law (Wes Newman) and I discovered that although there was a myriad of hairstreaks on the basswood, photographing them proved difficult. If the camera was focused close enough to identify a butterfly, then only one or two could be included in the picture. When I backed off to get a larger view, the butterflies were reduced in size to insignificance! Trying to get an overall picture of the tree was impossible, because any resulting photo would show the butterflies as mere specks. Finally I tried focusing on the sky above, with a portion of a branch in the lower corner. At a spoken signal, Wes pulled on a connecting branch and I opened the shutter on the resulting cloud of rapidly scattering butterflies. (See top photo next column) The camera covered only a fraction of the area which was filled with thousands of hairstreaks. My guess is over 3,000.

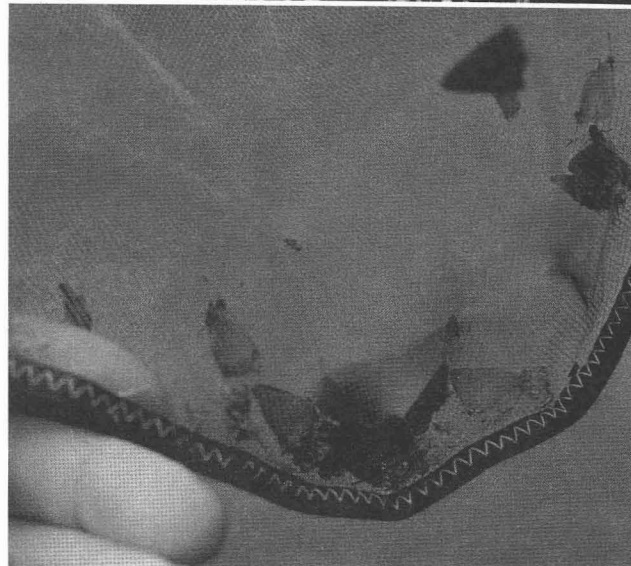
Wes went for his camcorder but experienced the same problem. The butterflies were so small in the overall view, they were not very visible....up close, one could photograph only 2 or 3.

After several photos, I shook a lower branch and swiped with my net. Twenty-nine in the net...some in good shape, but most worn, some very worn. Imagine! One swipe...29 hairstreaks! The lower photo shows part of the 29!

I looked for other Basswood trees in bloom, but although there are many in the area they all seemed to have bloomed weeks earlier and the round nut-like fruit had already formed.

Post-collecting trip discussion...

On my return to Ottawa I discussed the phenomenon with Peter Hall. He immediately asked if there were any hickory or butternut trees in the vicinity. When I confirmed that both were common there, Peter suggested that rather than the Striped Hairstreak (Satyrium liparops), what I had encountered was an abundance of Hickory Hairstreaks,



(Satyrium caryaevorus) which are known to occur in large numbers in favorable circumstances. With thousands of specimens available... naturally, I had saved nary a one!

Film to the Rescue...

The first roll of film was developed successfully and showed the butterfly quite clearly...and it was indeed S. caryaevorus!!

One can deduce that due to the delayed season, S. caryaevorus, (usually flying the first week of July) had emerged weeks later than normal.

The lone basswood tree, in bloom, had attracted large numbers of nectar-seeking butterflies. The cool rainy weather had convinced the butterflies to remain where there was plenty of food and where the tree-top would intercept any sunbeams escaping from the cloud cover (there were many more of the hairstreaks at the top of the tree than at the bottom).

Then again this might be a common occurrence, but like most insect activities, uncomprehended by mankind...if noticed at all. Perhaps such a large gathering could produce a dense emission of pheromones which, in turn, might attract more individuals.

Perhaps when searching for hairstreaks we should be searching the basswood trees instead of the lowly milkweed? Certainly I've noticed other hairstreaks on basswood flowers...but usually high overhead...and I never thought to shake the branches to ascertain if there were more butterflies, inconspicuous amidst the flowers.

Plan of action for 1993...

This year when the basswoods are in bloom, I'll shake a few and try to net any hairstreaks. Perhaps there are other species attracted to the sweet nectar.

A Visual Aid to the Incisalia irus Discussion

by John V. Calhoun
1731 San Mateo Drive
Dunedin, Florida 34698

Ronald R. Gatrell outlined the interesting phenotypic and biological differences between Incisalia irus populations (Lepid. Soc. NEWS July/August 1991). Dale F. Schweitzer amended Gatrell's hostplant diagnosis by providing additional hostplant data for New England populations (Lepid. Soc. NEWS July/August 1992). Both authors discussed at length the confusing variation between Baptisia feeding and Lupinus feeding populations in the eastern United States.

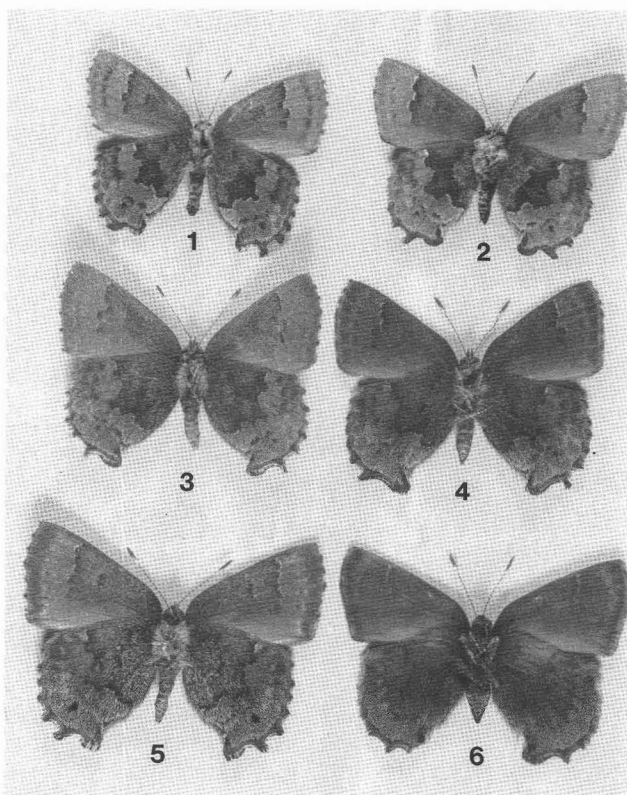
I have had personal experience with populations of irus in southern Michigan, northern Ohio and Florida. These populations exist at the northern and southern extremes of the range of irus and utilize Lupinus perennis as a hostplant. It should be mentioned that although irus feeds on Lupinus perennis in northwestern Ohio, irus has also been recorded in southwestern Ohio (in the vicinity of Cincinnati) where Lupinus does not occur. Although irus is believed to be extirpated from this region of Ohio, this population probably fed on Baptisia. Unfortunately, there is insufficient material from southwestern Ohio for comparative studies with known Lupinus feeding populations in northern Ohio.

