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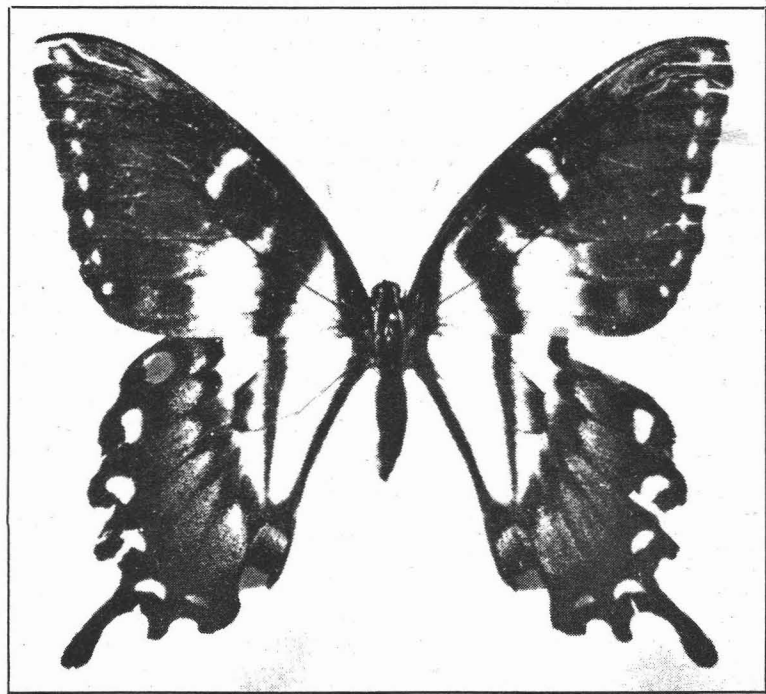
THE ANNUAL FIELD SUMMARY

FOR

1977

Lepidoptera Conservation
and the
Endangered Species Act

The Spreading Board



Nonconformist butterfly of the year. A semi-melanic

Papilio glaucus

(see center spread for underside and story)

LEPIDOPTERA CONSERVATION and the ENDANGERED SPECIES ACT OF 1973

--a different viewpoint

I read with interest the article by J. B. Zeigler in the last Leps' NEWS. Many of his points regarding the inadequacies of the Endangered Species Act of 1973, when applied to butterflies and other invertebrates are well taken, particularly since the law was written with vertebrates in mind. However, butterflies, like other endangered animals, are national resources which benefit the public, and as such are as worthy of government protection as any other animal. Mr. Zeigler, in choosing to limit consideration to the potential impact of the Endangered Species Act (ESA) on the collecting activities of both professional and amateur lepidopterists, seems to say that 'conservation of lepidoptera' is the preservation of the opportunity to collect. I find it unfortunate that he does not take the broader view that conservation of lepidoptera can also mean preventing the extinction of some species of butterflies.

The San Francisco Peninsula once supported three butterflies now extinct: the xerces blue (*Glaucopsyche xerces*), the pheres blue (*Plebejus icaroides pheres*), and the sthenele satyr (*Ceryonis sthenele sthenele*). Two endemic butterflies still manage to survive on this now-urbanized finger of land: the San Bruno elfin (*Callophrys mossii bayensis*), and the mission blue (*Plebejus icaroides missionensis*). In all probability the only thing standing between these two taxa and their extinction is the Endangered Species Act. This is because a large segment of the San Bruno Mountains, including the greater part of the ranges of these two butterflies, has been slated for development. Most of the land not designated for housing will be used as a park, and most of the known colonies of both the elfin and the mission blue occur within the proposed boundaries of this park. This does not necessarily mean, however, that the butterflies will be preserved. Indeed, the latest park development plan would severely threaten if not obliterate the type colony of the elfin through alteration of the environment and consequent elimination of the larval food plant, as well as damaging other of its colonies. But owing to the watchdog lepidopterists in the area, decimation can, in this instance, be averted. Both butterflies, being on the Endangered Species List are protected by law. According to law, future habitat modifications of the area should take into account the extent to which man and butterflies can be compatible in the same habitat, making it possible for both the mission blue and the elfin to survive. If these two butterflies were not on the Endangered Species List, I am convinced that their extinction through habitat destruction would be inevitable.

Now let's look at another butterfly. *Speyeria callippe callippe* is a weakly differentiated subspecies which is now almost endemic to the San Bruno Mountains. One other colony is known from the Oakland Hills. This species is *not* protected by the ESA. Both of the San Bruno colonies face extinction in the process of housing construction. With the elimination of all but one colony, this butterfly is in all likelihood doomed to extinction. If it had been on the Endangered Species List, the story would have a different ending.

There are but two clear-cut choices which exist regarding an endangered butterfly. Either it is placed on

the endangered list to prevent its continued decline, or it is not placed on the endangered list and becomes extinct. Either way the collector will not be able to take that butterfly. At least the second choice may insure that butterfly's survival, and if I were to think of the butterfly rather than of myself, I would choose the latter option.

Many collectors feel that collecting an endangered butterfly will have little effect on its populations. Regarding the San Bruno elfin and mission blue, they are probably right. But without the protection of EDA, remaining populations would soon be decimated through habitat destruction, and they would then *become* endangered.

I can understand why some collectors might be upset by the possibility that more and more butterflies could be listed as endangered, to the point that butterfly collecting could become as restricted as bird or mammal collecting is today. But I cannot see this actually happening. Paul Opler is a responsible individual (an avid collector himself), and as long as he guides the terrestrial arthropod program at OES, I am convinced that only legitimately endangered butterflies will be so listed.

The non-legitimate, indiscriminate listing of butterflies has simply not occurred, and all of the taxa presently listed as endangered, with the possible exception of Smith's blue *are* near extinction.

Regarding Smith's blue, (*Shijimiaeoides enoptes smithi*) collectors have a point. It was listed as endangered before four important new colonies were discovered. For this reason it can be reclassified as a threatened species which means that it could then be collected under certain conditions.

I am in sympathy with those concerned about unnecessary restrictions on their collecting rights. But even endangered and threatened species can be legitimately collected for legitimate purposes. I would be interested to hear from anyone with a legitimate purpose for collecting specimens, who has applied for a permit and not been granted one. The way to remove collecting restrictions from butterflies such as the San Bruno elfin is NOT to complain to OES, but to write to your congressional representatives, since the collecting restriction is built into the Endangered Species Act, and can be modified ONLY by an act of congress. The time to write to OES is when a butterfly is being considered for listing as endangered or threatened. Lepidopterists who withhold information from OES are only hurting themselves, since OES makes decisions on the basis of what data it can obtain on each taxon. A lack of information can cause an unnecessary listing. It seems to me that lepidopterists would be wise to concentrate their efforts on removing restrictions laid down by the National Park Service and many state park departments, which prohibit collecting of *all* invertebrates, most of which are not even threatened! It is obvious that regulations of this sort constitute a far greater infringement of 'collecting rights' than a prohibition against collecting six endangered butterflies.

In the cases of the three remaining species now on the endangered list: Lange's metalmark (*Apodemia mormo langei*), lotis blue (*Lycaeides argyrognomon lotis*), and the El Segundo blue (*Shijimiaeoides battoides allyni*), would undoubtedly pose a serious threat to colonies now known. The question is whether or not it is *right* to collect any butterfly if collecting it is tantamount to bringing about its extinction.

The case of the national parks brings up another question. Is it logical to place a butterfly on the endangered list if its populations are already located in a protected area? The answer is simple. Habitat modification goes on in protected areas also --road building and widening, construction of park buildings, controlled burnings, etc. One need only go to Yosemite Valley to see such modification. Hence there is a very real possibility that populations could be reduced or eliminated. The Endangered Species Act perhaps has its greatest impact on the actions of federal agencies and others in some way funded by the Federal Government. Their actions cannot at any time conflict

Field Summary 1976

ZONE 1: SOUTHWEST: ARIZONA, NEVADA, CALIFORNIA. Coordinator: R. L. Langston (RL). Contributors/collectors: R. A. Bailowitz (RAB), R. W. Breedlove (RWB), J. P. Brock (JB), W. R. Dawes (WD), S. K. Dvorak (SD), C. D. Ferris (CDF), G. S. Forbes (GF), L. Gall (LG), R. C. Gardner (RG), B. M. Griffin (BG), K. C. Hansen (KH), C. Henne (CH), R. H. Leuschner (RL), S. E. Miller (SM), J. R. Mori (JM), D. Mullins (DM), M. J. Plagens (MP), H. V. Reinhard (HR), K. Roever (KR), C. A. Sekerman (CS), A. M. Shapiro (AS), O. Shields (OS), M. J. Smith (MS), G. F. Soule (GS), F. T. Thorne (FT), P. M. Tuskes (PT), M. D. Van Buskirk (MV), R. H. Vanderhoff (RV), J. Weintraub (JW), R. E. Wells (RW), and J. & S. Werner (JSW).
 COUNTY, STATE (in caps.) = New county, state records. NORTH, SOUTH, etc. = Northerly, Southerly, etc. range extensions. (Zone 1 summary came in two sections, which have been pieced together, disturbing order of CA and AZ species. Ed.)

ARIZONA: Spring drier than normal, with some species early (JSW). In early July drought conditions prevailed in the southeast (CDF). Summer rainfall spotty (as usual), but above normal in the Santa Catalina Mts., hence many species taken in Sept., Oct. & Nov. (MP).
 MIGRATORY SPECIES: Phoebis sennae marcellina moving northward thru Guadalupe Cyn., Peloncillo Mts., Cochise Co. at ca. 125/hr., 31 July - 1 Aug. (JSW). Libytheana bachmanii larvata, Finger Rock Cyn. & Molino Basin, Pima Co., Sept. - Nov. (MP). L. carinenta mexicana taken earlier, 13 Aug. at Finger Rock, Pima COUNTY (MP).
 MOTHS: Sphinx dolli, Cave Cr. area, Cochise Co., 7 July (CDF). Agrius cingulatus larvae on morning-glory. Erinnyis ello larvae on stinging euphorbia, Sonoita Cr. nr. Patagonia, Santa Cruz Co., 25 Aug. (KH). Proserpinus terlooii larvae on Boerhaavia coccinea, Box Cyn., Santa Rita Mts., Pima Co., 7 Aug. (KH). Citheronia splendens sinaloensis larva on wild cotton, Box Cyn., 4500', Santa Rita Mts., Pima Co., 5 Sept. (MS). Automeris sp. & Anisota oslari larvae on Quercus, 4 mi. n. Sonoita Jct., Santa Cruz Co., 5 Sept. (MS). Eupackardia calleta mature larvae on Sapium biloculare, Darby Wells rd. nr. Ajo, Pima Co., 15 Feb. (KH, MV). 100 + ♂♂ of Hemileuca tricolor at store lights, Quijotoa, Pima Co., 15 Feb. (KH, MV). H. eglanterina ssp. adults July 1974 (KH), egg masses on Amelanchier sp. & Cercocarpus sp., Roaring Springs trail, N. Rim Grand Cyn., Coconino Co., 15 June 75 (BG), reared, adults emgd. June, July 76 (KH) [?? resemble H. e. annulata, ♂♂ with black & white forewings]. Arctiidae: Cisthene iuanita & Noctuidae: Iscadia aperta, Heminocloa mirabilis, Cave Creek, Miller & Ramsey Cyn. areas, Cochise Co., 22-29 Aug. (RL). Lasiocampidae: Last instar larva of Gloveria gargamelle on oak, 21 June 75, Molino Basin, Santa Catalina Mts., Pima Co., ♀ emgd. 19 Oct. 75 (KH). Pyralidae: Microcausta bipunctalis & Scissolia harlequinaria, Cave Creek, Miller & Ramsey Cyn. areas, 22-29 Aug. (RL).
 BUTTERFLIES: Heliopterus ericetorum ova & larvae on wild hollyhock, Jerome Water Tanks, Yavapai Co., 9 June (KH). Erynnis pacuvius larvae on Ceanothus & Epargyreus clarus huachuca larvae on Robinia neomexicana, Miller Cyn., Cochise Co., 27 Oct. (KH). Papilio rudkini, 80% of larvae in last instar, nr. Hughes Corral s. of Sunflower, Maricopa Co., 5 Nov. (KH). Eurema mexicana larvae on Acacia sp., Molino Basin, 16 Nov. (KH). One pupa of Emesis ares on oak leaves, 2 Aug. Heart of the Rocks trail, Chiricahua Nat. Mon., Cochise Co., ♀ emgd. 13 Aug. (KH). Thessalia cyneas, Miller Cyn., 5500-5600', Huachuca Mts., Cochise Co., 22 Oct. 75, LATE (KH), June 76 (KR), 26 July (KH), 15 Sept. (DM) & 7 Oct. 76 (KH). Euphydryas chalcedona klotsi larvae on Penstemon microphyllus, Sycamore Cr. s. of Sunflower, Maricopa Co., 22 Feb. (KH). E. c. klotsi/kingstonensis blend zone, Gold Rd. nr. Oatman, Mohave COUNTY, larvae 21 Mar. on P. microphyllus, adults emgd. April (KH). [New COUNTY for either K. or k. and new for ARIZONA if kingstonensis].
E. anicia hermosa larvae on Penstemon sp., Molino Basin, Pima Co., 25 Jan. & Snebley Hill Rd. nr. Sedona, Coconino Co. larvae on Penstemon sp. 16 May, adults in Dec. under artificial conditions (KH). Also: Lerodea arabus, Box Cyn., Pima Co., 3 Oct. (JSW). Nyctelius nyctelius, Nogales, Santa Cruz COUNTY & STATE, 4 Sept. (RAB). Amblyscirtes prenda, Patagonia, S.C. Co., 1 Aug., 5 Sept. (RAB). Atrytonopsis lunus, upper Madera Cyn., S.C. Co., 14 Aug. (CS). A. lunus, deva & python sympatric, vic Onion Saddle, Chiricahua Mts., Cochise Co., 7 July (CDF). Hesperia uncas lasus common, with H. pahaska williamsi, 4 mi. s. Sonoita, S.C. Co., 13 Aug. (CS). Polites coras, P. draco, Oarisma garita & Thorybes mexicana dobra, Ditch Camp nr. Greer, Apache Co., 9 July (CDF). Phoedinus mysie, Patagonia, 1 Aug. (RAB).
Heliopterus domitella, Box Cyn., Pima Co., 3 Oct. (JSW). Erynnis tristis fatius & E. juvenalis clitus, Onion Saddle, Barfoot Park & Rustler Park, Cochise Co., 7 July (CDF). Large, fresh 2nd brood adult of Papilio indra kaibabensis, Bright Angel Point, North Rim Grand Cyn., Coconino Co., 5 Aug. (JW). P. multicaudatus, Cape Royal, North Rim, 4 Aug. (JW) & Finger Rock Cyn., Pima Co., 11 Nov., LATE (MP). Pieris occidentalis, San Francisco Mts., Coconino Co., 9-11 July (K. Roever, JSW) [Confirms 1971 record for Coco. Co.]. Colias philodice abundant 7 Sept. off Hwy. 80 e. side Chiricahua Mts., Portal & Cave Cr. areas, Cochise COUNTY & EAST for Ariz. (CS). Eurema proterpia, 3 mi. sw. Patagonia, 5 Sept. (JB, JM, MS) & Molino Basin, Pima Co., 11 Sept. (MP). E. दौरа lydia, Nogales, Santa Cruz COUNTY, STATE & NORTHWEST, 4 Sept. (RAB). Apodemia mormo, Finger Rock Cyn., Sept.-Nov., LATE (MP). A. palmeri, Finger Rock & Molino Basin, Aug.-Oct. (MP). Calliphrys xami, se., end Bradshaw Mts., Yavapai COUNTY & NORTH, 25 Aug., 28 Sept. (RAB) [Possible stepping stone to single ♀ from Providence Mts., Calif., 1934]. Euristrymon ontario ilavia, Hull Cyn., Black Hills, Yavapai Co., 26 June (JSW). Lycaena rubidus, P. saepiolus gertschi & P. icarioides buchholzi, Ditch Camp nr. Greer, Apache Co., 9 July (CDF). Shij. rita spaldingi, Happy Jack, Coconino Co., 10 Aug. (CS).
Anaea aidea, Guadalupe Cyn., Peloncillo Mts., Cochise Co., 10-11 April, EARLY; Squaw Gulch, Santa Rita Mts., 9 May; & Ruby, S.C. Co., 10 Oct. (all JSW). Asterocampa montis & leilia together in good numbers, Florida Wash below Madera Cyn., Pima Co., 4 Sept. (MS). A. montis, leilia & subpallida sympatric, Guadalupe Cyn., 2 Oct. (JSW).
L. weid. angustifascia, Point Imperial, 4 Aug. & Cape Royal, 5 Aug., both North Rim Grand Cyn., Coconino Co. (JW).
Anthanassa texana, 3 mi. SW. Patagonia, S.C. Co., 5 Sept. (JB, JM, MS) and Finger Rock Cyn., Pima Co., Nov., LATE (MP).
Phyciodes picta canace, Guadalupe Cyn., 20 Mar.-31 May, 21 Aug. (JSW). Thessalia cyneas, Miller Cyn., Huachuca Mts., Cochise Co., 8 Sept. (CS). T. theona thekla & Poladryas arachne nympha, hilltops Hwy. 83, 4 mi. n. Sonoita Jct., S.C. Co., 5 Sept. (JB, JM). Speyeria electa shellbachi, Point Imperial, North Rim Grand Cyn., Coconino Co., 4 Aug. (JW).
S. mormonia luski just emerging, Ditch Camp, Apache Co., 9 July (CDF). Cyllopsis pertepida dorothea, Molino Basin, Pima COUNTY & SOUTH, 11 Sept. (MP). C. p. maniola, Cave Cr. area, 6 July, Barfoot Park & Rustler Park, 7 July, all Chiri. Mts., Cochise Co. (CDF). C. henshawii, Squaw Gulch, S. Rita Mts., S.C. Co., 8-9 May, EARLY (JSW). Cercyonis meadii mexicana, Molino Basin, 3000-5500', Pima COUNTY & LOW ELEV., 11 Sept. (MP) [SOUTH for Arizona or NORTH from Mexico].