Gatrell remarked that the Lupinus feeding populations of irus are not phenotypically consistent. Populations from Rhode Island north and westward to Michigan are "of a smaller size and brighter, more contrasting below" and that "in this cline, the Michigan populations are the most distinct." He suggested that the populations in this region may warrant subspecific status. The recently discovered Florida population was considered by Gatrell to be phenotypically comparable to some populations from much further north (e.g. New Jersey), rather than those of the southeastern subspecies I. i. arsace. Schweitzer (Ohio Lepidopterist 14(2) 1992) oversimplified the situation, stating that Lupinus feeding populations are "uniform in appearance rangewide and even Florida specimens apparently look just like northern ones." This statement is misleading and does not take into account the small Lupinus feeding phenotype in the Great Lakes region.

To help clarify this discussion, I have included a photograph which

illustrates the great phenotypic differences within the range of irus. Few lepidopterists have had the opportunity to examine Floridian irus and this phenotype is herein figured for the first time. As noted by Gatrell, the small and well marked Ohio and Rhode Island phenotypes (1-2) are very similar to one another; the three-toned ventral hindwings are quite distinctive and reminiscent of I. henrici (possibly contributing to the historical confusion between these species). The larger and darker Florida phenotype (4) is more comparable to the New Jersey phenotype (3) than to the specimen of I. i. arsace from South Carolina (5) (arsace is larger and possesses more ventral grey overscaling than Florida specimens I have examined). The specimen of the drab subspecies I. i. hadros is the most distinctive and is easily separated from the other phenotypes. Despite these perceived differences, I agree with Gatrell and Schweitzer that much research is required before this variation can be clarified and any conclusions can be drawn regarding the existence of additional subspecies or even sibling species of I. irus.

Ron Gatrell generously provided several specimens for the figures.



Figs. 1-6, I. irus. 1. Lucas Co., OH, 19-v-84; 2. Kent Co., RI, 15-v-90; 3. Ocean Co., NJ, 15-v-78; 4. Clay Co., FL, 29-ii-92; 5. Berkeley Co., SC, 2-iv-91; 6. Grant Co., AR, ex-larva emerged 17-ii-76.



Metamorphosis

The Society has recently been informed of the following members' deaths:

Jan K. Krepa...

of Albany, New York. Krepa had been a member of the Lepidopterists' Society from 1967 through 1990.

Thomas W. Davies..

of San Leandro, California died on 19 August 1990. He was a Charter Member of the Society.

Stanley G. Jewett, Jr....

on 1 September 1991. Stan was born in Portland, Oregon. He was an ardent naturalist all his life with interests that included not only the Lepidoptera but other branches of entomology, mammals, birds and native plants. The collection of birds and mammals which he accumulated during his tour of duty in New Guinea are now in the Field Museum of Natural History in Chicago. He became a world authority on aquatic insects known as stoneflies and wrote many monographs on this group from the Pacific Northwest, Central and South America and the Himalayas. He had been a long time member of the Lepidopterists' Society. He accumulated one of the largest collections of butterflies and moths, most of which are now deposited in the Oregon State University Museum in Corvallis, Oregon and the Allyn Museum in Gainesville, Florida. Stan was also the author of two newly described races of a Checkerspot butterfly, *Euphydryas anicia*, and in 1989 he became the first recipient of the Ernst J. Dornfeld Award, presented by the NW Lepidopterists' Association for outstanding contributions in this field. He is survived by his wife Doris, his three children, Stan, Nora, and Meredith and his sister, Leslie Smith.

Herman G. Real...

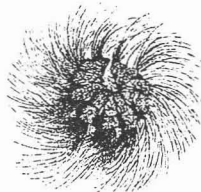
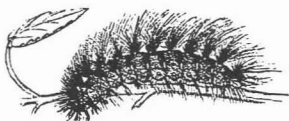
of Menlo Park, California died on 15 October 1991. Mr. Real was a member from 1971 through 1990.

Ruth Helen Delano Grey...

wife of lepidopterist L. Paul Grey, died on 30 Oct 1992 after a brief illness, at age 82, in Lincoln, Maine, where she was born and lived most of her life. She is survived by Paul, husband of 58 years, and several children, grandchildren and great-grandchildren. Many of us will remember her fondly as a stimulating guest in our homes and down-home gracious hostess in hers, and realize that she helped Paul in his work in more ways than can be enumerated. His grief is shared by scores of colleagues and friends.

Dr. Harold H. Shepard...

of Alexandria, Virginia on 3 January 1993 at the age of 94. Although he was not a member of the Society, he actively worked with butterflies before World War II. From 1931 to 1939, he wrote 6 parts of the Hesperidae (Pyrginae and Hesperinae) section in *Lepidopterorum Catalogus*. With Ralph W. Macy, he authored the book, *Butterflies*, published in 1941 by University of Minnesota Press, which covered the butterflies of the northeastern United States (east of the Dakotas) and adjoining areas of Canada. Although he taught briefly at the University of Minnesota and at Cornell University, he was employed for much of his life by the USDA as an entomologist.



Announcements and Notices



Editor Uses DOS

The Editor of the NEWS appreciates articles and submissions that arrive typed, double spaced, and accompanied by any DOS format diskette. Articles in this format require less time and expense to incorporate into the NEWS.

WANTED

Anecdotes about, and clear photos of your favorite lepidopterists in action. Send to the Editor.

Japanese Moth Collection Lands in London

from NATURE 8 Oct 1992

The Natural History Museum in London has taken delivery of 200,000 moth specimens in a bequest from the Japanese entomologist Hiroshi Inoue. The collection, which includes more than 500 holotype specimens, is the result of nearly half a century of field work in Japan, Taiwan and Nepal. Inoue wanted the collection moved before his death from its present home in Otsuma Women's University, Saitama Prefecture, so that he could continue to work on it in collaboration with museum entomologists. Malcolm Scoble, of the museum, says that the collection is an outstanding scientific resource, documenting sites that no longer exist in pristine condition. A trust fund is planned to allow young Japanese researchers to study at the museum.

National Museum of Natural History in Malta needs North American Lepidoptera.

The insect collections of the National Museum of Natural History in Malta contain only a very small representation of the lepidopterous fauna of North America (donated by Paul Sammut). Many lepidopterists may have specimens that are not desirable for the personal collection or suitable for trade. Any papered material, no matter the condition, as long as it has collecting data would be of great utility to the Museum. Postage and packing expenses could be refunded. Please send the specimens to the National Museum of Natural History, Vilhena Palace, Mdina, MALTA. or contact Paul Sammut at the same address.

Do you have butterfly records from Oregon or Washington?

WANTED: Butterfly records from Oregon and Washington. The Pacific NW Survey is compiling records for development of distribution maps of these states. Those who have collected in the NW are urged to contact John Hinchliff, 2960 SW Bennington Drive, Portland, OR 97201. Major contributors will be given recognition in a future publication. All records welcome. Complete data essential.

Have you Collected at Tinalandia, Ecuador?

Have you collected at Tinalandia, Ecuador? Ron Leuschner and Brian Harris have collected in that area and are compiling a list of butterfly species from Tinalandia and vicinity. Contributors will be acknowledged. Please send all records to Ron Leuschner, 1900 John St., Manhattan Beach, California 90266-2608.