NEVADA: Winter snowpack was light, and most of the state remained very dry -- correlating with the 1976 drought in California. Following the Pacific Slope Meeting, seven collectors conducted a butterfly count in the Carson City-Gold Hill-Virginia City-Ophir Grade areas on 4 July. A total of 29 species were observed and/or taken. Some of the more prominent ones are listed in the Minutes (NEWS, No. 6, 20 Dec. 1976, p. 6).

MIGRATORY SPECIES: Several resident Danaus plexippus adults and larvae noted in Lyon, Storey and Washoe Counties on 4 July, but no migrations reported for this or any other species in Nevada.

MOTHS: Copicipucullia antipoda (Noctuidae), at light Carson City, 4675', 3 July (RL). Pyla subargentana (Tortricidae), Mt. Rose - Slide Mtn. Jct., Washoe COUNTY & STATE 5 July (RL).

BUTTERFLIES: Thorybes mexicana nevada & Shij. battoides glaucou, Slide Mtn. at 9200', HIGH ELEV., 5 July (RL). Satyrium sylvinus putnami & Lycaena rubidus common, 1 mi. s. Fernley, 4000', Lyon Co. & Truckee R. se. of Wadsworth, 4075', Washoe Co., 4 July (RL). Glaucopsyche piasus, Spooners Summit, 7100', Douglas Co., 1 July (OS). Phyciodes orseis herlani, mtns. w. of Carson City, 3 July (RW). Nymphalis milberti furcillata & Speyeria mormonia arge, Mt. Rose Cpgd., 8900', Washoe Co., 5 July (RL).

CALIFORNIA: The great drought of 1976 began in the fall of 1975. Jan. was rainless and warm in the south (FT), mostly dry in the north (RL). Mountain snows were sparse and melted by April up to moderately high elevations (AS). (Hence, many EARLY records.) The unusual Hurricane Kathleen in Sept. dumped up to 10" on southern Calif. mountains, heavy amounts in adjacent deserts (GF, FT), 5" downpour on upper desert (CH), and much lesser amounts to the north (RL). (Hence, fall flights of several "spring" species.) Both mountain and valley temps. in Sept. thru Dec. were far above normal, as was % sunshine (AS). With only a few widely spaced light rains in central and northern Calif., the drought continues (RL).

MIGRATORY SPECIES: Most spectacular was the reappearance of large numbers of Phoebis sennae marcellina in southern Calif. after many years of scarcity: Adults flying thru Huntington Beach, Orange Co., mid-Sept. (RV); albinic?? appeared in urban areas & deserts of San Diego Co. by October 1, with yellow forms persisting for rest of year (FT); quite widespread in coastal S.D. Co. (GF); common after Hurricane Kathleen in the Anza-Borrego Desert areas, 17, 31 Oct. (CS); occasional sw. of Scissors Crossing, S.D. Co., 2 Nov. & in Santa Ana Cyn., Orange Co., 18 Nov. (RV); and, one ♀, North Hollywood, L.A. Co., 31 Nov. (CS) -- still rare in the San Fernando Valley. Cynthia cardui low most of season, but many fresh at Bodega Head, Sonoma Co., 6 March (AS); appeared in the fall -- Sierra Nevada early Sept., Delta Area, 24 Sept. - 24 Dec. and Sacramento Valley early Dec. (AS); Imperial Co., 17 Oct. (OS); C. Costa Co., 20 Oct. (RL). Nymphalis californica rare everywhere (AS); Eldorado Co., 20 March (RL); Nevada Co., 7000', 30 April (AS). Earliest D. plexippus in Davis, Yolo Co., 9 Feb. with migrations both ways strong, summer pops. good (AS); large numbers in Bay Area mid-Oct.; Santa Cruz, 13 Nov.; and last observed C. Costa Co., 2 Dec. (RL).

MOTHS: Saturnia walterorum 1♂, 3 mi. nw. Santa Barbara, 16 Mar. (PT) (2nd from Sta. Barb. Co., 1st in over 20 years!). Halisdotia maculata larva on Salix lasiolepis 1 June, SBMNH, Santa Barbara, emgd. 2 July (SM). Ectypia clio, I & II instar larvae on Asclepias sp., 5 mi. n. Knoxville, Napa Co., 5 July (E.S. Ross), few diapaused as larvae, most pupated Sept., emgd. Sept.-Oct. (HR). Lymantria dispar ♂♂ in gypsy moth traps, San Jose, 21, 26 July (T. Hafner RL), egg masses found by Dept. Agric., Oct.-Nov. Brephos infans oregonensis, Stonybrook Cyn., Alameda Co., 18 Jan., EARLY (RL). Esperia sulphurella (Oecophoridae), Kensington, Contra Costa COUNTY, Feb.-April (RL). Ethmia discostrigella subcaerulea, Santa Barbara, 28 Jan., EARLY (SM) (Published dates Mar.-Sept.). Sphingidae: Euproserpinus phaeton day-flying, Bautista Cyn., Riverside Co., 20 Mar. (RL). E. p. mohave abundant, Llano, Los Angeles Co., 18 Mar. (CH, RL). Saturniidae: Hemileuca neumoegeni larvae on Prunus sp., 25 Apr., Providence Mts., S. Bdn. Co., adults emgd. Aug. (KH). Noctuidae: Lasiestra benjamini, Tom's Place, 8000', Mono Co., 4 July (RL). Lithophane gauspata, Big Pine, L.A. Co., 18 Jan. (CH). Geometridae: Aupithecia cypressata, Carmel, Monterey Co., 10 Apr. (RL). E. edna & Cossidae: Acosus populi angrezi at blacklight, Rock Creek, Tom's Place, 4 July (RL). Pyralidae: One Titanio dapalis dayflying at 37 degrees F, noon 27 Nov., Pinyon Crest, Riverside Co. (RL) (Fall flight late No., adults usually in spring). Ethmiidae: Ethmia coquilletella, Pinyon Crest, 21 Mar. (RL). Adelidae: Adela thorpella, Kern River, Kern Co., 25 Apr. (RL).

BUTTERFLIES: H. lindseyi & E. pacuvius callidus, Sawmill Camp, 5000', San Gabriel Mts., L.A. Co., 19 June (RL). P. indra fordii, Granite Mts. nw. of Lucerne Valley, S. Bdn. Co., adults and ova, with larvae extremely abundant, Mar. to May (DM). C. philodice, 3 mi. s. Big Pine, Inyo COUNTY, 22 July (GS) (New COUNTY and furthest NORTH for Calif. Previously known from Imperial Co.). P. sennae marcellina, Huntington Beach, 12 Oct., & Newport Beach, 6 Dec., LATE, both Orange Co. (GS). A. lanceolata australis HIGH ELEV. & G. piasus, Garnet Peak, 5665', San Diego Co., 16 May (GS). P. neurona, S. coronis hennei/semiramis & S. callippe marcaria, Sawmill Camp, San Gabriel Mts., 19 June (RL). C. neumoegeni, Whitewater Cyn. & with E. chalcedona (reddish desert variety) at Chino Cyn., Riverside Co., 17 Oct. (GS) (Unusual fall flights for both after Sept. rains). E. editha wrighti larvae common on Plantago erecta, Gavilan Hills, Riverside Co., 28 Feb. (BG).

ALSO: A. stephensi, Mountain Springs, Imperial Co., 17 Oct., LATE after Sept. rains (OS). L. eufala, Rancho Cordova, Sacramento Co., 10 Feb., EARLY (AS). A. vialis, N. Yuba R. w. of Downieville, Sierra Co., 8 May (RL). E. vestris common, Scott Camp Cr., Siskiyou Co., 5 July (CS). O. yuma, Suisun Marsh, Solano Co., 15 May, EARLY (AS). H. Tindseyi, 6 mi. w. Patterson, Stanislaus COUNTY, 29 May (RG). C. palaemon mandan, Castle Lake, Siskiyou Co., 27 June (JM, MS). H. domicella, side cyn. off Sentenac Cyn., 2000', San Diego COUNTY, 23 Oct. (SD) (2nd STATE record, 1st in S. Bdn. Co., 1970). P. scriptura vernal phenotypes, Putah Cr., Davis, Nov. 15, LATE (AS). E. persius, Rancho Cordova, 45', LOW ELEV., Sacramento COUNTY, 14 April (AS). E. pacuvius pernigra, Smith Grade se. of Bonny Doon, S. Cruz Co., 29 May (RWB); Chino Cyn., Riverside Co., 5 Oct. (RV); and more common than usual, Anza-Borrego Desert areas, 17, 31 Oct. (CS). T. pylades very common, Gates Cyn., Vaca Hills, Solano Co., 13-24 Apr. (AS), 17 Apr. (RL, CS). E. cianus lighting on Amorpha californica, Alamo Mtn. at 6150', Ventura Co., 26 June (RV) (4th Loc. for Vent. Co.). B. philenor hirsuta, Gates Cyn., 31 Jan., EARLY (AS). P. bairdii, Onyx Peak, S. Bdn. Co., 4, 18 July (WD) & larvae common on Artemisia dracuncululus in much of the eastern part of S. Bdn. Mts., late July-Aug. (RV). P. rudkini larvae, Mountain Springs, Imperial Co., 17 Oct. (OS). P. indra, hill 4 mi. n. Moskowitz Corner, Napa Co., 17, 28 Apr., 5 May (OS); Telescope Peak, 11,049', Panamint Mts., Inyo Co., 9 May & hilltopping summit White Mtn. Peak, 14,246', HIGH ELEV., Mono Co., 17 June (SD). P. eurymedon, Box Cyn., Anza Desert, S.D. Co., 6 Oct., very LATE & on DESERT (GF).

N. menapia intermed. to tau, Angwin, 2 mi. n., Napa Co., 19 June, assoc/w Pinus ponderosa (RL) (tau in Sonoma Co. on Douglas fir). P. occidentalis (unambiguous!), Rancho Cordova, 45', Sacramento COUNTY & LOW ELEV., 17 Oct. (AS). P. napi gen. aest. castoria ova on Dentaria 12 Mar., Swanton Rd. 12 mi. nw. Santa Cruz, adults emgd. mid-Apr. (MS) & adults San Mateo County Memorial Park, 29 June (RL). P. napi microstriata, Rock Cr. & s. fk. American R., both ne. Placerville, Eldorado Co., 20 Mar., assoc/w watercress (RL); Gates Cyn., Solano Co., 17 Apr. (RL, CS); common at Jerseydale, 3500', Mariposa Co., 24 Apr. (OS); and abundant N. Yuba R., 2200', w. of Downieville, Sierra Co., 8 May (RL). C. behrii common, 1 mi. n. Saddlebag L., Mono Co., 28 Aug. (PT). Z. eurydice, American R. Gorge below Auburn, 21 Jan., EARLY & Alta, 3000', 21 Apr., both Placer Co. (AS). Z. cesonia commoner than usual on deserts of eastern S.D. Co., Sept. Oct. (GF). P. sennae marcellina & E. nicippe larvae on Cassia covesii, Anza-Borrego Desert areas, 17, 31 Oct. (CS). A. cethura, Goldledge Cr., 8 mi. n. Kernville, Tulare COUNTY, 25 Apr. (JB, MS). A.c. catalina 1♂, 0.8 mi. se. Avalon on rd. to Renton Mine, Santa Catalina Island, 26 Mar. (LG), with A. sara gunderi common at several locs., 24-26 Mar. (LG). A. lanceolata numerous, N. Yuba R., 2200-2800', w. of Downieville, 8 May (RL) & 8 mi. n. Bartle, Siskiyou Co., 26 June (JM, MS). A. l. australis, Mill Creek Cyn., L.A. Co., 14 Mar. (WD). A. mormo cythera abundant, 7 mi. w. Independence, Inyo Co., 1 Aug. (CS). A. m. virgulti & deserti contiguous, 1 mi. ne. Desert View Tower (e. of Jacumba), S.D. Co. -- deserti on lower slopes, virgulti on hillside 25 yds. above -- very few intergrades noted (GF). After Sept. rains, conditions ideal for C. wrighti, many fresh adults most of Oct. with larvae plentiful, Sentenac Cyn. (FT); Usually a spring flyer, there were amazing flights of C. wrighti early Sept. to early Dec., still fresh (GF); Succession of broods and larvae abundant near Borrego, Sentenac, Box Cyns., La Puerta, etc. (GF). H. grunus, Meyers, 5000', Eldorado Co., 28 Aug., E. SLOPE (AS). S. behrii, Dome Spring Camp, Cuyama Valley, Ventura Co., 20 June -- 1st record on floor of Cuyama Valley (SM). S. auretteorum spadix, Silverado Cyn., 1700', Orange., 11 June (RV). S. auretteorum, tetra, saepium & californica all on buckeye blossoms, Triangle Rd. e. of Mariposa, 12 June (MS). I. mossii prob. doudoroffi ova & larvae on Sedum spathulifolium anomalum & Dudleya sp., 7 mi. w. Atascadero, San Luis Obispo COUNTY & SOUTH, 16 May (JB). M. spinetorum, American R. nr Folsom, 150', LOW ELEV., Sacramento COUNTY, 28 Feb., EARLY, 5, 7 Mar. (RW). M. s. & M. johnsoni together, ridge n. of Butts Cyn., Napa Co., 18 Apr. (OS). A. halesus corcorani, Suisun Marsh, Solano Co., 25 Apr. & Lang Crossing, 4500', Nevada Co., 9 July (AS). S. avalona, Santa Catalina Island, swarming at all localities visited, 20 taken, 1000++ observed 24-26 Mar. (LG). L. rubidus & heteronea, Warren Cr., 9000' e. of Tioga Pass, Mono Co., 7 June (HR) & Castle Peak n. of Donner Pass, Nevada Co., 28 July (AS). L. heteronea clara, Piute Mtn. Lookout, 8300', Kern Co., NORTH, 11 July (JB). L. editha & cupreus, 9 mi. nne. Bartle, Siskiyou Co., 26 June -- much darker than Sierra material (JM, MS). L. marina, Gates Cyn., Solano COUNTY, NORTH for Coast Range, 25 Aug. (AS). P. saepiolus (? ssp.), Landers Cr. nr Sorrell Peak, Piute Mts., Kern Co., 11 July (JB) (1st record for Piutes, isolated from main Sierra pops. & from hilda in the San Gabriels). P. neurona, Alamo Mtn., 6150-7100', Ventura Co., 26 June (RV). P. icarioides & G. lygdamus columbia common around same lupines, N. Yuba R. w. of Downieville, Sierra Co., 8 May (RL). P. i. missionensis numerous, Sausalito, 2 mi. s., Marin Co., 16 Apr. (RL, CS). E. amyntula, Cambria Pines, S.L.O. Co., adult + 28 larvae on seeds within pods of Astragalus nuttalli 12 July, some pupated 16 July, adults 26-28 July (HR). P. sonorensis, American R. 4 mi. upstream from Auburn, Placer Co., 31 Jan., EARLY (RW). C. argiolus echo abundant, vic Avalon, Santa Catalina Island, 24-26 Mar. (LG) & Little Harbor, S.C.I., 28 Nov., very LATE, fresh (RV). D. gilippus strigosus, Gilroy Cyn. Wash., Providence Mts., 30 May & Redlands, S. Bdn. Co., 4 July (WD). C. gabbi, Partington Cyn., Monterey Co., 25 Apr. (RL). C. neumoegeni, Pearl Blossom, L.A. Co., Oct. (CH) -- the only butterfly on upper desert with heavy fall emergence -- host shrubs Machaeranthera & Acamptopappus were in full new leaf (CH). C. n. & californica common, Chino Cyn., Riv. Co., 5 Oct. -- cyn. very green due to heavy earlier rains (RV). C. palla locally common, Alamo Mtn., 6200', 26 June, NEW colony for Tehachapi Mts. (RV). C. hoffmanni, 2 mi. s. Soda Springs, Placer Co., 26 Aug. (PT). C. h. segregata, 8 mi. n. Bartle, 26 June & Scott Camp Cr., Siskiyou Co., 27 June (JM, MS). T. leanira, Highland Way, Santa Cruz Mts., 6 June & west shore Lake McCloud, Shasta Co., 29 June (MS); larvae found on Cast foliolosa & martinii, slope s. end Monticello Dam, Solano Co., 22 Mar. (MS). T. l. wrighti, summit Elsinore Peak, 3575', Riv. Co., 3-4 June (RV) & Two Mile Hill, 2700', w. of Scissors Crossing, S.D. Co., 23 Oct., unusual fall flight (RWB, SD). Dymasia chara imperialis & E. chalcedona quino also in fall flights, Anza Desert area, (GF, FT), Sentenac Cyn., Two Mile Hill, etc. (RWB, SD). E. editha wrighti very common, Lower Otay Res., S.D. Co., 26 Mar. (OS) (Possibly favored by rains in late Feb. -- wrighti has been scarce in So. Calif. for many years). E. e. rubicunda larva near Collinsia tinctoria, vic Bower Cave e. of Coulterville, Mariposa Co., 11 Apr. (MS). E. e. aurilacus numerous, Iron Mt. 10 mi. e. Sly Park Res., Eldorado Co., 20 May, assoc/w Collinsia (RW). B. epithore, Smith Grade se. of Bonny Doon, S. Cruz Co., 29 May (RG, RL), 5 June (RG) & Kings Mt. rd. 1 mi. e. Skyline Blvd., S. Mateo Co., 28 June (RL). S. nokomis apacheana, Cottonwood Cyn., 9500', White Mts., Mono Co., 1 Sept. (SD). S. callippe liliana, nr Lake Pillsbury, Lake Co. (RW) & 2 mi. n. Angwin, Napa Co., 19 June (RL). S. adiaspe, Highland Way, S. Cruz Mts., 6 June, 4 July (MS) & Empire Grade above Ben Lomond, 16 July (RG). S. egletis, irene, hydaspe & arge sympatric, all common & fresh, Soda Springs, Placer Co., 26 Aug. (PT). S. leto, ne. of Mather, Tuolumne Co., 1, 29 Aug. (MS). N. ridingsii & O. chryxus stanislaus (even year!), ridge s. of Sonora Pass, Mono-Tuol. Cos., 24 July (MS). O. ivalida (even or "off" year!), summit Castle Peak, 9100', n. of Donner Pass, Nevada Co., 28 July (AS).