Reprints Anyone?

Some authors of papers published in the Journal have commented on the embarrassingly small number of reprint requests that they receive. Incapable of entertaining the idea that perhaps no one reads, or cares about, their articles, they have suggested that perhaps some non-publishing members of the Society may not be aware of the availability of free reprints. Free, that is, to the reader requesting them, but purchased by the authors or their institutions for free distribution to their colleagues and other interested parties. The reprints are identical in size and quality to the articles as originally published. The price of postage for a postcard or letter of request to the author is all they cost, which sure beats the cost of photocopying (furthermore, photocopies usually fail dismally in reproducing black-and-white photographs). When you request reprints from authors you build a higher quality reference library while simultaneously reassuring authors that someone not only read their paper, but actually wants a copy for future reference!! [Helpful hint: don't abuse the system by asking for "a copy of all your available papers"; your request may be ignored. Instead, request a specific title, together with others on the same subject of which you might not be aware. Or, tell the author your particular area of interest, and request copies of available papers on that subject.] Some authors will provide you with a bibliography of their published works, indicating those for which reprints are no longer available. Many authors still have reprints available for papers published decades ago, and reprints from deceased authors are often available from the institution where that person last worked.

Thank You to Donors

The Lepidopterists' Society sincerely thanks those persons who help support the Society by becoming sustaining members. As in the past, sustaining members will continue to be recognized in the biennial membership list which will be NEWS #6 of 1994.

Some members of The Lepidopterists' Society who have not chosen the Sustaining Membership category contribute money to the Society above and beyond their dues. In recognition, a list of the contributors will appear in the July-August 1993 (#4) NEWS with contribution categories noted as follows: \$1-\$9; \$10-\$24; \$25-\$49; \$50-\$99; \$100-\$249; \$250 and above. A donor may request anonymity at the time of the donation, or by written notification (received on or before 1 June 1993) sent to the Editor: address on front & back pages of NEWS.

Caribbean Wildlife Surveys Jamaica 1993-94

Caribbean Wildlife Surveys in association with the Natural History Division of the Institute of Jamaica continues biological surveys of Jamaica to record plant and animal distributions in the island. Special attention is paid to moths and butterflies and their life histories. To participate contact Dr. Tom Turner, 2321 State Road 580, Clearwater, FL 34623. Phone (813) 797-0466.

Eagle Hill Wildlife Research Station Field Seminars

Eagle Hill Wildlife Research Station is an independent nonprofit organization located on the coast of Maine. Each summer, regional and national authorities in the field of natural history come to Eagle Hill to lead week-long field seminars in their specialties. The seminars combine intensive field studies with follow-up work in the lab, a review of the current literature and informal discussions. This year's seminars include topics on Mayflies (Dr. Steven K. Burian), Aquatic Entomology (Dr. Elizabeth Gibbs) and Biology of Insects (Dr. Brian G. Scholtens). For more information contact Eagle Hill Wildlife Research Station, PO Box 99, Dyer Bay Road, Steuben, ME 04680. Phone 207-546-2821.

Research Notices



Saturniid Research.....WANTED: Live material of North American ceratocampine saturniids, especially *Eacles* (including *E. imperialis pini*), *Citheronia sepulcralis*, and any *Anisota* and *Sphingicampa* for Ph.D. dissertation research. Will buy or trade specimens if requested. Also interested in obtaining female pupae of *Hemileuca maia* and eggs of any *Hemileuca*. Contact Paul Goldstein, Department of Ecology and Evolutionary Biology, Box U-43, 75 North Eagleville Road, Storrs, CT 06269-3043. Phone: (203) 486-4322 FAX: 203-486-6364.

Research on the Migration of the true armyworm - *Pseudaletia unipuncta*. I am presently running a research programme examining the migration of the true armyworm, *Pseudaletia unipuncta* and would like to obtain specimens throughout the season at different sites along a north-south axis in North America. Funding (or lack of it) unfortunately prohibits me from establishing sites myself but I would like to request collaboration from individuals that are already running light traps. I would cover all costs associated with storing and shipping material. Under exceptional circumstances, I may be able to provide a very modest sum of money or in kind payment with material. Anyone interested, or wishing further information could write or phone: Jeremy N. McNeil, Département de Biologie, Université Laval, Québec, P.Q., CANADA G1K7P4. Phone: (418) 656-2999 FAX: 418-656-2043 or e-mail 3602JMCN@LAVAL.VMI.

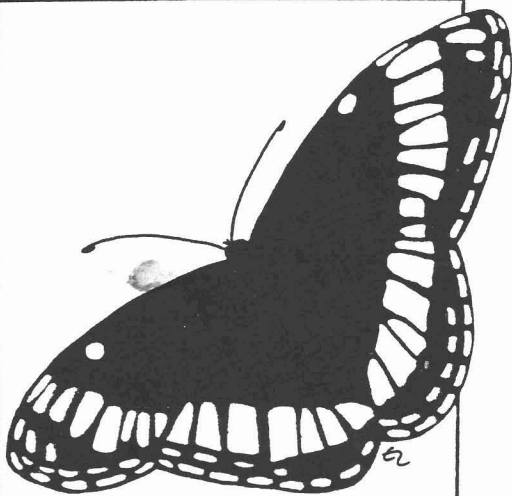
Research relating to Professor R. R. Rowley I seek any biographical or historical information relating to Professor R. R. Rowley, a well known Missouri lepidopterist who published extensively around 1900 in such journals as the *Canadian Entomologist*. He was interested in Underwing Moths (*Catocala*, Noctuidae) especially, but also generally in macrolepidoptera. His address was listed as Louisiana, Missouri, a town on the Mississippi River a few miles upstream from St. Louis, where he was Superintendent of Schools. He was also a paleontologist, and described new fossils from the Midwest. I find no biography listed in Carpenter's "Bibliography of Biographies of Entomologists" (*Am. Midland Nat.* 33 & 50), and the St. Louis Science Center disclaims having his specimens, although they are listed as his repository in Arnett's *Insect and Spider Collections of the World*. I am particularly interested in his correspondence files and Lepidoptera specimens. Any suggestions would be greatly appreciated. Contact Robert Dirig, P.O. Box 891, Ithaca, NY 14851 USA.



Forthcoming Meetings

The Association of Systematics Collections will hold its 1993 annual meeting on May 7-9 at the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania. The theme of the meeting will be "Public Relations for Systematics Collections and Research".

"Ecology and Conservation of Butterflies", an international symposium, will be held 10-11 September 1993 at Keele University, Staffordshire, U.K. Speakers include Phil DeVries, Paul Opler, Ernie Pollard, and Tim New. For details write to Dr. A.S. Pullin, Department of Biological Sciences, Keele University, Staffs ST5 5BG, U.K.

44th Annual meeting

fort collins, colo.

The 44th Annual Meeting of The Lepidopterists' Society will be held at Colorado State University, Fort Collins, Colorado from Thursday, 8 July thru Sunday 11 July 1993, hosted by the Department of Entomology. The Pacific Slope Section of the Society, the High Country Lepidopterists, and possibly the European Lepidopterists' Society will hold their meetings in conjunction. The Idalia Society is sponsoring the meeting, and the Xerces Society will hold its annual meeting concurrently. The officers and the council of the Societas Europaea Lepidopterologica have been invited to participate in the program. The pre-registration form, highlights and additional information is in NEWS #1, 1993.

A peek at the program reveals an illustrated presentation to be given Friday (9 July, 11 a.m.) by Terry Grosz (Assistant Regional Director, Law Enforcement, Rocky Mountain Region, Fish and Wildlife Service) entitled "Wildlife Laws and Enforcement". Also, following the Saturday night banquet there will be dancing to the Golden Oldies at Beethoven's (University Park Holiday Inn).

The logo (above) was provided, courtesy of the Annual Meeting Committee. The stylized logo of Limenitis weidemeyerii, based on a photograph by Paul Opler, was designed and executed by Evi Buckner. T-shirts and polo shirts with the logo will be available at the meeting.

If you are interested in attending the meeting please fill out and return the pre-registration form IMMEDIATELY!. Your packet will then be mailed to you. For more information contact: Boris Kondratieff or Paul Opler, Department of Entomology, Colorado State University, Fort Collins, CO 80523. Phone: (303) 491-7314 (Kondratieff) or (303)226-9401 ext. 234 (Opler).

The 4th National Pesticide Conference is scheduled for 1-3 November 1993 in Richmond Virginia. For more information contact Diana L. Weigmann, Conference Director, Virginia Water Resources Research Center, Virginia Polytechnic Institute & State University, 617 N. Main Street, Blacksburg, VA 24060-3397. (703) 231-6673.

1994 - The 9th European Congress of Lepidopterology is scheduled for 5 - 9 September 1994. The Congress will be held at "Lednice na Morave", Czechoslovakia.



Corrections & Minor Changes to 1992 Member Directory

ADAMS, MORTON S.: change street number to "212"
 ATKINS, ANDREW: change street address to "9 Bathurst Street"
 HABECK, DALE H.: correct street name is "Hull Road"
 KESSELRING, JORGE: new postal code is "58.013-500"
 MANNING, GAIL R.: new P.O. Box: 150349; new ZIP: 75315-0349
 MATTHEWS, DEBORAH L.: correct street name is "Hull Road"
 MOORE, C.H., Jr.: add street number "308"
 SCHMITZ, HARALD: change postal code to "78932000"
 WALKER, THOMAS J.: correct street name is "Hull Road"

NAME CHANGE: CHRISTA L. HOFFMAN (formerly Anderson).

Dr. KEVEN REED, listed in the Directory as a "stateless" U.S. member with an FPO address, informs us that he resides in Okinawa, Japan, and is interested in the fauna of the Oriental Region.

Our apologies to new member CHARLES SASSINE, whose name was omitted from the list of new members in 1993 News #1; his address is in the Directory.

New Members



ALLEN, DOUGLAS C. (Prof.): College of Environmental Science & Forestry, State University of New York, 1 Forestry Drive, Syracuse, NY 13210-2778.

BAIXERAS, JOAQUIN (Dr.): Dpt. Biologia Animal, Universidad de Valencia, C/Dr. Moliner 50, 46100 Burjassot (Valencia), SPAIN.
 BARRY, DON: Rural Route 01, Box 511, West Lebanon, ME 04027.

BEERY, ELI W.: 7012 Henderson Drive, Traverse City, MI 49684-1851. ["lost" when Directory was compiled]

BERS, GEORGE: 950 Iroquois Drive, Pleasant Hill, CA 94523.

BOOMER, BETTY: 47 Ulster Avenue, #1, Ulster Park, NY 12487.

BOUSEMAN, JOHN K.: Illinois Natural History Survey, 607 East Peabody Drive, Champaign, IL 61820-6917.

BOYD, BRET: 207 Valley Forge Avenue, Henderson, NV 89015.

BOYD, JAMES FITZGERALD: 1940 Grand Avenue, #103, St. Paul, MN 55105.

CARL, FRANK: P.O. Box 743, Okeene, OK 73763.

COLER, RHEA: 2405 West Canal, Kennewick, WA 99336.

CORMIER, DANIEL: Sub #1 Box 9113, Moncton, New Brunswick E1C 9K4, CANADA.

DeLANEY, EDGAR A., Jr.: 38 North Highlands Avenue, Avon Park, FL 33825.

DOMINGUEZ, MARTI: Dpt. Biologia Animal, Universidad de Valencia, C/Dr. Moliner 50, 46100 Burjassot (Valencia), SPAIN.

EDWARDS, ROBERT: 1847 North Main Street, Royal Oak, MI 48073.

FINEGAN, BRYAN G. (Dr.): Apartado 93, CATIE, Turrialba 7170, COSTA RICA.

FONDA, MARTIN: 201 McLeod Street, #307, Ottawa, Ontario K2P 0Z9, CANADA

GERMER, JEFF C.: P.O. Box 182, McCool Junction, NE 68401.

GOODIN, FOREST: 114 Swift Street, Santa Cruz, CA 95060.