ZONE 2: PACIFIC NORTHWEST: OREGON TO BRITISH COLUMBIA AND MONTANA. Coordinator: Jon H. Shepard (JS). Contributors: Cris Guppy (CG), David F. Hess (DH), John Hinchliff (JH), Stanley Jewett, Jr. (SJ), Ted Pike (TP), David Threatful (DT)

GENERAL CONDITIONS: Spring and early summer weather normal with generally good collecting. July and August were extremely wet and collecting extremely poor, especially in southern B.C. and Washington.

MIGRATORY SPECIES: No report of cardui or plexippus. Only report of californica was from Nelson, B.C. in early Spring (JS).

MONTANA: Glacier Co., E. side of Marias Pas, July 26 (DT) xanthoides ** County Record. Madison Co., Mill Creek, SW

Tobacco Roots, el. 7800', July 10 (DH) palaemon ** County Record.

IDAHO: No report.

BRITISH COLUMBIA: Vancouver Island, Duncan, May 18 (CG, JS) probertius. Saanich Peninsula, May 19 (CG, JS) E. probertius, tullia insulana. Lower Mainland, C. Guppy and J. Shepard visited the Abbotsford Oak remnant May 21 to see if E. probertius was present. Results negative but may have been to early for mainland, see E. probertius under Washington. Okanogan Region, Botanie Mt. L.O. nr. Lytton, el. 5000', May 21 (CG, JS) sheridani common. Douglas Lake Rd., 30 mi. E. of Merritt, May 22 (CG) Euchloe nyantis (JS) Fresh pair of C.M. nelsoni found perched on Juniperus sp. No Thuja in this dry area. N.E. side Kalamalka Lake, nr. Vernon, May 22 (CG, JS) Callophrys affinis, C. sheridani. Johnstone Camp Gr., Hwy. 3, 2 mi. W. Bridesville, June 26 (JS) Lycaena nivalis. Hwy. 3, 2 mi. SE of Osoyoos, el. 1000', July 4 (JS) Satyrrium behrii (First record in Province since huge numbers of Philotes battoides. Kootenay Region, 2.5 mi. N. Rondel, June 15 (JS) pacuvinus. Northern Region, Pink Mt., Mi. 147, Alaska Hwy., July 1 & 14-15 (TP) machaon, eversmanni, Colias hecla, C. alexandra christina, C. philodice, Euchloe ausonides, occidentalis, atlantis, S. mormonia, polaris, B. improba, B. eunomia, B. napea, B. frigga, O. taygate, O. melissa, O. polixenes, Erebia epipsodea.

WASHINGTON: Clallam Co., Hurricane Ridge, Olympic National Park, July 28, (JH) Clodius hel** County Record, other species previously recorded were common. Pend Oreille Co., Ruby Cr., 1-3 mi. W. Blueslide, July 14 (JS) a large series of rutulus, no. P. glaucus. Skagit Co., Kwy. 20, 9.4 mi. N.E. Marblemont, June 27 (JS) E. probertius ** County Record.

OREGON: MOTHS; S. Jewett reports moths in normal numbers at his home in West Linn. H. euryalis found there for the second year.

BUTTERFLIES: Clatsop Co., Saddle Mtn., July 19 (JH) P. clodius, P. zelicaon, P. napi marignalis. Crook Co., Big Summit Prairie, June 4 (JH, SJ) Lycaena cupreus, E. editha edithana. Jackson Co., Applegate River, May 7 (JH) P. oreis, A. lanceolata, E. editha baroni, June 21-22 (JH) Atlopedes campestris ** County Record. O. nevadensis, Adelpha bredowii. Prospect, June 22 (JH) H. lindseyi, S. callippe elaine, Mt. Ashland, July 18 (SJ) S. callippe and S. egleis common on blossoms of Monardella oderitissima. Jefferson Co., Metolius River, June 5 (JH) C. Mitoura spinetorum, C. dumetorum P. indra, O. nevadensis, T. pylades. Camp Jefferson, Metolius R., June 18-19 (SJ) P. indra, P. multicaudata, S. callippe semivirida, I. mexicana nevada, E. pacuvius lilius. Joesophine Co., Jumpoff Joe Cr., June 20 (JH) Thessalia leanira** County Record, C. eurytheme eriphyle** County Record, Illinois R., June 20 (JH) Lycaena gorgon. Rough and Ready Botanical Wayside, nr. O'Brien, April 21 (SJ) A. sara julia, E. hyantis, P. sisymbrii. Klamath Co., Bly Mtn., June 23 (JH) H. lindseyi, L. cupreus, L. nivalis, O. nevadensis. Multnomah Co., Tanner Cr., July 2 (JH) P. acmon** County Record, C. palaemon, E. chalcedona. Wasco Co., Kahneeta Hot Springs, May 22 (JH) C. palla sterope, P. indra, T. pylades, Clear Lake, Sept. 19 (JH) H. grunus, L. mariposa, P. oreas. Deschutes River, Sept. 19 (JH) A. mormo.

ZONE 3: (ROCKY MOUNTAIN REGION): ALBERTA, WYOMING, UTAH, COLORADO and NEW MEXICO. Coordinator: R.E. Stanford (for Don Eff, temporarily unable to serve due to family illness). Contributors: Charles D. Bird (CDB), J. Brock (JB), Karolis Bagdonas (KB), J.W. Case (JWC), Don Eff (DE), Scott Ellis (SLE), C.D. Ferris (CDF), David Ferguson (DF), Mike Fisher (MF), L.P. Grey (LPG), Ken Hansen (KH), O.O. Otto (OOO), J.A. Scott (JAS), R.E. Stanford (RES), and J. Weintraub (JW). Professor Bagdonas wishes to acknowledge the aid of his students Laurie Draeger, Ira Heller and Scott Treatman, and whose observations are included with his own (KB).

GENERAL CONDITIONS: A mild, dry winter was followed by a cool, sunny, dry spring and a hot, dry summer in most portions of the region. Only northwest Alberta (JWC) and southwest New Mexico (CDF) enjoyed normal or increased precipitation. Most contributors reported poor conditions for Lepidoptera throughout the region, but KB and his colleagues found moth collecting excellent in Colorado in July. Fall and winter were also extremely dry in nearly all parts of the region.

ALBERTA: Southern portions were dry and poor, but central and northern portions had normal or even very wet conditions. The two reports are both from virtually unknown portions of the Province, and all species listed are recapitulated here as they nearly all represent extensions of known range. In mixed boreal forest 36 miles ESE of Lac la Biche, 6-7 July, CDB found 14 species as follows: E. persius, C. palaemon, P. glaucus canadensis, C. gigantea, C. interior, L. dorcas, P. saepiolus, L. argyrognomon scudderii, E. amyntula, G. lygdamus couperi, L. arthemis rubrofasciata, P. tharos, B. selene, and S. atlantis intermediate or a mixture of atlantis atlantis and atlantis hollandi. In the Hay River area of extreme northwestern Alberta, 50 miles WNW of High Level, JWC observed 21 species (10-25 July except as noted to the contrary): T. pylades, P. coras, P. glaucus canadensis, P. rapae (9 Sep), P. napi oleracea, C. eurytheme, C. philodice eriphyle (3 Sep), P. napi christina, C. interior, C. gigantea, L. dorcas, P. saepiolus, L. argyrognomon scudderii, E. amyntula albrightii, G. lygdamus couperi, L. arthemis rubrofasciata, N. antiopa (4 Sep), N. milberti (9 Sep), P. satyrus (9 Sep), P. faunus (4 Sep), and P. tharos.

WYOMING: The only full report is that of CDF, who found conditions generally poor to dismal. Early species flew fairly well in the Pole Mtn. region of Albany County, including C. sheridani and I. polios 5 May, I. schryveri 14 May, I. eryphon 18 May, and I. augustinus iroides 31 May - 7 Jun; the last of these species had not been seen in the region for many years previously. Unusually cold weather in mid-June was followed by severe drought in last summer and fall. Speyeria, Colias, Papilio and Hesperia species were severely down in numbers. Nineteen county records were noted, 18 by various members of the UW Ent. Dept. verified by CDF, and one by LPG verified by RES. Some of these, together with what few other significant records were received, are listed here in roughly dos Passos order (COUNTY in ALL CAPITAL LETTERS denotes new county record): P. ruralis Granite Creek, Teton COUNTY, 14 July (LPG). P. libya

lena, W. of Point of Rocks, Sweetwater COUNTY, 19 July. Y. rhesus, nr. Gillette, Campbell COUNTY, 1 June. H. comma harpalus, W. of Point of Rocks, Sweetwater COUNTY, 20 July. P. mystic dacotah, Lost Springs, Converse COUNTY, 21 June. S. melinus atrofasciatus (?franki), nr. Gillette, Campbell COUNTY, 18 May. S. sylvinus nr. desertorum (taxonomy in need of clarification), W. of Point of Rocks, Sweetwater COUNTY, 19-21 July. L. rubidus, nr. Newcastle, Weston COUNTY, 19 June, and W. of Point of Rocks, Sweetwater COUNTY, 19 July. L. xanthoides dione, Ataddin, Crook COUNTY, 20 June. G. piasus daunia, nr. Gillette, Campbell County, 1 June. E. anicia bernadetta, nr. Gillette, Campbell COUNTY, 18 May and 1 June. S. egleis albrighti, Shell Canyon, Big Horn County and State Record, 30 July (CDF). CDF noted very poor light-trapping for moths in 1976, taking only common Noctuids in anywhere near normal numbers; all desirable species were absent.

UTAH: Three contributors offered one species record each, and a fourth was determined by RES from LPG material examined. No data from Utah people, and no reports of general conditions there. P. draco, 7-mile Creek, Sevier COUNTY, 26 July (LPG - LATE for a fresh male). T. leanira alma, 2 miles E. of Orem, Utah COUNTY, 2-4 June, and 8 miles N. of Beaver, Beaver COUNTY, 6 June (both JB). S. nokomis nokomis, various localities W. of Roosevelt, Duchesne County, mid-Aug (DE). C. meadi mexicana, Red Canyon, Dixie NF, Garfield COUNTY, 2 Aug. (JW).

COLORADO: Nine reports for 1976, plus additional records based on material sent to RES for determination, resulted in very good coverage of the State. KB and associates made extensive observations of the foothill and mountain fauna, including moths; DF, JAS, RES and Marc Epstein continued their studies of the prairie diurnals, contributing several eastward range extensions of foothill species, while SLE made additional new observations in the oil-shale country of northwestern Colorado.

GENERAL CONDITIONS: It was a year of ups and downs in Colorado, with average snowpack, early spring, and hot dry summer interrupted with occasional heavy rains and local disastrous floods. The 31 July Big Thompson Canyon flood made worldwide headlines, cost 139 human lives and untold property damage, and terminated for the season an extensive Lepidoptera survey being conducted in the area by KB and associates (see 20 Dec. 76 issue of News Lepid Soc, page 6, for commentary from one of the lepidopterists in that party). Reconstruction has begun by humans there, and it is hoped that the students from Adelphi will return to study nature's reconstruction also: with the 1976 data as a baseline, how long will it take for populations of insects to become re-established; what changes will be noted in relative abundance of species? Collecting reports from before the flood indicated a banner year for such alpine genera as Oeneis, Erebia, Colias and Boloria (KB, 000). Very few "exotic" or migratory species were reported, in contrast with the previous year. After the flood, hot and dry conditions prevailed, with very poor collecting in late summer and fall. The best spots in 1976 included The Larimer County foothill canyons, 10 miles N. of Newcastle (Garfield County), Browns Park (Moffatt County), Maroon Lake (Pitkin County), Weston Pass (Park County), Brainard Lake (Boulder County), 11 miles E. of Victor (Teller Co.), Camp Id-Ra-Ha-Je (Gunnison County), Loveland Pass (Clear Creek Summit County line), all KB party; Bonny Reservoir (Yuma County) and Lefthand Park (Boulder County), DE; 1 mile E. of Somerset and E. Fork Minnesota Creek (Gunnison County), and various spots on Roan Plateau (Rio Blanco County), SLE; Lewis Canyon, nr. Peetz (Logan County), DF; nr. Cotopaxi (Fremont County), MF; Lookout Mtn. (Jefferson County) and East Portal (Gilpin County), 000; Pawnee Grasslands (Weld County), JAS; Aspen region (Pitkin County), and various small canyons in Elbert County, RES; Maroon Trail and Lake (Pitkin County), JW, RES, KB. A species count within a 7 1/2 mile radius in Gilpin County on 5 July produced only 45 butterfly species, compared with 62 the year before (RES).

BUTTERFLIES: No State records; 41 County records, of which 19 constitute range extensions within Colorado. These, together with records of choice species, life history and conservation notes are here listed in approximately dos Passos order. COUNTY in ALL CAPITAL LETTERS is new county record. Temporal records (EARLY; LATE), altitudinal records (HIGH; LOW), and directional range extensions (N,E,S,W,NE,SE,SW,NW) are also noted: E. clarus clarus, various spots in northern Elbert COUNTY, 26 June, associated with Glycyrrhiza lepidota (RES and Marc Epstein). E. horatius, Jarre Canyon, Douglas Co., 2 May (MF) and nr. Cotopaxi, Fremont Co., 25 July (MF). E. persius fredericki, Piney Creek, Arapahoe Co., 14 May, associated with Thermopsis (RES); Pawnee Grassland, Weld COUNTY and NE RANGE EXTENSION in Colorado, 3 June (JAS) and Piney Creek, Arapahoe COUNTY, 20 June (RES). H. Y. rhesus, 8 miles N of Brush, Morgan COUNTY, 3 June (Glenn Scott, fide JAS). P. coras and P. mystic dacotah becoming established in residential yards and gardens, Littleton, Arapahoe Co., late May through mid-june (MF). P. origines rhena, Piney Creek, Arapahoe COUNTY and Ronk Creek, Elbert COUNTY, 26 June, both E. RANGE EXTENSIONS in Colorado (RES and Marc Epstein). P. taxiles oviposition observed on Poa pratensis and Agropyron repens at Fort Collins, Larimer Co., (SLE). A. vTerecki, 1 mile E. of Somerset, Gunnison Loveland Pass, 17 July (KB). B. philenor philenor taken in a yard in Logan COUNTY, a NE RANGE EXTENSION in Colorado but a non-breeding occasional here (Keith Williamson, fide DF). P. polyxenes asterius, Denver VA Hospital parking lot, 12 Apr. (EARLY) (RES). P. "nitra", Jarre Canyon, Douglas Co., 1 May (EARLY) and Blackman Mdws Trail, 8900' elev. Gilpin COUNTY and probable ALTITUDINAL record, 29 May (RES). P. glaucus, in Logan COUNTY 4-H collection (det DF). P. rutulus, E. Maroon Trail, 9400' elev. Pitkin Co., 29 July (LATE) (JW). P. multicaudatus, oviposition on Prunus virginiana, roadsides in northern Elbert Co., 26 June (RES and Marc Epstein), on Prunus americana, Flagstaff Mtn, Coulter Co., 17 July (RES), and on Fraxinus pennsylvanica, Fort Collins garden (larvae found, SLE). P. cresphontes, in Logan COUNTY 4-H coll'n (det DF). P. beckeri, Glenwood Airport, Garfield Co., 11 June (RES); Browns Park along Green River, Moffatt Co., 15 June (KB), and at Maroon Lake, 9600' elev. (?ALTITUDINAL RECORD shared with Bob Price in previous year), Pitkin Co., 8 July (KB). E. ausonides coloradensis, Pawnee Grassland, Weld COUNTY and NE RANGE EXTENSION in Colorado, 3 June (JAS). A. sara julia, Gregory Canyon, Boulder Co., 22 Apr. (EARLY) (RES). C. alexandra alexandra, Pawnee