GROVER, KEITH: 46857 Ann Arbor Trail, Plymouth, MI 48170.
 HANWAY, DIANE: 16511 17-1/2 Mile Road, Marshall, MI 49068
 HARTLING, AARON: 7580 S.W. Alden Street, Portland, OR 97223.
 HERNANDEZ, LUIS ROBERTO: Museo Nacional de Historia Natural, Capitolio Nacional, Ciudad de la Habana, Havana 10200, CUBA.
 HORN, CINDY: 2642 Marathon Lane, Fort Lauderdale, FL 33312.
 LAYA, OMAR MARIO: Av. San Martin 1650 P B "D", (1602) Florida, Buenos Aires, ARGENTINA.
 LYNN, ANN T.: 32 Johnson Road, #D, Bernhards Bay, NY 13028.
 LYNN, LAURA K.: 32 Johnson Road, #D, Bernhards Bay, NY 13028.
 LYNN, DOUGLAS B.: 32 Johnson Road, #D, Bernhards Bay, NY 13028.
 MARX, ROBERT L.: 30 Liberty Street, P.O. Box 311, Spencer, NY 14883-0311.
 McCONNELL, JOHN A.: 12660 UHR Lane, #103, San Antonio, TX 78217.
 MOGOL, JOSELITO L.: P.O. Box 29, Boac, Marinduque, PHILIPPINES.
 MORANZ, RAYMOND A.: 223 Bartram Hall, University of Florida, Gainesville, FL 32611.
 MOVSHOVITS, ITSHAK: Azait 24 St., 51407 Bnei-Brak, ISRAEL.
 MURATA, YASUTAKA: 15 Maruyama, Kamiueno-cho, Muko-shi, Kyoto 617, JAPAN
 NYLIN, SOREN (Ph.D.): University of Stockholm, Department of Zoology, Utlandsgiro 13, S-10691 Stockholm, SWEDEN.
 OFF, MARTIN : Country Life Mobile House, Rural Route 01, Box 114, Midway, AR 72651.
 OLSON, DEAN: 1554 Briarknoll Drive, Arden Hills, MN 55112.
 RANKIN, LAURA: 1416 - 19th Avenue West, Bradenton, FL 34205.
 RIVELLO DE LAYA, LAURA NOEMI: Av. San Martin 1650 P B "D", (1602) Florida, Buenos Aires, ARGENTINA.
 ROUSE, JEFF: 205 East Huisache, #214, San Antonio, TX 78212.
 SCHIBBYE, EYVIND: Kapellveien 56, 0487 Oslo, NORWAY.
 SCHROER, JOHN M.: Rural Route 01, Box 244, Bluemont, VA 22012.
 SEABORG, NORMAN G.: 533 East Division Street, Lockport, IL 60441.
 SEIDL, AMY L.: Dept. of Entomology, Colorado State University, Fort Collins, CO 80523.
 SHATWELL, RAYMOND: 212 London Lane, Glenn Heights, TX 75115.
 SIMONS, LARRY: 407 North Georgia Place, Kennewick, WA 99336.
 SISTO, PHILIP: 170 Skylark Drive, Paducah, KY 42001.
 SKANDAR, LUIS: c/o Santa Cruz Cooperative School, Casilla 753, Santa Cruz, BOLIVIA.
 STANLEY, SCOTT: P.O. Box 3542, Lawrence, KS 66046.
 STEFFY, GAYLE: 337 North Sixth Street, Denver, PA 17517.
 STILLWAUGH, DON, Jr.: 117 Rob Roy Lane, #A, Prospect Heights, IL 60070.
 THURMAN, AL: 5138 Tunder Circle, Phoenix, AZ 85044.
 TILDEN, DAVID C.: P.O. Box 1363, Yellowknife, Northwest Territories X1A 2P1, CANADA.
 VECSEY, TIBOR: 810 Blackland Terrace, #304, Apopka, FL 32703.
 WALDEN, WENDY B.: 3445 Santa Maria, Detroit, MI 48221.
 WATERS, RICHARD T.: 510 Boulevard U-503, Revere, MA 02151.
 WEYLAND, CAROL: P.O. Box 608, Colchester, VT 05446-0608.
 YAP, KOK WAH: 4 Hinkler Street, Greenwich, New South Wales 2065, AUSTRALIA.

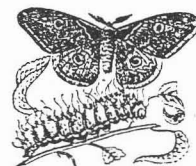
Address Changes

(all U.S.A. unless noted otherwise)



ANDERSON, ERLE: 7105 County Road 6 NW, Garfield, MN 56332.
 BALLARD, ED: 265 Gloria Street, Hayward, CA 94544-3403.
 BERGMAN, WILLIAM: 587 Vine Avenue, Highland Park, IL 60035.
 BOUTON, DAVID W.: P.O. Box 32, Lisbon, NY 13658.
 CARDOSO, ALDO DE SA: Ave. Sta. Rita de Cassia 65, Maceio, Alagoas, CEP 57021-600, BRAZIL.
 CLASSEY, PETER: West Lodge, Buscot Park, Faringdon, Oxon. SN7 8BU, ENGLAND

DANIELS, JARET C.: 2323 S.W. 35th Place #9F, Gainesville, FL 32608.
 DeROLLER, CHARLES J.: 716 Mariner Circle, Webster, NY 14580
 DEWART, MARK: 6710 Caribou Court, Indianapolis, IN 46278-1884.
 FISHER, ANTHONY M.J.: 227 Conlins Road, Scarborough, Ontario M1C 1C4, CANADA.
 FUKUOHJI, REN: Kamui 4 Jo 18 Chome, Asahikawa City, Hokkaido (070), JAPAN.
 HALL, JAMES R.: Edmonds Community College, 20000 68th Avenue West, Lynnwood, WA 98036.
 IPEMA, ROBERT C.: 202 Storybook Terrace NW, Calgary, Alberta T3G 1Y6, CANADA.
 KUHN, JEREMY J.: 6202 Ashford Point, San Antonio, TX 78240-5332.
 LEARY, ROBERT E.: 612 South Westfield, Oshkosh, WI 54901.
 MELLO, MARK J.: P.O. Box 87037, South Dartmouth, MA 02748.
 NAGLE, RAY B. (M.D.): 2626 North Estrella, #3, Tucson, AZ 85705
 PASSELECQ, J.P.: Antenne Entomologique, Passelecq-Richez, Champs de Mars 91, B-7000 Mons, BELGIUM.
 RIDDLEBARGER, JOE E.: P.O. Box 1028, Logan, OH 43138-1028.
 SANDERFORD, MARK V.: 208 Mt. Vernon Avenue, Danville, VA 24541
 SCHOLTENS, BRIAN: Biology Department, College of Charleston, Charleston, SC 29424.
 IAN A. WATKINSON (Dr.): 800 East 32nd Street, #26, Yuma, AZ 85365.
 WIKER, JAMES R.: Rural Route 01, Box 244, Athens, IL 62613.
 WYSOCKI, PAUL F.: 157 Country Club Lane, Scotch Plains, NJ 07076.



The Market Place Buy Sell Exchange Wants

BUY - SELL - EXCHANGE: POLICY STATEMENT

Items submitted for inclusion in this section are dealt with in the manner set forth on page 20 of the Jan/Feb 1993 NEWS. Please note that in keeping with the guidelines of the Society, henceforth no mention of any species on any threatened or endangered species list will be accepted in these items. This will include all Ornithopterans now and for the foreseeable future. Items will be accepted from members only and will be printed only once unless entry in the maximum of two successive issues is requested. Please keep items short. A maximum of 100 words is allowed. SASE in an ad stands for self-addressed stamped envelope. Ads may request bids by mail on a time-limited "best-offer" basis. OBO in an ad stands for "or best offer". For example: "*Watching Washington Butterflies*, by Pyle, 1974. \$10 OBO received by 1 Dec 1992".

The Society, as always, expects all notices to be offered in good faith and takes no responsibility for the integrity of any advertiser. Any disputes arising from such notices must be resolved by the parties involved outside of the structure of the Society. However, aggrieved members may request information from the Secretary regarding steps which he/she may take in the event of alleged unsatisfactory business transactions.

Note: U.S. Department of Agriculture (USDA) may require permits for transport of live lepidoptera in any stage. Please inquire.

WANTED: Information on butterfly gardening specific for my area. Is there anyone out there who is knowledgeable about landscaping (design and preparation) who would be interested in sharing their expertise with me as I try to establish my own lepidoptera (or is it lepidopterist?) habitat. I am knowledgeable about the critters and foodplants, and want to establish several beds and small shrubby versions of silkmoth food trees, but really

don't know where to start. I've great oak and walnut trees, but the nearest leaves are 10-feet up! Contact Monica Miller, 5680 Clark Avenue, Bethel Park, PA 15102.

FOR EXCHANGE: Slides of living butterflies in their natural environments, in Spain, for others of butterflies in different parts of the world. I can provide a list of the species I have photographed to those who are interested. Write to: Manuel Ortiz Garcia, Virgen de la Soledad, 20-A, 4^a D, 19003-Guadalajara, Spain

FOR SALE OR EXCHANGE: Exotic butterflies and beetles of Tibet, China and Korea. WANTED: Exotic butterflies from other parts of the world. Contact: Shin-ichi Oshima, Shimohideya 707-99, Okegawa, Saitama (363), Japan.

FOR SALE/EXCHANGE: Ova of the following *Catocala* species: *C. residua*, *retracta*, *palaeogama*, *cerogama*, *unijuga*, *relicta*, *grynea*, *praeclara*, *ilia*, *ultronia*, and *andromedae*. Send SASE to Darryl Willis, 145 Westfield Drive, Holliston, MA 01746 for price list. phone (508) 429-5378, FAX (508) 429-0374. Ova will not be available after 10 May 1993.

FOR SALE: Custom-made light traps. 15-3,000 watts, new and used available, serious inquiries only. Vernon Brou, 74320 Jack Loyd Rd., Abita Springs, Louisiana 70420. Phone: (504) 892-8732 after 7 pm (Central Standard Time).

WANTED: Howe's *Butterflies of North America*, Riley's *A Field Guide to the Butterflies of the West Indies* and Walker's *The Odonata of Canada and Alaska Vol. I-III*. Write or phone collect: Kirk Zufelt, 6 Nightingale St., Hamilton, Ontario, Canada, L8L 1R6. (416) 528-3035.

FOR SALE: Light Traps, 12 volt DC or 110 volt AC with 15 watt or 8 watt black lights. The traps are portable and easy to use. Rain drains and beetle screens protect specimens from damage. ALSO custom made light fixtures for permanent and/or stationary light traps. Stainless steel design; Mercury Vapor, Sun Lamp, Black Light and Black Light Dark; together or any combination; Electrical control with photo-cells and/or timers. Includes plans for enclosures with rain drains and sorting trays. For more information, contact: Leroy C. Koehn, 6058 Campbell Rd., Mentor on the Lake, OH 44060. Telephone: (216) 257-0796.

FOR EXCHANGE: Many papered moths and butterflies from all parts of the world. Please send SASE to Elmer L. Griepentrog, Elsie Rt., Box 740, Seaside, Oregon 97138.

WANTED: Seeds/Acorns of any type of EVERGREEN OAK species. Especially *Quercus myrtifolia* - Myrtle Oak, *Quercus laurifolia* - Laurel Oak, and *Quercus ilex* - Holm Oak. ALSO WANTED: Larval foodplant seeds of the following species: *Hemileuca burnsi*, *H. electra*, *H. eglanterina*, *H. magnifica*, *H. neumogeni*, *H. oliviae*, *H. griffini*. ALSO WANTED: seeds of *Argemone albiflora* (prickly poppy), *Gymnocladus canadensis*, *Acacia rigidula*, *Prosopis juliflora*, *Acacia flexicaulis*. Or any other species world wide. Write to Randy Robinette - 4528 Hatfield St., Ashland, KY 41102-9154 USA.

WANTED: Contact with Saturniid enthusiasts throughout the world. If you breed, collect or deal in live Saturniids, then please send me your lists of ova or pupae, stating species, availability and price. I can offer for Trade, Sale, or Exchange, livestock of numerous species from all over the world, and would be pleased to send lists to anyone interested, free on request. All Saturniids from your local area are of interest, so please contact: Neil Naish, 105 Warminster Road, Chitternem, Nr Warminster, Wiltshire, BA12 0LH, England, Phone: 098550536 or FAX: 0985 50042.

FOR SALE: Saturniid ova for 1993 including *H. cecropia*, *C. regalis*, *C. angulifera*, *A. luna*, *A. polyphemus*, *Saturnia pyri*, *E. imperialis*, and more. SASE Jeff Frey 364 Oaklyn Road, Lebanon PA 17042 or (717) 272-6597.

FOR SALE: Coleoptera collection including some real specialties like *Titanus giganteus* at 15.2 cm. Jeff Frey, 364 Oaklyn Rd., Lebanon, PA 17042 or (717) 272-6597.

AVAILABLE FROM THE AUTHORS: *The Ontario Butterfly Atlas*, by Holmes, Hess, Tasker and Hanks, 1992. Data for 138 species includes; distribution map and notes; life history timetable; habitat and foodplant notes. Several colour plates. Soft cover only \$25 inclu. shipping/handling. Colour brochure also available. Write to: Alan Hanks, 34 Seaton Dr., Aurora, Ontario, Canada L4G 2K1.

FOR SALE OR TRADE: *Eurytides marcellus*, *Actias luna*, *Papilio troilus*, *Papilio glaucus*, *Paonias myops*. Please send requests to Mr. William Houtz, RD #4, Box 477, Pine Grove, PA. 17963.

FOR SALE: *Goliathus regius*, ♂9cm+, ♂8cm+, ♀; *Petrognatha gigas* ♂7cm+, ♂6cm+, ♀; *Euchirus longimanus* (Ceram Is); *Lucanus maculifemoratus* lg pr; *L. kovamai*; *Odontolabis elegans* (Thailand) ♂6cm+; *Prosopocoilus neervoorti* sm pr; *Cyclommatus imperator* ♂7cm+; *C. metallifer metallifer* ♂6cm+; *Homoderus mellyi* var. "polydantus" lg pr; *Dorcus bucephalus* lg ♂ med ♂, sm ♂; *Nigidius lewisi* ♂; *Aesalus asiaticus*; *Phalacrognathys meulleri*; *Goliathus kirkianus*, and *Goliathus albosignatus*. Please write for those and free lists of worldwide Lucanids, Scarabs, Cerambycids and Buprestids. Also WANTED TO BUY OR TRADE for all species of US Lucanids and all species of *Phonolus*. Chris Adamson, 5010 Solano Ave., Richmond, CA 94805.

FOR SALE OR TRADE: *Catocala* ova: *C. relicta*, *retracta*, *obscura*, *parta*, *ilia*, *amatrix*, *palaeogama*, *ultronia*, *innubens*. SASE to James Mouw, 245 Sarah Ave., Iowa Falls, IA 50126.

FOR SALE: *Butterflies of the Neotropical Region* by B. D'Abbrera. Vol. 3, Parts 1-5 \$800. Contact Laurence Crabtree, Box 79, Chester CA 96020.

FOR SALE OR EXCHANGE: Will have fertile ova of *C. promethea* for sale or exchange this spring. Contact Kenneth R. Knight, 433 Brady NW, Comstock Park, MI 49321 USA. Or phone (616) 784-6243.

FOR SALE: *Color Standards and Color Nomenclature*, Ridgway (1912); *Illustrations of Diurnal Lepidoptera*, Weeks (1905); *Hewitson on Butterflies 1867-1877*, Higgins (1972); *Colored Plates of the Butterflies of the West Coast*, Wright; *Butterflies of California*, Comstock (1927). Miscellaneous lepidopteral publications and reprints; send SASE to M.C. Nielsen, 3415 Overlea Drive, Lansing MI 48917.