Grassland, Weld COUNTY and NE RANGE EXTENSION in Colorado, 3 June (JAS). *C. scudderi scudderi*, Homestake Creek 9000' elev. Eagle Co., 26 June (EARLY) (W.S. Hammond, det RES); east Weston Pass 10,000' elev., Park Co., 11 July (KB); common at Brainard Lake 19 July and Niwot Ridge 25 July, Boulder Co. (KB). *Z. cesonia cesonia*, Lewis Canyon nr. Peetz, Logan COUNTY, 8 July, several specimens (DF). *P. sennae eubule*, Littleton, Arapahoe COUNTY, male sight record 4 July and female taken 8 Aug. (MF). *E. nicippe*, Happy Canyon, Douglas COUNTY, single specimen 5 July (KB). *E. mexicana*, Golden Gate St. Park, Gilpin Co., single specimen 5 July (RES - cf common previous year). A nais virtually absent again in Boulder and Jefferson Co. spots (RES). *C. affinis affinis*, Aspen, Pitkin Co., 9 June, extremely uncommon (RES). *C. apama homoperplexa*, Lookout Mtn, Jefferson Co., 7 June (RES); nr. Elbert, Elbert Co., 26 June (RES); nr. Nederland, Boulder Co., in sagebrush habitats where it behaved like *affinis* on West Slope, 27 June (RES). *C. sheridani sheridani*, Red Rocks Park, Jefferson Co., on schedule with *I. mossi schryveri* 3 Apr. (RES); Lefthand Creek, Boulder Co., 10 Apr. (MF). *M. siva siva*, Stove Prairie, Larimer Co., unusually common 31 May thru 13 June (KB); Pawnee Grassland, Weld COUNTY and NE RANGE EXTENSION in Colorado, 3 June (JAS); taken with *I. eryphon eryphon*, Frying Pan River 4 miles above Basalt, Eagle COUNTY (both species), 10 June (RES). *I. polios obscurus*, Golden Gate St. Park, Gilpin Co., 29 May (RES). *S. fuliginosum similuna*, Blue River Cpgrd, Summit Co., 10 July (RES); Cathedral Bluffs at Stake Spgs. Draw, 8500' elev., Rio Blanco COUNTY and SW RANGE EXTENSION in Colorado, 17 July (SLE). *S. saepium provo*, Flagstaff Mtn, Boulder Co., very common 17 July (RES). *S. liparops aliparops*, Cherry Creek, Denver Co., 26 June (EARLY) (RES); Fort Collins, Larimer Co., dwarf taken in light trap, 26 July (KB). *S. acadica montanensis*, Cherry Creek, Denver Co., 18 July (RES). *S. sylvinus putnami*, W. of McClure Pass (DE) and 12 miles W. of Kebler Pass (KB), Gunnison Co., 25 July (DE notes habitat nearly wiped out by new highway construction). *L. rubidus* abundant at Aspen, Pitkin Co., 28-30 July (JW); also common in Boulder, Teller, Pitkin and Gunnison Counties (KB). *L. heteronea gravenotata*, nr. Elbert, Elbert Co. (slight E RANGE EXTENSION), 26 June (RES and Marc Epstein). *E. isola alce*, several records including Mt. Goliath 12,500' elev., Clear Creek Co., 12 July (KB). *I. acmon*, 8 miles N. of Brush, Morgan COUNTY, 3 June (Glenn Scott, fide JAS); form *pseudolupini* Snowmass Creek, Pitkin COUNTY, 9 June (RES) and Mt. Audubon, Boulder Co., 22 July, worn (KB). *I. icaroides lycea*, Pawnee Grassland, Weld COUNTY and NE RANGE EXTENSION in Colorado, 3 June (JAS). *P. enoptes ancilla*, nr. Thomasville, Eagle COUNTY, 10 June (RES); Glenwood Airport, Garfield COUNTY, 11 June (RES); nr. Elbert, Elbert Co. (slight E RANGE EXTENSION), 26 June (RES, Marc Epstein); Flagstaff Mtn., Boulder Co., fresh specimens 17 July (LATE) (RES). *P. battoides centralis*, common at Cotopaxi, Fremont Co., 25 July (MF). *P. rita emmeli* NOT SEEN, but its larval host *Eriogonum leptocladon* was seen growing on isolated dunes along Montezuma Creek, Montezuma Co. in July (SLE); collectors should look there in late August or early September for *emmeli*, which would be a COLORADO STATE RECORD! *G. piasus daunia*, more common than usual, Clear Creek Canyon, Jefferson Co., 6-7 June (RES) and Rist Canyon, Larimer Co., 15-17 June (KB); nr. Elbert, Elbert Co. (slight E RANGE EXTENSION), 26 June (RES, Marc Epstein). *E. comyntas*, Pawnee Grassland, Weld COUNTY, 3 June (JAS). *C. argiolus cinerea*, female of the uncommon second "generation" phenotype, Coal Creek Canyon, Jefferson Co., 7 June (RES); *C. argiolus pseudargiolus* fm *marginata*, nr. Ruedi Reservoir and nr. Thomasville, Eagle COUNTY, 10 June (KB) (NOTE: These intermediate elevation West Slope populations are indistinguishable from eastern *pseudargiolus*, and in many seasons show tendencies toward *lucia*). *N. californica*, Jarre Canyon, Douglas Co., 2 May (MF). *P. hylas*, along various streams in Eagle, Garfield and Pitkin Counties, quite worn, 10 June (RES); totally absent in usual Douglas Co. haunts in late summer due to extreme drought (RES). *P. zephyrus*, Pawnee Grassland, Weld COUNTY and NE RANGE EXTENSION in Colorado, 3 June (JAS). *P. pallida barnesi*, along several streams in Eagle and Garfield Counties, 11 June (RES). *C. nycteis drusus*, Glenwood Canyon, Garfield Co., 11 June (RES); along several streams in Boulder and Gilpin Counties, 27 June (RES). *C. palla calydon*, nr. Nederland, Boulder Co., Common 27 June (RES); *C. palla flavula* and *C. acastus* SYMPATRIC without apparent intergradation, Frying Pan River 4 miles above Basalt, Eagle Co., 10 June (RES; paper in preparation by MF and CDF). *E. anicia capella*, nr. Elbert, Elbert COUNTY and E. RANGE EXTENSION, 26 June (RES, Marc Epstein); *E. anicia brucei*, nr. Climax, Lake Co., 10 July (RES) and common thruout the high country of several counties (KB). *E. anicia bernadetta*, Beaver Creek, Grand Co., 11-19 June (DE); *E. editha* nr. *alebarki*, same locality, flying about a week earlier (DE). *B. selene tollandensis*, Tolland, Gilpin Co., 5 July, first TOPOTYPE taken in several years; work in progress to set aside a small bog as a preserve (RES). *B. eunomia caelestis*, Caribou Park, Boulder Co., 22 June (EARLY) (RES). *S. egleis secreta* and *S. atlantis electa* and *nikias sympatric* at No Name Creek, Garfield Co., 11 June (EARLY) (RES). *B. frigga sagata*, Chapman Cpgrd, 8600' elev., Pitkin COUNTY and EARLY, 10 June (RES). *S. aphrodite aphrodite* or intermediate to *ethne*, Lewis Canyon nr. Peetz, Logan COUNTY and NE RANGE EXTENSION in Colorado, 8 July (DF); *S. aphrodite byblis*, west of McClure Pass, Gunnison Co., flying poorly due to drought, late July (DE). *S. cybele cybele*, large fresh female taken, Julesburg, Sedgwick COUNTY and NE RANGE EXTENSION in Colorado complementing discovery of the species in the Bonny Reservoir area last year, 9 July (DF); *S. cybele charlotti*, nr. Aspen, Pitkin Co., 28-30 July (JW) and west of McClure Pass, Gunnison Co., late July (DE). *A. vanillae* taken in backyard by William Zemanek, Sterling, Logan COUNTY, date(s) unknown. *M. cymela cymela*, large colony at Bonny Reservoir, Yuma Co., late June (DE). *C. tullia ochracea*, nr. Elbert, Elbert COUNTY and slight E RANGE EXTENSION, 26 June (RES, Marc Epstein). *C. meadi alamosa*, N of Moffatt, Saguache Co., 7 Aug., common and fresh (MF). *N. ridingsi dionysus*, Glenwood Canyon, Garfield Co., 11 June, just emerging (RES); *N. ridingsi ridingsi*, nr. Elbert, Elbert Co., 26 June (RES, Marc Epstein). *O. uhleri uhleri*, Gregory Canyon, Boulder Co., 22 Apr. (EARLY) (RES); *O. uhleri reinthali*, Maroon Lake, Pitkin COUNTY, 8 July, (KB), and S of Climax, 10,400' elev., Lake County, 11 July, especially dark phenotype (RES). *O. jutta reducta*, Hideaway Park (RES) and nr. Fraser (DE, Dave Parshall, Art Detmar), both Grand Co., early to mid-July. *E. theano* nr. *ethela*, Niwot Ridge Trail above Lefthand Park, Boulder Co., 21 July (000) and 25 July (KB), very common for first time in several years.

MOTHS: KB provided detailed notes on 90 species, including Saturniidae, Sphingidae, Notodontidae, Thyatiridae, Noctuidae, Lasiocampidae, Geometridae, Agaristidae, Syntomidae and Arctiidae--by far the finest compilation of data on Colorado moths for a single season ever. Those wishing additional information on these, or on the several hundred other species, including many fine records of Microlepidoptera, are invited to write to KB directly: Professor Karolis Bagdonas, Dept. of Biology, Adelphi University, Garden City, New York 11530. All records in the following abstract of species are from his list except as noted otherwise (1 record each from SLE and RES!).

STATE RECORDS: at least two, perhaps others pending further study: *Agapema homogena* (Saturnidae), Boulder Canyon, Boulder Co., 21 June, leg. Ira Heller. *Darapsa myron* (Sphingidae), Laporte, Larimer Co., 20 July, leg. Sylvia Bagdonas.

COUNTY RECORDS: a great many, partially included in the following list and to be published by KB; counties are not

capitalized in the list because it is unknown which are new records due to insufficient data from prior years. H. cecropia, hundreds of records from Denver, Jefferson, Arapahoe, Adams, Weld, Boulder and Larimer Counties, mainly June. H. gloveri, foothill canyons of Boulder and Larimer Counties, mid-late June. A. polyphemus, Boulder and Moffatt Counties, mid-June. A. io, foothill canyons of Larimer Co., late June. C. pandora, foothill canyons of Larimer and Boulder Co's., mid-late June. H. eglanterina annulata, hilltop near Aspen airport, Pitkin Co., 9 June (EARLY) (RES). H. hera hera, nr. Rand, Jackson Co., 7-8 Aug. H. nuttali nuttali, Corral Gulch, Fed OST C-a, Rio Blanco Co., 17 July, very common following larval defoliation of Symphoricarpos oreophilus in late 1975 (SLE); nr. Horsetooth Reservoir, Larimer Co., late Aug - early Sep. H. nutalli ?uniformis, W of Kebler Pass, Gunnison Co., 24 July. SPHINGIDAE: P. modesta, Boulder and Larimer Co's., mid-late June. S. gordius, Larimer and Moffatt Co's., June. S. perelegans, Larimer Co., late June. S. chersis, Larimer and Alamosa Co's., late June. S. drupiferarum, Fort Collins, Larimer Co., mid-June. S. ashti, Larimer, Boulder, Moffatt, Weld, Pitkin, Routt Co's., late June - early July. P. myops, Boulder and Larimer Co's., late June - early July. P. excaecatus, Larimer Co. canyons, late June. S. cerisyi, Boulder, Larimer, Garfield, Moffatt, Pitkin, Chaffee, and Park Co's., late June - early July. S. jamaicensis, Laporte, Larimer Co., late June - early July. H. lineata, inexplicably rare in 1976. H. gallii, single taken Rist Canyon, Larimer Co. 28 June. E. achmon, Larimer Co., late June - early July. C. undulosa, Larimer and Boulder Co's., June-July. H. senta, lower Rist Canyon, Larimer Co., mid-June. M. quinquemaculata, common in Larimer and Boulder Co's. M. sexta, larvae in Boulder Co., Aug. NOTODONTIDAE; N. gibosa, H. bilineata, H. lunata, O. elegans, P. rimosa, I. apicalis, I. albosigma, I. brucei, G. septentrionis, G. severa, H. occidentalis gigans, H. surenia, S. unicornis, S. ipomoeae, S. concinna, O. palida. THYATIRIDAE; P. cymatophoroides, H. gloriosa. CATOCALA species; relicta clara, parta, neogama, unijuga, luciana somnus, amestris, amatrix selecta, semirelicta pura, briseis, groteiana, faustina, stretchi, ultronia, aholibah. LASTIOPIDAE; E. americana. GEOMETRIDAE; B. cognataria, P. mexicanaria, S. montanaria. AGARISTRIDAE; A. maccullochii. SYNTOMIDAE; L. grotei. ARCTIIDAE; H. miniata, P. parthenos, H. labecula, H. maculata, H. tessellaris, B. trigona, A. picta, A. ambigua, T. permaculata, N. brucei, I. isabella, D. virginica, E. oregonensis, P. plantaginis, H. aurantiaca, A. quenseli, A. williamsi, A. figurata, A. blakei.

NEW MEXICO: Of three reports, that of CDF is the only substantial one. Therefore, all records listed are his unless otherwise noted (two for SLE, one for KH). No reports from New Mexico residents this year. Weather mainly mild and dry, except that Grant County had moderately heavy summer rains, producing good collecting especially for Hesperioidea. No State Records, but apparent Grant COUNTY records are A. texanae and E. afranius, both taken by CDF in early July. The only MOTH record is that of KH, who found about 40 larvae of A. zephyria on Salix sp nr High Rolls. SLE found E. Brizo and M. streckeri relatively common in sandhills with Yucca and scrub Quercus in Eddy County, 6 Apr. in Cherry Creek Canyon, north of Silver City, Grant Co., 305 July, CDF noted A. cellus, E. afranius, P. polingi, A. nereus, A. oslari, A. cassus, A. exoteria, C. apama apama among other species. Mimbres River Valley, Grant Co., same dates: P. alcestis oslari, A. halesus corcorani, T. theona thekla, M. rubricata cheneyorum, among others. Water Canyon, Magdalena Mtns., Socorro Co.; O. edwardsi, C. lacinia ssp, T. leanira fulvia, 9 July. At 10,000' elev. in Sangre de Cristo Mtns. NE of Questa, 10 July; P. phoebus pseudorotgeri, P. napi mogollon, O. chryxus chryxus among others. E. quaderna was common and fresh on the east side of the Black Range, Sierra Co., 11 July, indicating at least 2 generations in that area.

ZONE 4: GREAT PLAINS; SASKATCHEWAN, MANITOBA, SOUTH DAKOTA, NEBRASKA, OKLAHOMA, and TEXAS. Coordinator: H.A. Freeman, Contributors; P.J. Conway, Robert Godefroi, Frank R. Hedges, Ronald R. Hooper, Edward C. Knudson, Robert L. Langston, Pete Loy, James C. Parkinson, Mike A. Richard, and N.G. Seaborg.

GENERAL CONDITIONS: In Saskatchewan and Manitoba the season started early with a number of good species being taken, however during the summer, dry conditions somewhat slowed down general collecting. In the rest of zone 4 collecting was not as good as last year, particularly in Texas.

SASKATCHEWAN: Ronald R. Hooper reported good early collecting with two range extensions on butterflies. Euchloe olynpi rosa was taken at Dundurn in May by Edgar Sullivan (Saskatchewan's farthest north record); and Plebejus acmon taken at Lebret by R. Hooper on June 21 (Saskatchewan's farthest north-east record). The following species of moths which were taken in south-eastern Saskatchewan the first week in June may be new records for the province: Stenomoma schlaegeri, Nerice bidentata (Roche Percee, June 4), Heterocampa guttivitta, Heterocampa umbrata, Charadra deridens (Maryfield, June 1), Perigea videns, Balsa malana, Argyrostromis anilis (Glen Ewen, June 3 Roche Percee, June 4 Tantalton, June 22), Zale galbanata (Roche Percee, June 4), and Bomolocha albalinealis (Maryfield, June 1).

MANITOBA: Robert Godefroi reported that he spent July and part of August in Churchill with the following species of butterflies being collected: Erebia rossi ornata, Colias gigantea, C. palaeno, C. hecla, C. nastes, Plebejus aquilo, Lycaena dorcus, Pieris occidentalis, Boloria selene atrocotalis, B. frigga, B. titania, and B. eunomia. No specimens of Boloria polaris, B. freija, or B. chariclea were seen.

SOUTH DAKOTA: P.J. Conway and N.G. Seaborg reported as follows: 6 July, Coteau Prairie, 19 miles east of Watertown on hwy. 212, Devel Co., the following species were collected; Hesperia dacotae, 1 fresh female taken, two other specimens sighted; Oarisma powesheik, common and fresh; Speyeria idalia, very common, fresh males only.

NEBRASKA: Robert L. Langston reported from Brown Co., 8 mi. SW of Johnstown, Sept. 5-25 the following species of butterflies were collected: Polites coras (new county and northerly extension), Ancyloxypha numitor, common (new county and western extension), and Plebejus acmon lutzi males abundant at mud (new county and eastern extension). NEW BROWN County records also include: Lycaeides melissa; Boloria selene nebraskensis numerous in Sept. at the Johnstown loc.; Euptoieta claudia; worn female Speyeria idalia; a single female Polygonia comma, Sept. 16; and Nathalis iole, Sept. 11-12 Moths collected at the same general time and place were: Celerio lineata, Scepsis fulvicollis common, Erastris carneola many at blacklight, Catocala luciana nebraskae, and Haematopis grataria.

OKLAHOMA: Pete Loy reported the following: Collecting season earliest of the last five years. First capture 25 Feb., Claremore, Rogers Co., a male C. eurytheme. 27 March, Claremore, E. gemma, A. andria, A. midea (few females), and F. tarquinius all seen and collected. On 2 April, saw P. glaucus, G.m. marcellus, and B. philenor. 15 April, Honor Heights Park, Muskogee Co., captured C.g. gryneas, and I. niphon perched on Red Cedar. On 10 May, Saline Creek, 10 miles east of Salina, Mayes Co., captured first E.h. sosybius (quite worn). Summer quite warm with the usual species below normal numbers. P. rapae was extremely abundant with 15 per hour sightings in June through July. 23 Sept., Claremore, Rogers Co., began the fall migration of D. plexippus. A sighting of a female S. idalia flying with them was of particular interest because this species has not been observed this far south in Oklahoma before. Also on this data a colony of E. dion with 4-6 members was observed and one male was taken. Moths: 27 March, Claremore, Rogers Co., A. luna, A. octomaculata, and S. abbotii (first capture of abbotii). May extremely good for H. cecropia, A. luna, and A. polyphemus. 9 May, Interstate 44, Lincoln Co., infestation by second instar H. maia on Blackjack Oak quite heavy. First capture of D. pholus noted on 18 Aug., in Claremore.

TEXAS: Mike A. Rickard and Edward C. Knudson reported the following: Papilio ornithyon, Pecos Co., 3 July; Terrell Co., 3 July; Presidio Co., 4 July. Aphrissa statira, Jeff Davis Co., 4 July. Marpesia petreus, Presidio Co., 4 July. Hesperia woodgatei, common, Travis Co., 9 October. Frank R. Hedges collected in the Big Bend National Park, 22 June, and listed the following: Chisos Basin, 40 species collected with the most important ones being; Autochton cellus, Codatractus arizonensis, Apodemia chisosensis, Ministrymon leda, and Erora quaderna. He collected 17 species of butterflies at Rio Grande Village with some of the best listed as; Pholisora alpheus, Apodemia palmeri, A. mormo, and Asterocampa leilia. In the Santa Elena Canyon the following were collected: Kricogonia lyside, Hemiargus isola and Apodemia palmeri. Hedges reported the capture of a specimen of Oligoria maculata at Sealy, Austin Co., which is about as far west as it normally goes. James C. Parkinson reported a very complete listing of species collected in three counties. Due to lack of space all species will not be listed. Bell County: 63 species of butterflies were collected with perhaps the following being the best ones listed; Phoebis agarithe maxima, Siproetea stelenes biplagiata, Pantheides m-album, and Chioides zilpa. The following moths were recorded from Bell County: Actias luna, Cressonia juglandis, Darapsa pholus, and Hemaris diffinis. From Coryell County 36 species of butterflies were recorded with the following being perhaps the best: Phoebis agarithe maxima, Celotes nessus, and Amblyscirtes eos. From Williamson County 57 species of butterflies were recorded with the following being the best: Adelpha bredowii eulalia, Pantheides m-album, Nastra julia, and N. neamathla. The report from Parkinson on moth collecting in Williamson County was very extensive however all species reported will be listed. The Springidae were: Sphinx dollii, S. gordius, Manduca quinque-maculata, M. rustica, M. sexta, Darapsa pholus, D. myron, Erinnyis ello, E. obscura, Pachysphinx occidentalis, Eumorphia vitus, E. pandorus, Amphion nessus, Hyles lineata, Hemaris diffinis, Ceratonia undulosa, C. hageni, Cressonia juglandis, Smerinthus jamaicensis, Paratreia plebeja, Agrius cingulatus, and Xylophanes tersa. Other moths were: Eacles imperialis, Automeris io, Anterea polyphemus, Actias luna, Erebus odora, Catacola amatrix, C. neogama, C. Maestosa, C. coccinata, C. micronympha, C. ilia, C. ultronia, C. amica, C. verilliana, C. gisela, C. delilah, C. herodias, C. censors, and C. agrippina.