WANTED: Riodinidae, papered with full data from the US and Mexico. Can purchase, or exchange for South American material, especially Riodinidae, or African specimens. Curtis J. Callaghan, Avenida Suba 130-25 Casa 6, Bogota, Colombia.

FOR SALE: Live pupae of *Attacus atlas*, *Attacus caesar* and *Attacus samya*. Available in March. Limited Supply. SASE Ken Deitcher M.D., Box 5162, Albany, NY 12205-0162.

WANTED: Living pupae or ova of Saturniidae: *S. cynthia*. John Natale, 1639 North River Road, Coventry, CT 06238 USA. Phone: (203) 742-0379.

FOR SALE: Cocoons of *H. cecropia*. Also papered specimen of *H. cecropia* and *A. luna*. Send SASE to: Ronald Aaron Royer, R.D. 4 Box 2295, Lebanon, PA 17042-9433.

FOR SALE: Two forms of bait traps. Inquire Wm. G. Ward, 1474 Melbourne Dr. SE, Girard, Ohio 44420-1332. Phone: 216-

SEARCHING FOR: *ILLUSTRATIONS OF THE ZYGAENIDAE AND BOMBYCIDAE OF NORTH AMERICA*, R.H. Stretch, 1872, San Francisco. Best price paid, all letters answered. Contact: Louis Hanfield, 133 Messier #301, Mont St-Hilaire, P.Q., CANADA J3H 2W8. Phone 514-467-2091. FAX: 514-467-3745.

FOR SALE: Ova: *A. io*, *A. luna*, *A. polyphemus*, *C. promethea*, *C. regalis*, *E. imperialis*, *H. cecropia*, *H. euryalis*, *H. gloveri*, *S. cynthia*, and *S. pyri*. Others are possible. Send SASE to Mark Schmidt, 8780 Red Lion--Five Points Rd., Springboro, OH 45066. Willing to trade.

WANTED: Contact with persons who collected or observed insects in March or June, any year, on Communications Hill (between Hillsdale Avenue, Monterey Rd., Oak Hill Memorial Park (Cemetery), and Almaden Rd.) just SE of Santa Clara County Fairgrounds. Associated place names: San Juan Batista Hills, Lick (townlet), Bell & Co. Quicksilver Mine, Hillsdale Mine, Southern Pacific Railroad Tracks, Santa Clara County Communications Center, Microwave Tower. Raymond R. White, 788 Mayview Avenue, Palo Alto, CA 94303. Day 408 263-1814; Eve 415 493-5070.

FOR EXCHANGE: Back volumes and numbers of the *Entomological News* to trade for same needed to complete my set. Send SASE for list of offerta/desiderata to Roderick R. Irwin, Rural Route 3, Streator, Illinois 61364.

FOR SALE: Saturniidae of Guatemala. Genera: *Lonomia*, *Diphiopsis*, *Eacles*, *Copaxa*, *Antheraea*, *Automeris*, *Citheronia*, *Rothschildia*, including *Diphiopsis wolffi* Lemaire, 1992; *Copaxa sophronia* female, and red phase male (new) and *C. escalanti*. Contact Bob Natalini, 118 Old Spies Church Rd., Reading, PA 19606 USA. Phone (215) 370-0817.

WANTED: Contact with Mexican collectors or breeders of Saturniids who might be able to supply me with ova, cocoons and or dried specimens of the following moths *Antheraea polyphemus oculea*, *Antheraea godmani*, *Antheraea montezuma* and others. Lenny Hicks, Route 3 Box 758, Banner Elk, NC 28604.

FOR SALE: Large selection of Coleoptera - Lucanidae. I have about 5000 specimens of worldwide Lucanidae (400 species). Please write for free lists. Sell, Buy Exchange. Uwe Eger, P.O. Box 100604, D - 4630 Bochum 1, Germany. Phone & Fax: 0234/705164

FOR SALE OR EXCHANGE: Ova of *Antheraea polyphemus*, *Actias luna*, *Automeris io*, *A. pernyi*, *Hyalophora cecropia*, *H. columbia*, *H. euryalis*, *Callosamia promethea*, *Papilio troilus* and some other species as well. SASE to Mark A. Howe, RR#1, Box 217, North Horseshoe Drive, Lake Village, IN 46349

FOR SALE OR TRADE: Pupae of North American butterflies. *Papilio cresphontes*, *P. glaucus*, *P. polyxenes*, *Polygonia interrogationis*, *Danaus plexippus*, *D. gillippus*, *Agraulis vanillae*, *Epargyreus clarus*, *Phoebis sennae*, *Euptoieta claudia*, and more. Send SASE for list. Dale Clark, 11518 Desdemona Drive, Dallas, Texas 75228.

FOR SALE: Male *Morpho eugenia*. Taken 1-6-92 in French Guiana. Specimen is unpinned and papered. body is intact. Full collecting data. Slight damage. SASE for photograph. Send offers to Michael Lockwood, 215 Hialeah Ave., Houma, LA 70363.

MEMBER'S COMMERCIAL NOTICES



TRANSWORLD BUTTERFLY COMPANY, Apartado 6951, 100L San Jose, Costa Rica, Central America. LATEST 12-PAGE WORLDWIDE ILLUSTRATED LEPIDOPTERA CATALOG: Includes Neotropical, African, Palearctic and Indo-australian region butterflies. Many ex-pupae species available. Specialists in Morphidae, Brassolidae and

Papilionidae. ENTOMOLOGICAL & NATURALIST TOUR PROGRAMS AVAILABLE. Transworld Butterfly Company celebrates 16 years serving Leiodopterists in December 1992. Latest catalog \$1 or one year's monthly lists via airmail \$6.

THOMAS GREAGER, R.D. #6, Box 56-B, Greensburg, PA 15601, USA. FOR SALE: WORLDWIDE BUTTERFLIES in all families. Also some moths, beetles, and other insects. Finest quality specimens, with complete data. Satisfaction guaranteed. Good prices. ALSO FOR SALE: INSECT PINS- Imperial, Elephant, and Stainless Steel in all sizes. United States residents send SASE to begin free price list subscription. Foreign residents send US \$5.00 for a one year price list subscription. WANTED: Contacts with wholesale suppliers of insect specimens from any part of the world.

APOLLO BOOKS, KIRKEBY SAND 19, DK-5771 STENSTRUP, DENMARK. PHONE: 01145 6226 3737. FAX: 01145 6226 3780. As book suppliers to the International Entomological Community for the last ten years, we have the largest selection of entomological books available. We issue our main catalogue each fall and a newsletter in late winter or early spring. Catalogue and newsletter also inform about news on forthcoming publications. Ordering and payment is easy. WRITE, PHONE, OR FAX FOR OUR LATEST FREE CATALOGUE.

THE INSECT COMPANY. P.O. BOX 618. COOKTOWN. AUSTRALIA 4871. We supply only first quality specimens Worldwide. Our latest catalogue contains many hundreds of new Lepidoptera and Coleoptera from the Australian region, Russia, Indo. Pacific, PNG, Europe, Africa and the Americas. Contains hundreds of Papilionidae, Pieridae and Nymphalidae, etc. Saturniidae, Sphingidae etc. Lucanidae, Cerambycidae, Cicadae and many other groups of insects. Updated quarterly. Please send now for free issue. We are always interested in new suppliers small or large from around the world.

IANNI BUTTERFLY ENTERPRISES, PO Box 81171, Cleveland, Ohio 44181, USA. Phone: (216) 888-2310. *LICENSED BY THE US FISH & WILDLIFE SERVICE. Easy to read price lists offer worldwide butterflies, moths, beetles and other unmounted insects in all families and in all price ranges! Personalized service to all - including new hobbyists! Specialties include *Papilio*, *Morpho* (including females), *Heliconius* (including intergrades and hybrids). SUPERIOR QUALITY! PROFESSIONAL INSECT IDENTIFICATION! ACCURATE DATA! DOUBLE BOXING provides safety in transit! ALSO FOR SALE: Austria's finest quality Insect Mounting pins: economical Standard Imperial, Stainless Steel, & double-coated Elephant. BEST PRICES, FASTEST DELIVERY! Send \$5 (\$10 foreign) for 1 year price list subscription.

HARALD SCHMITZ, FAZENDA RANCHO GRANDE, CAIXA POSTAL 361, 78932000 ARIQUEMES, RONDONIA, BRASIL. FAX 0055 69535 4301. The FAZENDA RANCHO GRANDE in central Rondonia, Brasil, offers you a real paradise of insects, birds and mammals for private hobby collecting and photography. NO COMMERCIAL COLLECTORS! We offer 4,375 acres of Rain Forest with 20 miles of trails. German administration, cold drinks. English, German, Spanish and Portuguese spoken. No Malaria, No Cholera. To assure you the finest service, we will accept groups no larger than 12 participants. NO COMMERCIAL COLLECTING BY ATTENDEES WILL BE PERMITTED! Write or FAX for more information.



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DEADLINES: Material for the Jan/Feb issue should reach the NEWS EDITOR by **1 Dec** of the previous year, and that for the Mar/Apr Issue by **15 Feb**, for the May/June issue by **15 Apr** and for the July/Aug issue by **1 June**, the Sept/Oct issue by **15 Aug** and the Nov/Dec issue by **15 Oct**. Reports for the Season Summary must reach the Zone Coordinators listed on the front cover no later than **5 January**. The NEWS Editor accepts articles in any format, but appreciates double-spaced typewritten copy accompanied by a computer disc in any DOS format. NEWS EDITOR is Stephanie McKown, 650 Cotterell Drive, Boise, Idaho 83709, USA. Phone (208) 323-9547. NEWS FROM EUROPE EDITOR is W.O. De Prins, Diksmuidelaan 176, B-2600 Antwerpen, Belgium. Phone 03/322.02.35 (from USA use 011/32.3.322.02.35). BOOK REVIEW EDITOR is Dr. Boyce A. Drummond, Natural Perspectives, P.O. Box 9061, Woodland Park, Colorado 80866, USA. Phone (719) 687-6596.

INFORMATION ABOUT THE SOCIETY.....

Membership in the Lepidopterists' Society is open to all persons interested in any aspect of Lepidopterology. Prospective members should send the TREASURER, Robert J. Borth, 6926 N. Belmont Lane, Fox Point, WI 53217, USA, phone (414) 351-3816, the full dues for the current year, \$25.00 US, together with mailing address and a note about areas of interest in Lepidoptera; student membership (must be certified) \$15; sustaining membership \$35; life membership \$500. Remittances must be in US dollars, payable to the Lepidopterists' Society. All members will receive the JOURNAL (published quarterly) and the NEWS (published bimonthly). A biennial membership directory will comprise the last issue of the NEWS in even-numbered years.

Changes of address (permanent ones only), **Additions or Changes in Telephone Numbers or Areas of Interest and Information about Mailing List Rental:** Contact the ASSISTANT SECRETARY, Julian P. Donahue, Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California 90007-4057, USA.

Information on Membership and other aspects of the Society must be obtained from the SECRETARY, Dr. William D. Winter, Jr., 257 Common Street, Dedham, Massachusetts 02026-4020, USA. Home phone (617) 326-2634.

Requests for Missed Issues (i.e. those not delivered although dues have been paid on time) should be sent to the TREASURER, Robert J. Borth, address above, or the PUBLICATIONS MANAGER, Ron Leuschner, address below. Defective issues will also be replaced by the TREASURER. Do not request these of the NEWS or JOURNAL editors.

Manuscripts submitted for publication in the JOURNAL are to be sent to Dr. John W. Brown, EDITOR, JOURNAL of the Lepidopterists' Society, San Diego Natural History Museum, P.O. Box 1390, San Diego, California 92112, USA. Work phone (619) 942-5147, home phone (619) 422-1846. See the inside back cover of a recent issue of the JOURNAL for editorial policies. Book reviews for the JOURNAL should be sent to Dr. Boyce A. Drummond, Book Review Editor (address above).

AVAILABLE PUBLICATIONS OF THE SOCIETY.... Order from the PUBLICATIONS MANAGER, Ron Leuschner, 1900 John St., Manhattan Beach, CA 90266-2608, USA. Add \$2.00 postage/handling for first book (\$3.00 outside the USA), plus \$1.00 for each additional one.

CATALOGUE/CHECKLIST OF THE BUTTERFLIES OF AMERICA NORTH OF MEXICO (Memoir #2), Lee D. Miller & F. Martin Brown; includes references to original descriptions and location of type specimens. Members and subscribers: \$12 cloth, \$7 paper; non-members, \$19 cloth, \$10.50 paper.

SUPPLEMENT TO THE CATALOGUE/CHECKLIST OF THE BUTTERFLIES OF AMERICA NORTH OF MEXICO (Memoir #3). Clifford D. Ferris, editor. General notes, plus corrections and additions to the original Memoir #2. Members and subscribers: \$6; non-members \$10.

FOODPLANTS OF WORLD SATURNIIDAE (Memoir #4), Steve Stone. A listing of foodplants for more than 500 species of worldwide Saturniidae. Members and subscribers: \$7.20; non-members: \$12.

COMMEMORATIVE VOLUME, 1947-1972: A 25-year review of the Society's organization, personnel, and activities; biographical sketches; JOURNAL 25-year cumulative index by author, subject, and taxon; clothbound. Members and subscribers, \$8; non-members, \$12.

1992 MEMBERSHIP DIRECTORY (current to October 1992). Biennial directory of members and their addresses, with geographic and interest indices. Not available for commercial use. (NEWS #6 for 1992). \$5.00.

BACK ISSUES of the JOURNAL and of the NEWS of the Lepidopterists' Society. For a list of the available issues and their cost, postpaid, send a SASE to the PUBLICATIONS MANAGER.