ZONE 5: EASTERN-MIDWEST: MISSOURI to MINNESOTA to MICHIGAN. Coordinator: M.C. Nielsen. Contributors: G. Balogh (GB), R. Bracher (RB), C. Burkhart (CB), P. Conway (PC), C. Covell, Jr. (CJr.), P. Faber (PF), L. Ferge (LF), D. Hess (DH), R. Huber (RH), I. Leeuw (IL), R. Letsinger, L. Martin (LM), G. Meszaros (GM), W. Miller (WM), M. Nielsen (MN), J. Parkington (JP), P. Russell (PR), J. Schwartz, N. Seaborg (NS), Y. Sedman (YS), W. Sieker (WS), A. Showalter (AS), E. Shull (ES), J. Weintraub.

Other Collectors Cited: R. Bartelt (RB), A. Brownell, C. Cook (CC), C. Cornett, C. Covell III (CIII), D. Day (DD), R. Dana (RD), R. Fellows, L. Gibson (LG), J. Hyatt (JH), W. Johnson (WJ), H. King (HK), L. Koehn (LK), W. Linscheid (WL), E. Ordway (EO), J. Perona (P), J. Sloten (JS), D. Winter.

GENERAL COMMENTS: Fewer reports were received, although some reported for several collectors in their states. The season started early for many and most experienced a very dry summer with the season ending earlier than usual, especially in northern areas. There were few southern strays reported in northern areas; no migrations were observed anywhere in the region. A. lineola continued to spread in the region and remained in high numbers in many areas. P. protodice was reported in a few localities but remains scarce in others. Hesperidae appeared in good numbers throughout, especially E. bimacula. Spreading suburbia, industrial expansion and increasing use of all-terrain vehicles continue to erode favorite lepidoptera habitats. Yet, discoveries of new butterfly colonies continued in most areas; however, moths are NOT being adequately reported! A total of 150 butterfly species were reported from the region—a reduction from last year. An asterisk (*) indicates a new county record and/or range extension.

MISSOURI: Letsinger reported capturing his first H. cecropia female and successfully reared over 100 to maturity on apple, wild and domestic plum and wild black cherry. His choice records were: L. marina (3rd state record), L. pholus, A. betulae, P. rhodarialis, S. scituia.

STATE RECORDS: C. floridensis, A. egena and W. otho (typical). 1975 state records determined too late for reporting last year were: L. imbuna, erecta, E. tristigmata, P. necopina, M. cellaris and H. obliqualis.

KENTUCKY: Covell, Jr., reporting for 20 collectors, found that after a mild winter and an early spring, much of April was cool and wet. The state faunal survey records now stand at 1,676 species! All agreed that collecting was exceptionally good in 1976! Interesting spring species (28) collected in Menifee Co., during 16-24 April, included: A. aesculapius, A. cellus (early record), P. virginensis, A. midea, C. henrici, niphon, G. lygdamus and C. ebenina. Covell Jr. and Winter made a '4th of July' butterfly count in Oldham Co. on 30 June, recording 31 species, including C. borealis, S. edwardsii, calanus falacer, H. titus mopsus, C. pegala. Soc. of Ky. Lepid. met on 24 July and collected in McCracken, Ballard and Hickman Co. a recording 31 butterfly species including P. cresphontes, G. marcellus, P. sennae eubule, L. phlaeas americana, L. anhedon and eurydice, and numerous moths, including 2 state records. Many moths

were taken at a number of state parks by Cornett and Brownell at UV and in malaise trap. Fellows had good results with *Catocala* in Sept. using light and sugar.

OTHER CHOICE BUTTERFLIES: *P. zabulon*, 11, 12 Sept. Meade Co.; *A. delaware*, 7 Sept., Jefferson*Co. (Cjr), *W. egeremet* 11, 12 Sept., Meade Co.; *H. leonardus*, 11, 12 Sept. Meade Co.; *A. cellus*, 9 June, Menifee Co. (AS); *E. lucilius*, 20 June, Trimble Co. (LG, AS); *Calephelis* sp. (1), 11 Sept., Meade Co. (LG); *P. m-album* (f), 24,25 July, Pine Mt. (LK); *E. laeta*, 24 April (im,if, AS), 10 July, Harlan Co.; *F. tarquinius*, 24, 25 July, Pine Mt. (LK); *C. gorgone*, Laurel Co. (LK); *E. phaeton*, (f), 5 July, Pineville-Middleville (JH); *B. bellona*, 25 Sept. (CIII); *S. aphrodite*, 9 June, Menifee Co. (AS); *S. cybele*, 11, 12 Sept. Meade Co.; *S. diana*, 10 June - 25 July, Bell, Knox, McCreary, Wayne, Whitley Co.s (CC,JH,LK); *L. anthedon*, 9 June, Menifee Co. (AS), 11, 12 Sept., Meade Co.; *L. creole*, 9 June, Menifee Co. (AS); *C. gemma*, 11, 12 Sept., Meade Co.

WEST VIRGINIA: No reports.

OHIO: Only two reports, Martin experienced poor weather conditions in northern Ohio with cooler than normal season which ended about a month sooner than usual. *D. plexippus* was down, with no discernible migratory movements; Lycaenidae and Hesperidae were down and other butterflies were about normal. INTERESTING RECORDS: an unusual warm April forced *B. bellona* to appear on 18 April; *E. dukesi*, 26 July, Huron*Co.; *A. lineola* has become the most common skipper in the field. Also reporting from northern counties, Meszaros recorded *E. nicippe*, 26 April, Strongsville, Cuyahoga*Co.; *E. laeta* 18 July in beech forest, Brecksville, Cuyahoga*Co.; *S. caryaevorus*, 8 July, Cuyahoga*Co.; *E. phaeton*, bog colony, Geauga*Co.

INDIANA: Bracher and Shull reporting from northern counties found unseasonably warm temperatures during Feb. and April and periods of cold weather in May and the remainder of the season dry. Bracher saw the first *P. rapae* on 25 March, *P. glaucus* on 14 April, *E. brizo*, on 24 April; *N. milberti* appeared again during June; his parsely produced a good crop of *P. asterius*; *C. promethea* and *A. polyphemus* were scarce.

CHOICE SPECIES: *L. eufala*, 25 May, Nashville, Brown Co. State Pk (ES); *P. catullus*, 12 May (early), Sidney, Kosciusko Co. (ES); *E. horatius*, 14 April, Silver Lk., Kosciusko Co. (ES); *P. cresphontes*, 10 May (early), Kosciusko Co. (ES); *G. marcellus*, June, 22-31 Aug., Elkhart Co. (CB, RB); *P. napi oleracea*, 17 Aug., Mongo, LaGrange Co. (ES); *P. protodice*, 10 Oct., S. Whitley, Whitley Co. (ES); *C. cecrops*, 25, 26 May (rare), Brown Co. S.P. (ES), 3 Aug., on *Rhus copallina*, Monroe Co. (DH); *L. helloides*, 28 Aug., Milford, Kosciusko Co. (ES); *F. tarquinius*, 23 Aug., Elkhart Co. (CB); *G. lygdamus couperi*, 18 April (early), Lake Co. (IL); *L. melissa samuelis*, 30 May, Lake Co. (IL); *L. bachmannii*, 19 Aug. - 4 Sept., Elkhart Co. (CB); *A. celtis*, 28-31 Aug., Elkhart Co. (CB); *L. anthedon*, 25 May, Brown Co. S.P. (ES); *C. pegala alope* and *nephele*, 23 Aug. same habitat, Elkhart Co. (CB); *C. amatix*, 26 Aug., Goshen (CB).

ILLINOIS: Five reports gave the state good coverage, with the weather somewhat undesirable for good collecting in northern counties. Spring was temperamental with early high temperatures followed by freezing weather; the summer was the driest in many years for most. Conway covered only the Goose Lk. Prairie State Park, Grundy Co. and found collecting below average. Hess, reporting for the first time, sent in a very fine summary covering the west-central region. He found *N. iole*, *L. thoe* and *L. bachmannii* down and *A. celtis* common. Faber sent in another fine report covering several counties and found a notable population gain of *F. tarquinius*, and the absence of *N. iole* and *E. claudia*. Schwartz, Kane Co., found *C. promethea*, *H. cecropia* and *A. polyphemus* at normal levels, *P. glaucus* not common and *P. asterius* exhibiting gregarious, aggressive 'hill-topping' behavior.

CHOICE BUTTERFLIES: *A. aesculapius*, 5-16 June, 31 Aug.-7 Sept., Jackson*Co. (PF); *A. belli*, 5-16 June, 7 Aug., Jackson Co. (2nd state record-PF); *A. carolina*, 5 July, 31 Aug.-7 Sept., Jackson Co. (PF); *A. reversa*, 31 Aug.-7 Sept. (2 specimens), Jackson Co. (PF); *E. bimacula*, 20 June-11 July, Ford, Grundy, Iroquois, Lake Co.s (PC, PF, IL); *E. dukesi*, 31 Aug.-12 Sept., Union Co. (PF); *E. dion*, 4-24 July, 7-12 Sept., Cook, McHenry, Union Co.s (PF, IL); *H. leonardus*, 28 Aug.-3 Oct., McDonough*Co. (CH, VS); *H. ottoe*, 15 July, Mason Co. (PF); *H. sassacus*, 3-22 June, Iroquois Co. (2nd state record-PF); *N. therminier*, 6 June, Jackson*Co. (PF); *P. hobomok f. pocahontas*, 6 June, Jackson*Co. (PF); *P. viator*, 13-24 July, Cook*, McHenry Co's (PF); *P. yehl*, 15, 16 June, 7-12 Sept., Jackson Co. (PF); *P. byssus*, 8 July-2 Aug., Iroquois, Kane, Mason, McDonough*, Vermilion Co's (PF, DH, IL, YS); *P. mystic*, 10 June, McHenry Co. (IL); *S. hay-hurstii*, 29 April-18 May, 29 July-31 Aug., Hancock*, Mason, McDonough*Co.s (PF, DH, VS); *A. lineola f. pallida*, 25 June-13 July, McHenry Co. (IL); *A. cellus*, 6 June-7 Aug., Jackson Co. (PF); *E. baptisiae*, 15-31 May, 1 Oct., McDonough* Vermilion*Co. (det. by J.R. Heitzman-PF); *E. icelus*, 20 April-3 June, Iroquois*, Vermilion*Co.s (PF); *B. philenor*, 27-31 Aug., Brown, Hancock, McDonough Co.s (DH); *P. protodice*, 1 July-2 Nov., Mason, McDonough Co.s (PF, DH); *A. midea*, 18-20 April, Vermilion*Co. (PF); *C. muticum*, 17-24 July (1st record since '39-IL); *S. liparops strigosa*, 25 June-11 July, Cook, McDonough*Co.s (PF, DH, YS); *C. niphon*, 10-31 May, Vermilion Co. (PF); *P. m-album*, 2 Sept., McDonough Co. (2nd record for county-YS); *F. tarquinius*, 12 June-13 Sept., McDonough*Co. (DH); *L. xanthoides dione*, 27 June, Grundy Co. (PC); *A. andria*, 7-14 Aug., Jackson Co. (PF); *N. milberti*, 24 Sept.-1 Oct., McDonough* Co. (DH, YS); *P. progne*, 1 Oct., McDonough*Co. (DH); *C. gorgone carlota*, 1 Oct. (late date) McDonough Co. (DH); *B. selene* ssp., 6-27 June, Grundy Co. (PC); *S. idalia*, 20 June-29 Aug., Cass*, Grundy Co.s (PC, DH); *S. aphrodite aCestis*, 20-27 June, Grundy Co. (PC); *L. creola*, 6-16 June, 14 Aug.-1 Sept., Jackson Co. (PF); *E. gemma*, 17 April-7 Sept., Jackson Co. (PF); *L. eurydice fumosa*, 27 June, Grundy Co. (PC).

CHOICE MOTHS (all Faber): *C. angulifera*, 15 June-31 Aug., Union Co.; *C. regalis*, 16 July-21 Aug., (late date), Union Co.; *S. bisecta*, 21 Aug., Union Co.; *C. hageni*, 9 Aug., Champaign Co.; *M. jasminearum*, 15 June, Union Co.; *S. franckii*, 15 June, Union Co.; *P. epimenis*, 20 April, Vermilion Co.

FOODPLANT RECORDS: *E. baptisiae*, ovipositing on *Baptisia leucantha*, Colchester, McDonough Co.s (DH); *P. cresphontes*, larvae on *Ptelea trifoliata*, Vermilion Co., and *Zanthoxylum americanum*, Piatt Co. (PF); *C. henrici*, reared on *Cercis canadensis*, Vermilion Co. (PF); *A. andria*, larvae (21 Aug.-7 Sept.) on *Croton monanthogynus*, Jackson Co. (PF); *E. phaeton*, larvae on *Lonicera oblongifolia*, McHenry Co. (IL); reared on *Asimina triloba* (PF).

STATE RECORD: *E. persius*, 1-3 June, Iroquois Co. (det. by J.R. HeitzmanOPF).

IOWA: Joint report by Conway and Seaborg for 5 July, in Bog Marsh Preserve, Butler Co. and Hayden Prairie, Howard Co. Choice captures included *E. bimacula*, mostly worn in both areas; *O. powesheik*, common, fresh in Hayden Prairie; *L.*

eurydice fumosa, common, fresh to moderately worn in both areas.

MINNESOTA: Conway and Seaborg reported extremely dry conditions in the northern forest areas during 6-9 July; also found gravel operations diminishing habitat of prairie species in Clay Co. Huber found it an outstanding year with good weather, but very dry, with many new county records being reported by several collectors. Highlights were: P. samuelis ssp., still going strong in Anoka Co. (May-Sept.); prairie Hesperia doing well; the 'on-year' for O. macounii, appeared again in Lake Co., and O. jutta ascerta enjoyed a strong 'off-year' in Lake Co.

CHOICE BUTTERFLIES: A. hianna, 5 June, Lincoln*Co. (WJ); E. dion, 1-17 July, Houston*, Isanti*, Rice*, Stearns*, Wabasha Co.s (RD); E. conspicua, 7-17 July, Houston, Isanti, Rice Co.s (RD,JS); E. bimacula, 18-25 June, Anoka*, Dakota*, Isanti* Co.s (RD,JS); P. massasoit, Rice*, Stearns* Co.s (RD,JS); P. viator, 1-17 July, Houston, Lincoln, McLeod Co.s (RD, RH, JS); A. arogos, 30 June-17 July, Iowa, Clay, LeSueur*, Redwood*, Renville*, Sibley*, Wabasha*, Watonwan* Co.s (RD, RH, WL, JS); A. campestris, 1 Oct., Rice*Co. (JS); H. dacotae, 3-7 July, Clay, Stearns, Co.s (PC, JS); H. ottoe, 17 July, Wabasha Co. (RH); H. pawhee, 5 Sept. Lincoln Co. (RB); O. powesheik, 3-13 July, Clay, Pope*, Sibley* Co.s (PC, RD, EO); P. centaureae, 22 May, Lake Co. (RH); L. epixanthe ssp., 25 June, Isanti* Co. (RD); H. isola, 31 July, Wabasha* Co. (RD); G. lygdamus couperi, 4 May, N of Morton (DH); B. freija, 15 May, Aitkin* Co. (RD); B. frigga ssp. 22,23 May, Aitkin, St. Louis Co.s (DD, RD); L. appalachia leeuwi, 1-24 July, Isanti*, Wabasha* Co.s (RD); O. jutta ascerta, 19 June, Lake Co. (RH); E. discoidalis, 22 May, Lake, St. Louis Co.s (RB, RH).

STATE RECORDS: A. lineola, 8 July, St. Louis Co. (PC); E. baptisiae, 17 July, Houston Co. (RD).

WISCONSIN: Ferge, reporting from northern counties initiated the season on 2 April collecting spring-emerging moths at UV. He found emergence of butterflies about normal except for B. frigga and E. discoidalis, which peaked a week earlier than in the past 2 years. Drought conditions (reported by others in the state) throughout the summer probably contributed to decline of lepidoptera numbers after mid-July. Ferge also found Catocala numbers down, Polytonia species scarce in bait traps, and a lack of southern migrant butterflies; yet he recorded 88 species of butterflies, 16 species of Sphingidae and 12 species of Catocala. Balogh and Sieker also found good collecting in the early part of the season; Sieker found Sphingidae coming back in numbers, Speyeria extremely abundant in Door Co. and Saturniidae scarcer than usual.

CHOICE BUTTERFLIES: A. hianna, 5 June, Wood Co. (LF); E. bimacula, 4 July, Marathon Co. (LF, JP); E. dion, 11-25 July, Fond du Lac*, Racine*, Walworth* Co.s (GB)- H. ottoe, 17 July, Grant Co. (LF)- H. comma laurentina, 25 July, Iron Co. (LF)- P. hobomok f. pocahontas, 6 June, Waukesha* Co. (GB)- P. viator, 11-17 July, Adams, Waukesha Co.s (GB, LF)- C. palaemon mesapano, 13 June, Fond du Lac Co. (GB)- E. lucilius, 31 May-5 June, 5 July-8 Aug., Fond du Lac, Sauk*, Waukesha*, Waupaca*, Wood* Co.s (GB)- P. virginensis, 9 May, Marathon Co. (LF)- C. muticum, 26 June-17 Aug., Dane, Fond du Lac Co.s (GB)- S. liparops strigosa, 25 July, Racine* Co. (GB)- C. polios, 9-22 May, Bayfield, Marathon, Marinette Co.s (LF)- L. helloides, 19 May-20 June, Bayfield*, Marathon, Waukesha* Co.s (GB, LF)- L. xanthoides dione, 27 June, Grant Co. (LF, JP)- L. epixanthe ssp., 3-6 July, Manitowoc*, Marathon, Oneida Co.s (GB, JP)- P. melissa samuelis, 5 June, Wood Co. (LF)- L. archippus X arthemis astyanax, 8 Aug. (m), Walworth Co. (2nd one from state - GB)- B. freija, 22 May, Oneida Co. (LF)- B. frigga ssp. 31 May-5 June, Langlade, Vilas Co.s (LF)- C. gorgone carlota, 22 May-5 June, Wood Co. (LF)- S. idalia, 27 June-4 July, Iowa, Sauk Co.s (GB, LF, JP)- S. aphrodite, perfect bilateral gynandromorph, Door Co. (WS)- L. appalachia leeuwi, 4-18 July, Adams*, Fond du Lac*, Marathon Co.s (GB, LF, JP)- C. tullia inornata, 6-20 June, Ashland*, Bayfield, Iron* Co.s (LF)- O. chryxus strigulosa, 22 May, Marinette Co. (LF)- O. jutta ascerta, 31 May-13 June, Langlade, Marathon Co.s (LF)- E. discoidalis, 22 May, Iron*, Oneida Co.s (LF).

CHOICE MOTHS (all Ferge): C. juglandis, 28 May, Marathon Co.- H. gracilis, 20 June, Bayfield Co. (on orange hawkweed)- S. abbotti, 7 June, Marathon Co. (bait trap)- H. gallii intermedia, 5 July, Marathon Co.- P. assimilans, 14-20 May, Marathon Co. (32 species at UV)- H. parthenos, 13 June-6 July, Marathon, Oneida Co.s- O. alurina, 19 April, Marathon Co.- B. borealis 2-16 April, Marathon Co.- F. jocosa, 2 April, major, 16 April, Marathon Co.- L. semiusta, baileyi, 2-9 April, Marathon Co.- C. sericea, 29 Sept. Marathon Co.- E. apiata, 14-18 Sept., Marathon Co.- J. rufago, 29 Sept., Marathon Co.- S. microgamma, 13 June, Marathon Co.- M. inclusa, 20-28 May, Marathon Co.- G. lintneri, 13-19 April, Marathon Co.- L. ursaria, 16 April, N. atroliturata, 9 April, Marathon Co.- T. laricis, 27 Aug., Marathon Co.

FOODPLANT RECORDS: P. napi oleracea and rapae, reared on water cress, Nasturtium officinale, Fond du Lac Co. (GB).

MICHIGAN: A normal winter was followed by a disastrous ice storm which heavily damaged trees and shrubs, especially in mid-state, in early March. April was unusually warm and dry, followed by a hot, dry summer. The season ended sooner than last year with early frosts. Only 5 collectors responded, reporting on 95 butterfly species, indicative of a poorer season than last year, despite some highlights. Miller found Lycaenidae and Hesperidae collecting good in several counties during May. The Russell's collected at least 30 butterfly species on 2, 3 July in Kalamazoo Co., Weintraub reported 14 butterfly species 4-8 July, Washtenaw Co. Leeuw enjoyed collecting numbers of S. cybele krautwurmii, N. vau-album j-album, and H. comma laurentina on 26-29 July, Mackinaw Co. King reported B. eunomia dawsoni very common during June just NW of St. Ignace, Mackinaw Co.- Schwartz found P. glaucus canadensis very abundant on 2-6 June, Houghton, Keweenaw Co.s Nielsen found the season poorer than last year for most lepidoptera, largely because of the unusual dry conditions and early frosts- although he recorded 78 butterfly species (the lowest in years) and 32 Catocala species, down from last year, and found Sphingidae and Saturniidae down. A. lineola continued in great numbers statewide, gaining recognition as a pest in some pasture areas - Nielsen found several lineola live-trapped in the flowers of the showy Lady's Slipper, Cypripedium reginae, in Otsego Co.

CHOICE BUTTERFLIES: A. hegon, 21 May--5 June, Barry, Van Buren* Co.s (WM)- A. hianna, 1-5 June, Montcalm*, Newaygo Co.s (IL, MN)- E. bimacula, 19-20 June, Otsego Co. (MN)- E. dukesi, 24, 25 July, Lenawee*, Monroe Co.s (MN)- H. ottoe, 1 July, Allegan (IL)- H. metea, 23 May, Allegan Co. (IL)- H. leonardus, 31 Aug., Allegan Co. (IL)- E. martialis, persius, 27 May-1 June, Barry Co. (WM)- G. marcellus, 17 April, Lenawee Co. (early date-MN)- P. virginensis, 19 May, Emmet Co. (WM)- C. muticum, 4 July, Washtenaw Co. (JW)- L. epixanthe michiganensis, 1 July-3 Aug., Allegan, Chippewa, Otsego Co.s (IL, MN)- L. helloides, 23 May-17 July, Cass, Otsego, Van Buren* Co.s (WM, MN)- L. dorcas, 2 July, Kalamazoo Co. (PR)- P. melissa samuelis, 1-5 June, Montcalm, Newaygo Co.s (IL, MN)- A. celtis, clayton, 2 July, Kalamazoo Co. (PR)- J. coenia, 4 Aug., Chippewa Co. (MN)- P. batesi, 4 June, Montcalm Co. (WM)- B. frigga ssp., 23 May-15 June, Iron, Keweenaw*, Schoolcraft Co.s (MN,P)- S. idalia, 17 July, St. Joseph Co. (MN)- E. mitcheilli, 2 July, Kalamazoo Co. (PR)-

O. chryxus strigulosa, 9 May, Newaygo Co. (IL).

CHOICE MOTHS: (All MN) - *S. luscitiosa*, 20 June, Otsego Co. - *S. poecila*, 27, 28 May, Iron, Otsego Co.s - *X. thoracia*, 23, 24 April, Otsego Co. - *P. anceps*, 2 Oct., Cheboygan Co. - *P. epimenis*, 17 April, Lenawee Co. - *E. nexilis*, 15 May, Otsego Co. - *P. silphii*, 23 Sept. - 15 Oct. (ex-lar.), Cass Co. - *S. viridisigma*, *selecta*, *octoscripta* (det. by T. Eichlin), 1-4 Aug., Chippewa Co. - *C. nebulosa*, 5 Sept., Lenawee Co. - *C. coelebs*, 2-5 Aug., Chippewa, Otsego Co.s - *C. semirelicta*, 4 Aug., Chippewa Co. - *H. rileyana*, 17 April, Lenawee Co.

FOODPLANT RECORD: *E. baptisiae*, larvae on *Baptisia leucantha*, 28 Aug., St. Joseph* Co. (MN).

ZONE 6: SOUTH: ARKANSAS, LOUISIANA, TENNESSEE, MISSISSIPPI, ALABAMA, FLORIDA, GEORGIA, SOUTH CAROLINA, NORTH CAROLINA, and VIRGINIA. Coordinator: Bryant Mather. Contributors: Ray Suydam, Wayne A. Miller, M.J. Plagens, Mike Rickard, Ron Gatrell, Paul Tuskes, Irving L. Finkelstein, M.L. Israel, John A. Hyatt, Greg Szenas, Richard H. Smith, Jr., Thomas S. Williams, Edward Knudsen (for himself, Mike Rickard, and Tom Neal), Paul H. Faber, George W. Busby III (for himself and Robert Busby), Daniel L. and Nancy Burris, Robert L. May, and Leo J. Paulissen.

ARKANSAS: Paulissen reported that in northwest Arkansas the weather for the first half of the year was about average but for the last half it was very dry leaving a rain deficit for the year of about eight inches; October was the coldest of record. Except for the annual migrants: *D. plexippus* and *P.s. eubule*, only local species were seen. Those absent or at low numbers included *S. cybele*, *E. ontario*, and *S. tiparops*. *E.h. sosybius* was unusually common. Highest daily butterfly species count was 50 on 12 September. Total butterfly species observed for the year was 82 of the 116 recorded for Washington County. The fall migration of *D. plexippus* was remarkable both for the large numbers and because the flight direct was due west; the biggest flight was on 25 September. *E. p. ozarkae* were observed on *Gerardia graniflora* Benth, during the spring, summer, and fall with apparent overwintering in groups in their webs on the plants. A couple of *E. odora* were reported seen in the county.

LOUISIANA: Israel reported that the Xerces Society butterfly count was taken in the vicinity of Kleinpeter and Forman, East Baton Rouge Parish, on 22 August; 30 species were seen or caught, including *L. portlandia* (4), *P. texana seminole* (4), *A. andria* (4), *L. bachmannii* (4), and *A. halesus* (1). Larvae of *A. andria* were found on 24 July and 4 September on Croton. *V. atalanta* was seen on 9 July and as late as 4 December a male was defending territory against intruding buck moths. A worn *E. gemma* was taken on 18 July. *E. claudia* was common on the levee across the river from Plaquemine on 10 June and 27 August; *P. protodice* and *P. vibex* were also taken there on 27 August. *C. nycteis* was taken at the St. Helena Parish line on La. 1026 on 19 July. Store-window collecting in Baton Rouge yielded *E. imperialis*, *A. io*, and *S. jamaicensis* on 3 July; *A. luna* on 24 August. *H. maia* emerged in very large numbers from 26 November to 4 Dec.

TENNESSEE: Wayne Miller, collecting in Clay co., took *Catocala habilis* (31 Jul.-6 Aug.), *C. serena* (1-6 Aug), *C. anhusi* (31 Jul.-6 Aug.), *C. dejecta* (24 Jun-3 Aug), *C. ulalume* (31 Jul - 4 Aug), *C. nebulosa* (3 - 6 Aug), *C. cara carissima* (3-5 Aug), *C. coccinata* (24-27 Jun), *C. clintoni* (24-27 Jun), *C. andromedae* (23 Jun-12 Jul), *C. connubialis* (23-27 Jun), and *C. similis* (25 Jun). He has taken at least 41 species of *Catocala* there. He also took *Sphinx franckii*, a male on 24 Jun at 11 pm at a mercury-vapor lamp and a female at an incandescent lamp on 26 Jun at 10:30 PM. Hyatt, reporting on Sullivan, Greene, and Washington Counties, found that the spring was early and warm and had average precipitation until mid April, May was dry and the summer was drier than usual. Collecting was not as good as in 1975. *Papilio* species was abundant in April and May but the usually larger July-August flight almost failed to appear. The first sighting was *P. rapae* on 20 March and *N. antiopa* on 23 Mar., in Sullivan Co; other records for this county are: 22 May abundant *P. rapae*, *C. eurytheme*, and *C. philodice*; also *L. astyanax*, *M. nycteis*, *P. interrogationis*, and *S. cybele*; 30 May *S. cybele* abundant, also *L. portlandia*, and *A. aesculapius*; 5 June *E.h. sosybius*, *E.c. cymela*, *V. atalanta*, *V. virginianensis*; 11 July *L. archippus*, *E. claudia*. Greene Co., 28 March *P. glaucus*, *G.marcellus*, *E. juvenalis*, *E. comyntas*, and *Psychomorpha epimenis*; 2 May *A. midea* (male), *P. asterias*, *D. plexippus*, *P. tharos*; Washington Co: 16 April; *P. philenor*, *A. midea* (female), *I. henrici*; 29 June *C. p. pegala* (abundant), *L. astyanax*. His Xerces Society count was made on 2 July, 15 miles S of Kingsport, Sullivan Co., on Highway 93 at an elevation of 750-1000 ft. and was as follows: *S. melinus* (6 male and female); *S. titus* (3), *P. tharos* (abundant), *M. nycteis* (abundant), *C. pegala* (10-15), *E. cymela* (9), *S. cybele* (7), *D. plexippus* (4), *P. interrogationis* (2), *V. virginianensis* (2), *C. eurytheme* (abundant), *C. philodice* (abundant), *P. rapae* (abundant), *P. glaucus* (1♂), *P. troilus* (1), *L. bachmannii* (1), *E. comyntas* (abundant), *E. clarus* (3), *A. campestris* (abundant), *T. bathyllus* (10).

MISSISSIPPI: On 19 March at the Big Biloxi Recreation Area, Harrison Co., Mike Rickard took a male of *Erynnis baptisiae* (Forbes) on blackberry blossoms along the railroad track. The determination was confirmed by Dr. J.M. Burns who had predicted in 1964 that it would be found in Mississippi. This is the 144th species of butterfly to have been found in Mississippi. The account was published in *Jour. Lep. Soc.* 30 (3), Sep 1976, p. 200.

ALABAMA: No reports.

FLORIDA: Gatrell found *Electrostrymon angelia* common on 23 July in the Miami area in Dade Co. *Chlorostymon simaethis* was common on 24 July at Key Largo in Monroe Co., several larvae were found and reared to adults. *Cymaenes tripunctus* was uncommon on 24 July in the Lauderdale area. Tuskes found *H. charitonius tuckeri* and *L. archippus floridensis* 6 mi. W of Royal Palm Beach, P.B. Co. on 24 April; on 28 April at Key Largo, *A. jatrophae quantanamo* was common and *P. sennae*, *P. agarithe*, and *P. philea* were present. Finkelstein commented on the continuing appearance of new species in south Florida, such as *Papilio androgeus* which appears to be well established in the orange groves in western Broward Co. He saw one at Davie on 23 March and took specimens on 15 May and 8 Sep. He also took *Imolus azia* on 14 May at Princeton, Dade Co., *P.a. ponceanus* on 14 May at Key Largo, and *E. angelia* on 4 September at Homestead, Dade Co. Between 20 and 30 March, Knudsen, Rickard, and Neal found the following: *T. texana seminole* 21 Mar, 10 miles east of Cedar Key, Levy Co., common; also *C. virginianensis* and *E. brizo somnus* (in myrtle oak scrub); on 30 Mar. at Yankeetown, Levy Co: *C. gryneus smilacis* and *P. aaroni howardi*. Near Homestead, Dade Co., on 28 March: *Siproeta steneles biplagiata*, *E. dina helios*. On 27 Mar. at Florida City, Dade Co.: *Chlorostymon s. simaethis*. On 26 March at Big Pine Key, Monroe

Co.: Strymon limenia, S. martialis (abundant on Tournefortia and Suriana on the beach), Phocides pigmalion, E. arpa, Pseudocharis minima. At Deep Lake, Collier Co., on 29 Mar. Euphyes berryi (7), Problema byssus (1). At Green Swamp, Polk Co. on 30 Mar: E. arpa. In Santa Rosa Co., 5 miles E of Milton on 20 Mar. M. yuccae was common, Catocala connubialis was taken at Jane's Scenic Drive, Collier Co. on 29 Mar. Szenas reported for St. Petersburg, Pinellas Co: G. marcellus common, larvae on Asimina; P. philea ex ova on Cassia; P. sennae ex ova on Cassia; P. agrithe ex ova on Pithecellobium; P. statira ex ova on Calliandra; A. vanillae ex ova on Passiflora. P. evarete zonalis uncommon; A. monuste abundant July-Aug. with dark females common; C. ethlius ex ova on Canna; E. arpa rare in March, L. eufale, W. otho, P. verna, W. egeremet, N. neamathla, U. proteus ex larvae. E. claudia common in October at Tarpon Springs, Pinellas Co. At Terra Ceia, Manatee Co.: P. statira common but could only be taken when feeding or ovipositing; many seen resting on citrus and other large trees in late afternoon. All local Phoebis found feeding on Ixora in July; also taken: P. pigmalion, C. eurytheme, and Strymon columella. Faber reported ASBOLIS capucinus on 19 October in Sarasota Co. in good numbers in Collier, Dade, and Monroe Counties in October; Calpodes ethlius 24-27 Oct., Monroe Co.; Cybaeus tripunctus 24-27 Oct Dade and Monroe Cos.; E. zarucco 19 October Sarasota Co.; L. eufala 22-24 Oct., Dade and Monroe Cos.; N. neamathla 27 Oct. Monroe; P. panoquinoides 24-27 Oct. Dade & Monroe; P. pigmalion okeechobee 21-27 Oct. common in Collier, Monroe and Dade; P. manueli 24 Oct, Key Largo (a sight record); U. proteus reared on Amphicarpa bracteata Sarasota and Dade; Megathymus cofaqui 8 tents found, one yucca plant with 2 tents, 20 October Dade; A. alicia 18 Oct. Sarasota; M. petreus 29 Oct. Dade; Siproeta steneles biplagiata 23-29 Oct. Dade Co., 7 seen in one day near Homestead; Battus polydamas lucayus 27 Oct. Dade; P. palamedes 19 Oct. Sarasota; P. troilus ilioneus 18-20 Oct. Sarasota; Appias drusilla neumogenii 24-27 Oct. Monroe & Dade; A. monuste philea 24-29 Oct. Monroe & Dade; E. दौरा palmira 24 Oct. Monroe; P. agrithe maxima 24-27 Oct. Monroe, Collier, and Dade; P. philea 21-29 Oct. Collier, Dade and Monroe. Busby reported that he and Robert Busby found D. eresimus abundant along the Tamiami Trail from the junction of Fla 27 to 23 mi. E of Naples; eresimus made up 10% of the Danaid population; males and females were in about equal numbers, all were fresh. Burris reported for himself, his brother David and his wife Nancy, that they found E. cymele viola and Callosamia carolina on 14 March and Euphyes palatka and A. capucinus on 11 April at Bayport, Hernando Co.; E.c. viola and E.g. gemma on 7 March and A. celtis alicia on 13 Oct. at Branchton, Hillsborough Co.; C. regalis on 21 Jun. at Branford, Suwanee Co.; C. pegala alope on 27 Jun. and 4 Jul at Woodville Leon Co.; E. tatila tatilista, P.a. eubule, P. aristodemus ponceanus on 8-10 May at North Key Largo, Dade Co -- where collecting was poor -- on their honeymoon. May reported that on 4 May in East Naples he saw S. columella on a royal poinciana; on 6 May he saw A. monuste in abundance at Key deer refuge where he also saw P. evagete and A. floridalis; on 15 May at "Frog City" on the Tamiami Trail, on Spanish needles he saw: H. charitonius, D. julia, A. jatrophae; U. bella, E. acraea and P. robiniae were seen in East Naples.

GEORGIA: Suydam reported the following observations of sizeable colonies: 17 Apr. M.g. gryneus Gwinnett Co., over 100 in an isolated stand of J. virginiana; 11 Jul L.p. americana 30-40 in a field, Gwinnett Co.; 1 Aug. C. nycteis numerous observations near the Chattahoochee River, Fulton Co.; 15 Aug. T. texana seminole Chatham Co.; S. edwardsii around Quercus ilicifolia in Bartow Co. Plagens found P. palamedes southeast of Macon on 19 Mar. Gatreille saw and missed one Erora laeta on 11 Jul in the Cooper Creek Game Area in Union Co. Finkelstein reported a good season that ended early. He found a large colony of H. meskei in Bibb Co.; and added three records for E. laeta - one by him, one by Joe Patterson, and the one by Gatreille noted above; his was at the same place but 10 Jul in Fannin Co. He reported 15 L. creola on 13 and 15 Jun on Oglethorpe Mt., Pickens Co.; two E. areolata septentrionalis 22 Jun, Allatoona Hunting Area, Bartow Co.; S. diana 1 Jul (11♂ 1♀) Cooper Creek State Rec Area, Fannin Co., 20 Aug same place 6♀♀; P. byssus 29 Aug Oconee Nat Forest, Jasper Co.; H. meskei (49) 2 Oct Hgy 361, Macon, Bibb Co.; E. dion alabamiae Hartley Bridge Road, Crawford Co. 2 Oct, 1♀, County record.

SOUTH CAROLINA: Gatreille reported state records: Meg. harrisi ex pupa Aiken Co. one male, other tents found; H. atalusa seminole 15 Jun 1♀, 17 Jul 5♂♂, 31 Jul 9♂♂ 2♀♀, 14 Aug 16♂♂ 7♀♀, 6 Sep 3♂♂ 2♀♀, 11 Sep 1♀ Aiken Co.; H. meskei 12 Jun 3♂♂ 2♀♀, 15 Jun 18, 19 Jun several, 26 Jun 2♂♂ 3♀♀, 2 Oct 1♂ Aiken Co.; E. areolata septentrionalis 12 Jun 1♂ 15 Jun 2, 19 Jun 6, 6 Sep 36 (by Gatreille, Arbogast, and Gilmore), 11 Sep 20, 2 Oct 2, Aiken Co.; A. a. arogos 19 Jun 2♂♂ 1♂, 14 Aug 1♂, 6 Sep 1♂ (Gilmore) Aiken Co.; L.p. americana 3 Jul 1♂ Aiken Co.; L. anthedon 1♀ while ovipositing on top of Table Rock Mt. 28 Aug Pickens Co.

NORTH CAROLINA: Williams reported that on 19 Aug. at Buxton's Woods near the Cape Hatteras Lighthouse, Dare Co., he found P. palamedes common but worn, C. cecrops very abundant, E. horatius common but worn, together with millions of Aedes aegypti and cotton-mouth moccasins. At the lighthouse he took S.m. melinus and saw C. virginianensis. On 20 Aug. at Nags Head he took P. vibex, A. campestris, L. eufala; also on 20 Aug. at Mantio he saw P. palamedes and P. troilus.

VIRGINIA: Plagens summarized his collecting for 2 1/2 years with the Army near Petersburg which ended on 26 Jul: 41 species (not including skippers); '74 and '76 were poor years, '75 was good. In 1976 collecting was good until mid-May, on 15 Jun collecting all day he saw but 15 butterflies - including skippers. On 28 Mar near Varina, Henrico Co. C. henrici and A. midea; on 17 Apr near Devils Knob, Augusta Co. A. midea, L.p. americana; on 30 May near Chester, Chesterfield Co. G. marcellus and P. comma; on 10 Jul at Petersburg: S. cybele. A report by the Army on the use of pesticides at Fort Lee mentioned the possibility that the small colony of L. appalachia on the base could be destroyed. (Smith took a female P. glaucus which is similar to the yellow form basally and the dark form marginally, he supplied color photographs nearly full size of the upper and lower surface (these are being sent to the editor) it was taken on 1 Aug at Browns Mill, Fairfax Co.) He reported, also for Fairfax Co., S.c. falacer Reston 21 Jul, H. metea? Glendale 30 Apr; H. leonardus ♀ Reston 19 Sep. Hyatt reporting on Lee and Scott Counties found conditions generally as described in his Tenn. report. On 18 Apr. in Lee Co. he took P. glaucus, P. trpilus, B. philenor, and G. marcellus, I. henrici, T. bathyllus, and E. icelus. In Scott Co on 5 Sep he took P. philenor and P. glaucus.

ZONE 7: NORTHEAST. QUEBEC, MARITIMES, NEW ENGLAND, NEW YORK, NEW JERSEY, PENNSYLVANIA, DELAWARE & MARYLAND.
Coordinator: Dave Winter (CW). Contributors: J.G. Barbour (JB), R.W. Boscoe (RB), W.F. Boscoe (WB), Deane Bowers (DB),

and associate (DBx), A.E. Brower (AEB), C. Burkhart (CB), G. Ehle (GE), J.H. Fales, (JF), F.D. Fee (FF), L.P. Grey (LPG), S. Goldstein (SG), D. Guzo (DG), H. Hansel (HH), J.P. Holmes (JH), M.L. Israel, (MI), E. Hennijohn (EJ), W. Kiel (WK), R.A. Layberry (RL), R. May (RM), R. Robbins (RR), J.D. Schwartz (JS), P. Tuskes (PT), B.D. Williams (BW), T.S. Williams (TW), Jo Brewer Winter (JBW).

QUEBEC: RL, reporting on Gatineau Co., called the weather "the worst". A. samoset taken 14 June, Gatineau Park, P. glaucus common then; C. augustinus & C. nippon in Bog (with black spruce and tamarack only) at St. Francois de Masham; at this site a new colony of L. epixanthe 25 June; this species also at Donovan Bog 28 July, some fresh; S. calanus/boreale/caryaevorus (sic) seldom seen, save for two large groups about tops of large basswood and hop-hornbeam trees, apparently settling for night at 1930 hrs.; B. eunomia at St. Francois de Masham bog, fresh and numerous 10-25 June, disproving brief flight period there; no ovipositing seen. C. nycteis taken at Lucerne, 3 July; N. milberti, hundreds of highly parasitized larvae on sting nettle, 22 July; C. cardui, virginiensis, & E. phaeton absent. O. chryxus strigulosa was taken at 1250' at firetower, Luskville Falls, 25 May, and St. Francois de Masham bog 4 June. O. jutta was absent in 1976: ?biennial. JH & WK, Mt. Jacques Cartier, Gaspe, 10 July: B. eunomia tricularis common at 4100'; O. melissa ssp., a few taken at 4280' (perhaps late); and a small colony of C. inornata on the tableland. Anartia richardsoni was frequent but out of reach; several Crambus browerelli taken (det'n Klots). On Mt. Albert 11 July: a few T. lineola taken (but none of the expected H. laurentina borealis); one P. centaureae freiija; ♀♀ P. brevicauda taken and released; few C. inornata at 3450' on the tableland, with a few worn O. taygete. One ♂ P. parthenos borealis was taken just below the tableland. (WK notes tightened regulations in the area: entrance to mountains and hinterlands requires written pass obtainable at hotel or campgrounds; use of decrepit cabin on Mt. Albert no longer allowed.) HH reported many O. jutta mid-June in bog in Temiscouata Co.; B. eunomia still very low following the very wet 1974 season.

NEW BRUNSWICK: WK & JH raved over "western-style profusion" of butterflies in flowery fields near Kedgewick 8 July. P. saepiolus was abundant there, but HH could not find it at Edmundston in '76; E. laeta numerous at Edmundston 3-7 June (HH); L. dorcas dospassosi common at Bathurst (HH). WK found C. nycteis common at Kedgewick, and HH recorded it for the first time at Edmundston, where C. harrisii and E. phaeton were swarming. L. portlandia anhedon was numerous at Kedgewick 8 July along with C. inornata (JH, WK); HH found C. i. nipisiquit down at Bathurst 30 July; heavy flight of C. pegala at Edmundston (HH). JH took A. langtoni at Kedgewick 8 July.

MAINE: In extensive field activities for botanical inventories AEB noted diurnals low almost everywhere; (he voiced a plea for opposition to the Dickey-Lincoln Dam project, as more destructive of habitat (and commercial timber) than productive of electric power.) A. samoset was reported in conifer forest 24 June (DBx), Baxter St. Pk.; C. eryphon and augustinus reported down (WK) at Wilson's Mills bog, Oxford Co., 29-31 May; C. lanoraieensis reported as up from none to "a few" in Penobscot Co. by LPG, who notes good colonies of G. lygdamus couperi at Lee & Chester. JBW took S. acadica on Ilesboro 4 July, Waldo Co. WK found a few fresh O. jutta at Wilson's Mills bog 31 May; Anarta cordigera scarce there this year. Catocala coelebs was taken on Ilesboro 28 Aug. (DW). Papaipema sp. were unusually abundant in Sept. in Penobscot Co. (LPG).

NEW HAMPSHIRE: WK reported an average Coos Co. winter, with brief early spring warmth followed by cold and rain into late May; usual spring species (E. icelus, P. glaucus, C. argiolus) were scarce; June and early July conditions were good, followed by more rainy weather. Several A. samoset 5 June in Benton, Grafton Co., and E. persius (worn) 6 June, Merrimack Co. (DW). WK found numerous larvae of E. clarus on black locust, N. Conway, 3 July. E. laeta was found in Bartlett, Carroll Co. 14 May (DBx) and Benton 5 June (DW); several S. acadica 2 Aug. at Stewartson, Coos Co. (JH, DW); L. melissa samuelis, Merrimack Co. colony, abundant 4-6 June (RR & DW); RR noted 2 pairs in cop. at 1700 hrs., one just breaking off; JBW & DW on 2 Oct collected 32 ova, many empty, mainly on outside of pods (in contrast to Dirig's & Cryan's observations in NY mainly inside open pods); first brood NH ova were all found on under surface of oblique stems, a few cm. from ground. L. arthemis was abundant at N end of Jefferson Notch Rd. 20 June (WK); he found B. selena common near Bray Hill Bog, Whitefield, Coos Co. 13 June, but S. cybele & aphrodite rare thruout '76, S. atalantis common. N. j-album was common near Whitefield, Coos Co. in Mar (WK); N. milberti taken at Bartlett 20 Aug. (DBx). C. inornata was taken 20 June (WK) and 29 Aug (JH, WK) at Jefferson; O. melissa semidea enjoyed a heavy flight 5 July at the "Cow Pasture", Mt. Washington (JH, WK). (Kiel notes the continued uncertain status of collecting permits, with information hopefully available from John W. Lanier, USDA Forest Service, PO Box 638, Laconia NH 03246). C. p. nephele was very common on Jefferson meadows, last half of July (JH, SW).

MOTHS: WK took P. umbra and Harrisimemna trisignata 18 June at blacklight in Jefferson, and Magusa orbifera (Gulf Coast migrant) 27 Aug. WB reported excellent moth take at W. Rumney, Grafton Co., July 1-9, including ten of the usual Sphingid species, and a large run of A. virgo, 10-14 d. ahead of usual. In Merrimack Co. Drasteria occulta was numerous 5 June, flying with L. melissa samuelis (DW). Kiel has an extensive array of Coos Co. Crambus, will share data and habitat observations with interested specialists.

VERMONT: E. laeta was not found at Texas Falls, Addison Co. site where present 28 May '75 (RR). He found C. inornata at Hancock, Addison Co. 5 June and at Craftsbury, Orleans Co., 17 Aug, augmenting Holmes and Kiel's observation of at least a partial second brood in N N.E. CB found Hyles gallii abundant 6 Aug. at Putney, Windham Co.

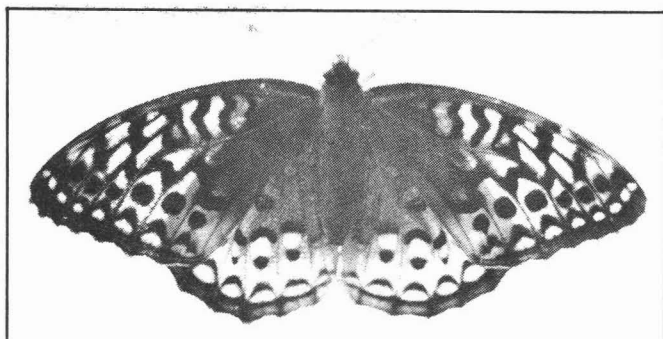
MASSACHUSETTS: An April heat wave with 5 days above 85 degrees (two above 95, three nights above 68) upset timetables; RR found, by 18 April, S. melinus, C. nippon, irus & augustinus, C. argiolus, E. brizo & juvenalis, P. rapae, and N. antiopa. Frost in early May, followed by a damp cool late May; drought in June and early July then normal. Catocala got an early start. DBx noted A. hianna 10 June in Montague (Franklin Co.). B. philenor was taken 11 June e. of Amherst, Hampshire Co. (PT). P. virginiensis was common in Dalton, Berkshire Co., 30 April (DBx), with a few P. napi taken there 10 May (DW). C. polios was flying 5 May in Wellfleet, Barnstable Co. (DBx), and henrici in Wellesley, Norfolk Co., 18 April (DW). DB took many fresh S. edwardsi 8 July in Montague, as well as L. epixanthe. L. thoe occurred 10 June W of Amherst (PT). F. tarquineus larvae were common on woolly aphids, black alder (DBx), in Shutesbury,

THE DARKLING BUTTERFLIES

On August 1, at Brown's Mill, Fairfax County, VA, Richard H. Smith Jr of Reston captured a strange and wonderful butterfly --a *Papilio glaucus*, striped basally like a normal *glaucus*, but with the marginal half of both pairs of wings resembling the dark form of a ♀ *glaucus*. The insect appears to be a ♀. (A semi-melanic genandermorph would surely luck out as the world's rarest butterfly!)

On July 1, Edward Jennijohn captured a *Euphydryas phaeton* ♂ which was totally black basally --the only aberrant out of 150 specimens which he has examined and released since 1975 from a large colony of *phaeton* in Manlius, NY.

After reading these reports I began to wonder whether some mysterious feed-back mechanism



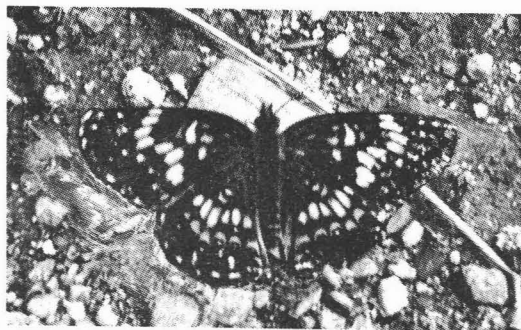
Chlosyne harrisii. melanic form
(Islesboro, ME.)

had perhaps signalled the melanin to flow abundantly to produce a wing-warming aid, as on the ventral side of the wings of arctic colias species. Because at Islesboro, ME in late August of this same year, I had come upon one *Chlosyne harrisii* which was nearly totally black, and one abnormally dark *Speyeria atlantis*. Why so many all in one year?

Then I remembered that in July 1970 I had found another *S. atlantis* --this one with black-smudged forewings, and in July 1973, a *Lycaena phlaeas* in a similar condition, known, in its case, as form *fasciata*. I put the *phlaeas* into a killing jar which Ed Brower had given me two years previously, and which I had never used. About five minutes later I bitterly regretted this action. What if it had been a ♀? She might have laid eggs for me!

Hurrying back to the jar, I removed the limp form, laid it on a mounting board and prepared to pin it. This I was about to do when suddenly it rose up and flew to the window. Well, the upshot of it all was 26 eggs. Of these 26 I managed to rear 9 to maturity. Of the 9, six were as dark as the parent and three were semi-normal. 2 pairs of this brood mated, and from one I acquired 11 eggs of which maturity. The ♀ parent was *fasciata* and the ♂ was semi-normal. None of the offspring of this mating were normal, and none were true *fasciata*.

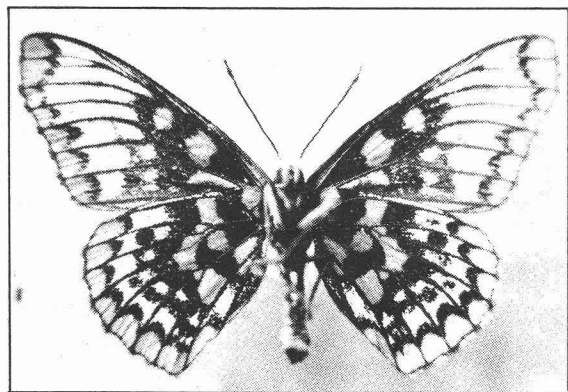
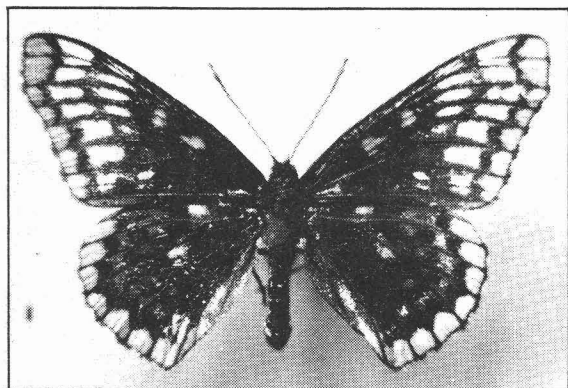
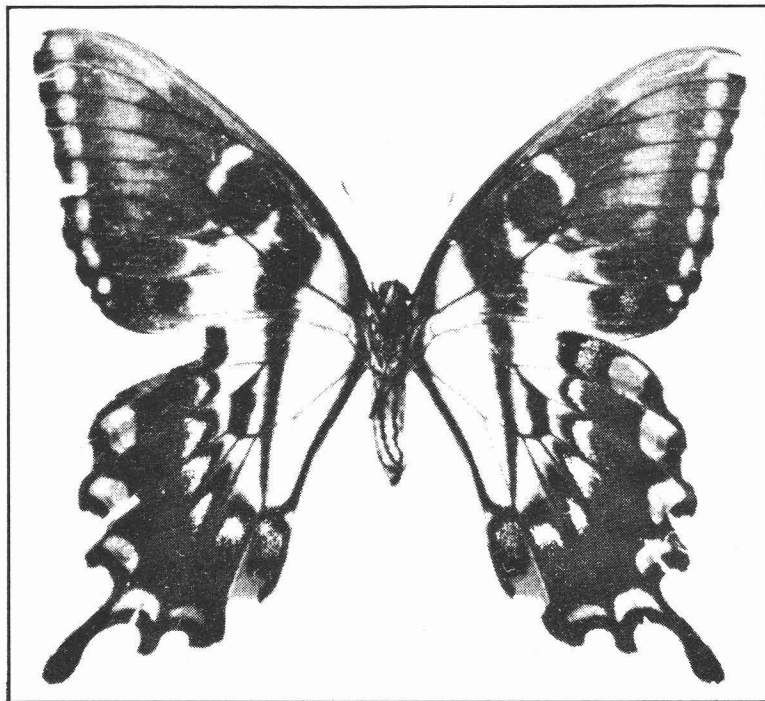
I often ask myself what I really learned from all this. I am not at all sure whether I learned that this melanism is a genetic thing. I am not at all sure that I learned how to kill a butterfly. Was the cyanide too weak? Are gravid butterflies less susceptible to cyanide? Did the cyanide have anything to do with the fact that succeeding generations were all abnormal. Were the 'dark genes' dominant? If so where did all the other dark *phlaeas*



Speyeria atlantis. abnormally dark. Islesboro, ME.

Papilio glaucus

semi-melanic
aberration
Brown's Mill VA



Euphydryas phaeton. aberrant ♂
Manlius, NY

I did learn one thing, though. I learned how not to pin a butterfly. I decided to use the method recommended to me by Charlie Covell. He said that he used waxed paper over the wings, because it was easy to see the butterfly while working. So I used waxed paper, and when all the butterflies --all three generations --were pinned I put them in the sun to dry.

Well, I kept the butterflies, and such as they are I still have them. It was a heartrending experience to remove them from that pinning board. They aren't the kind of children a proud parent looks forward to showing off in front of company.

Jo Brewer ed.

Franklin Co. DB found L. arthemis x astyanax hybrids common at Amherst in June, and pure specimens of each species further north in Shutesbury. E. phaeton was common, mid-June, at Amherst (DB). L. eurydice was taken 1 July, and L. appalachia and L. p. anthedon 15 July, at Amherst (DBx). H. gracilis was numerous at blueberry blossoms late May at Groton, Middlesex Co. (BW) and S. abbottii numerous 9-21 May at Amherst (DB). C. undulosa and P. myops appeared very early, 17 May, at Dedham, Norfolk Co. (DW). H. luscitiosa was taken 6 July at Sturbridge, Worcester Co. (DB); D. versicolor 6 July at Sturbridge (DB) and 7 July at Dedham (DW); D. hylaeus 21 July at Dedham; P. pandorus 8 Aug. at Sturbridge (DB). ♂♂ came to tied ♀ A. luna, H. cecropia, and C. promethea 16 May in Dedham, but none to A. io over three weeks in May & June (DW); in Westport, Bristol Co., DB took A. luna 1 June, A. io 2 June, and C. promethea 12 June. H. lucina was active in Dedham 25 Sept from larvae on Spirea (DW).

RHODE ISLAND: C. irus was noted 20 May, and S. ontario 5 July, at Charlestown, Washington Co. (DBx).

CONNECTICUT: P. viator was taken in a marshy area at Rocky Hill, Hartford Co., 3 July (DBx). C. gryneus was common 3 May and 17 July, Rocky Hill (DBx). From Pomfret, Windham Co., BW reported D. versicolor 26 June and 3 July (♂♂), and 15 and 21 July (♀♀); on 16-18 July, P. astylus, P. achemon, & S. eremitus. Also took Eutelia pulcherrima 28 May, early for this species.

NEW YORK: The April heat wave was followed by a record wet, dull summer and early onset of the fall freeze. E. icelus was taken as late as 1 July in Catskill, Greene Co. (JB); A. vialis and A. hianna were common at Karner, Albany Co., 7 June (FF); EJ found E. dion 18 July amongst saw grass at edge of McLean bog, Tomkins Co.; DB took P. massasoit 5 Aug in Harriman St. Pk., Rockland Co., and P. zabulon 13 Aug in Flushing Meadow Pk., Queens Co. Anthocaris midea occurred 13 April - 3 May in Catskill (JB), N of range cited by Shapiro; MI failed to find it in '76 at Suffolk Co. site previously reported. S. caryaevorus reported swarming from late June to mid-July at Manlius, Onondaga Co., by EJ, who took a ♂ S. liparops strigosum with very large orange fw patches; he found S. acadica common about McLean bog 18 July. L. melissa samuelis was common at Karner 7 June (FF), with a late ♀ 19 June (DW) and the 2nd brood flying 19-20 July. B. toddi ammiralis taken 4 July at Catskill (JB). EJ reported A. celtis 23-27 June at Manlius, where he later found S. cybele common after several poor years; he is observing a large colony of E. phaeton in an upland dry field where he can find no C. glabra growing. The Manlius colony of P. batesii he reported in '74 has been paved (correspondent's comments not printable); R.I.P. EJ further reports several large colonies L.p. anthedon at Manlius; he found C.i. inornata common 27 June at Black River, Jefferson Co. (apparent range extension), and C. i. heinemani common 14 Aug. at Clayton, Jefferson Co.

MOTHS JB took Thyrus maculata 7 June at Catskill, and S. cerisyi and A. virgo 17 May (early); H. maia at Albany 3 Oct. EJ observed many Dyspteris abortivaria in Manlius, mid-July, at edges of puddles at night. His list of less common Catocalae included subnata, relicta, innubens, cara, amatrix.

NEW JERSEY: TW recorded E. juvenalis "thousands" 12 May in Wharton S. Pk., Burlington Co., along with A. hianna and worn ♀ H. metea; he took E. bimacula 6 July at Woodmansie, Burlington Co. E. dion taken in Hatfield Swamp, Essex Co., by RM, who noted P. viator flight at Hackensack meadows, Bergen Co., from 20 July to 13 Aug, maximal 30 July. MI recorded C. augustinus & polios 15 April and C. niphon and irus 30 April at Lakehurst, Ocean Co., where RB took E. ontario and P. m-album 26 June. RM took S. acadica 27 June in Hatfield Swamp. TW took a ♀ V. virginensis dry form hibernator at a puddle 12 May in Wharton St. Pk., and saw A. celtis commonly latter half of Aug. at Washington Crossing St. Pk., Mercer Co. TW observed Isturgia truncataria about puddles at Wharton S. For. 12 May. Without regret, RM reported declining numbers of L. dispar at W. Caldwell, Essex Co., and noted Catocalae: grynea, 26 June - 30 July; amica; 17 July - 12 Aug; connubialis 2 July; amatrix 3-25 Aug; cara 16 Oct.

PENNSYLVANIA: Several cited a very good season despite poor weather: very dry spring, followed in Northeast by below normal temperatures from May on, including very low nights in mid-summer; normal in southeast until early end in early October; DG cites 73 butterfly species taken, 8 over previous high; GE in Lancaster Co. cites early records (late March) for E. juvenalis, P. rapae, C. eurydice and philodice, C. augustinus (3 weeks early), and C. argiolus. E. martialis 8 May, N Lancaster Co. (GE), and Benner Twp., Centre Co., 26 July (FF) with E. lucilius; E. baptisiae common 3-20 Aug, SW Luzerne Co. (DG). A. samoset, 15 May, Kingston Twp., Luzerne Co. (DG); N. ilherminier 1 July in Franklin Twp., Luzerne Co. (DG) and 4 Aug, 8 Sep, Montgomery Co. (TW). DG found a colony of E. bimacula in marsh by Lake Ganoga, 2300', Luzerne Co., active 17 July - 15 Aug. On 25 July GE found score of ♀♀ A. delaware settling on low vegetation at 1800 hrs. P. zabulon was found very abundant in Montgomery Co. by TW, who took H. phyleus 29 Aug. at Glenside, Montgomery Co., outside the coastal plain area. A. lyciades was reported low in Berks Co. by TW (cf. JF for Maryland). P. communis was reported in usual numbers by GE in Lancaster Co. and once, 23 Sep. at Ft. Washington Montgomery Co. (TW). Immaculate T. pylades were taken in Luzerne and Berks Cos. by DG & TW. E. nicippe was breeding in Lancaster Co. 9 July (earliest record for GE) to October. A large colony of C. borealis was found by FF 12-28 July 150' above Spring Creek, Benner Twp., adults feeding at flowers of A. tuberosa, M. alba, and A. millefolium. FF found 2nd brood E. laeta 19 & 24 July at Black Moshannon St. Pk., Centre Co. (Record) ♀ & ♂ at Spirea alba flowers in marsh near oak-maple-hemlock-white pine woods, no beech found; S. liparops and S. acadica also present. All hair-streaks: melinus, liparops, falacer, acadica, caryaevorus & titus increased and 10 d. early in NE Pa. (DG), but low (except titus) in Lancaster Co. (GE). Re P. m-album, GE reports freshly emerged specimen 19 April, indicating overwintering in Lancaster.; taken 2 Aug, Schuylkill Co., and 7 Aug. (by J. Smaglinski) and 24 Sep, Lancaster Co.; 3 broods indicated. C.a. pseudargiolus flew by hundreds 31 May, French Creek St. Pk., Berks Co. (TW). P. comma ♀♀ were taken at nettle 1 July in Flourtown, Montgomery Co. (TW), P. progne 24 Aug at Lackawanna St. Pk., Lackawanna Co. (DG). P. interrogationis was common thruout the year at Lancaster Co., with light form present by late July. N. antiopa seen by hundreds in Carbon Co. mid-July (last outbreak '69, DG), but not increased in Lancaster Co. (GE). A. clyton taken 30 July in Rothsville, Lancaster Co. (RB); albanic L. archippus 10 June at Scotia Barrens, Centre Co. (FF); 3rd brood archippus on Tinicum Marshes, Delaware Co., 1 Sep, showed some specimens as dark as floridensis (TW). A ♀ S. idalia was taken 26 July at F.E. Walter Reservoir, Carbon Co. (DG); cybele and aphrodite were up in Carbon & Sullivan Cos.

after several poor years. TW took B. toddi 14 June, Ft. Washington, and 29 Sep, Media, Delaware Co. GE in Lancaster Co. reported V. atalanta high again, and L. bachmanii increasing, with fresh specimens taken from July into October; 2 fresh ♂ E. claudia 31 Aug, Northumberland Co. L.p. anthonid taken 19, 24 July at Black Boshannon St., Pk., (FF); large colonies at F.E. Walter Reservoir, and W Monroe Co., 15 July & 12 Aug., with many at sap on Betula populifolia (DG). GE found C. pegala numerous 30 June in Columbia and adjacent Cos., with full range of forms from alope to nephele at all sites.

MOTHS: WB reporting on BLB collecting at a new home site on an open hilltop area in Quakertown, Bucks Co., notes total catch down to 20% in comparison with former wooded collecting site. Better numbers on P. pandorus, M. sexta, S. jamaicensis; great reduction in P. excaecatus (zero, previously a pest), D. pholus, S. abbottii, D. inscriptum; also taken: H. lineata, S. eremitus, C. jasminearum, S. kalmiae; all Saturniidae & Arctiidae greatly reduced; Catocala also much reduced, but took subnata. Total moth species 211, compared with 359 at previous site. TW found Schinia arcifera common & fresh 1 Sep on Tinicum Marshes, and Pyrausta niveicillialis common about stream-banks, Hissackickon Ravine, Philadelphia.

MARYLAND: Early warm spells had little effect, butterflies not numerous until the usual early April; erratic wet and dry spells altered occurrence of some species; season ended abruptly in early October, 1 month early. JF reporting Calvert Co. and vicinity cites an "off season" with only 73 butterfly species (31 Hesperidae), and notes occurrence of A. vialis, A. delaware, H. leonardus, E. lucilius, and T. confusus; reduced numbers of P. panoquin, P. ocola, A. hianna, L. accius (hundreds in '74 & '75), E. icelus & zarucco, S. hayhurstii, T. bathylus and A. lyciades. P. polyxenes continued low; P. marcellus high (JF); but JS in Montgomery Co. reported latter species low, P. glaucus high, with 70/30 light/dark ♀ ratio, and no B. philenor. JF reported P. eubule & E. lisa much reduced, Lycaenidae generally scarce, but took C. henrici 17 April; L. archippus, A. clyton, & C. cardui all down; B. toddi 8 Sep, a late date (cf. TW for Pa.). JS noted Anisota senatoria larvae defoliating Oak in July & Aug; and took a ♀ E. imperialis 20 July.

URBAN COLLECTING: CB lists for Central & Riverside parks, New York City: P. interrogationis, June, common; A. numitor, C.a. pseudargiolus, P. glaucus, June; V. atalanta, 15 July; P. rapae and C. philodice, full season. SG reports for M.I.T. in Cambridge, Mass: E. clarus, P. rapae, C. philodice, S. calanus falacer, P. interrogationis; also S. arctica, L. unipuncta, P. precatonis, C. illia & (prob.) micronympha, B. baltimoralis, and H. olinalis.

DANAUS PLEXIPPUS Observations: Spring migration was "good" in Maryland 20 April to 6 May (JF) and a few individuals were seen in Suffolk, Co., NY 9 May (DW). RL recorded very few in Gateau Co., P.Q.; RM saw small numbers in late summer and fall in N NJ. In contrast, DG reported 270/hr. on 13-15 Sep along the Susquehanna R. in Bradford Co., Pa. JF considered the fall migration rather weak, from 20 Aug. to 16 Oct., with concentration 22 Sep, Plum Pt., Md. FOOD PLANT & REARING Observations: E. persius found and reared on Lupinus perennis, Merrimack Co., NH, entered larval diapause July '75, emerged May '76 (DW). S. ontario from Ocean Co., NJ, confined by RB with Quercus stellata, alba, and Prinus oviposited profusely, on stellata only. S. caryaevorus larvae were beaten by RL 9 June at Lucerne, Ontario: 1 from red oak, 5 from butternut (sic) hickory, 21 from white ash (?new foodplant); confirmed by genital dissection of imago. He also reared G. lygdamus from larvae on sweet white clover. JB noted larvae of C.a. pseudargiolus on flower buds of Viburnum acerifolium, with ants in attendance. RB induced oviposition by A. clyton on Celtis and reared larvae successfully under 24 hr. photoperiod. JB took a larva of D. pholus on Diervilla lonicera. A brood of C. promethea reared (DW) out of doors from a wild Mass. ♂ and reared Jefferson, NH ♀ produced numerous 2nd brood ♀♀ in late July to which no wild ♂♂ were attracted; status of 2nd brood in Mass. remains uncertain. Park of a brood A. octomaculata from Cambridge, Mass. remained in pupal diapause from July '74 to emerge May '76 (DW). SG reared Trichotaphe levisella from Aster macrophyllus in Cambridge, Mass.

PREDATION NOTE: Isturgia truncataria taken by the sundew Drosera filiformis, Burlington Co. NJ (TW).

ABERRATIONS: Note to follow in later issue.

ZONE 9: NORTHERN NEOTROPICS. Contributors: Ronald H. Leuschner, Michael Plagens, Daniel L. Burris, Michael A. Rickard, William H. Howe, Douglas Brown, Eduardo Cecilio. Welling M. (coordinator), Edward C. Knudson, Frank R. Hedges. Notes about weather patterns during 1976, as far as known. The year 1976 falls into the category of the few preceding years.. that is of erratic conditions. In Guatemala drought was widespread and longlasting. In the valley of Zacapa near the Honduras border it scarcely rained all year. In northern and west-central Belize, crops were lost by lack of normal rain in its season. In the peninsula of Yucatan, excess rain in May and June was bewildering, followed by absolute drought conditions until September, drastically affecting insect populations. For the 5th year in a row, western Yucatan received more precipitation than the normally wetter eastern parts of the state and Quintana Roo, when it did fall, usually out of season. In Yucatan it rained all December, something unheard of. In the highlands of Guatemala, cloudy skies and only an occasional drizzle were encountered in what should have been the climax of the rainy season from August through November. Howe and Brown report normal heavy rains for northern Mexico in equatorial forest zone areas, and dryness in the interior deserts westward during late August.

MEXICO: Reports from a few localities show that butterflies were out in numbers in the northern parts of the country. In Quintana Roo and Yucatan, collecting was unproductive to an extreme. In southern Chiapas collecting was also very very poor, the worst in seven years.

Resume by States: SONORA- Plagens collected 52 specimens in three hours at Guaymas on Christmas Day, finding mostly common widespread things (possibly indicating a very late flying season), including: Eurema lisa, Ascia monuste, Kricogonia castalia, Mestra amyone, Phyciodes texana, and Euptoieta hegesia.

CALISCO: Leuschner tried collecting around Puerto Vallarta in November, finding Junonia nigrosuffusa, Dryas julia, Astraptes fulgerator, and other common species, and seeing Morpho polyphemus.

BAJA CALIFORNIA SUR: Leuschner observed a migration of Pierids off Cabo San Lucas, finding the dominating species a "large orange sulphur" (probably either Phoebis argants or agariths), and catching an Ascia monuste accompanying the migration.

HIDALGO: Howe and Brown spent two days around Zimapan, finding collecting poor in late Aug, collecting only Battus philenor, Eurema nicippe, Zerene cesonia and Agraulis vanillae.

SAN LUIS POTOSI: Burris found Dexocampa pavon, D. laure, Didonis aganisa, Hamadryas feronia, Smyrna blomfieldia, Eurytides phaon, and Morpho peleides along with other common sorts of El Salto on August 5th. During the next week at El Naranjo, Burris continued collecting, finding additional species such as Rhetus arcus, Victorina epaphus, Temenis laothoe, Itaballia viardi, Papilio anchisiades, Opsiphanes boisduvali, Taygetis uncinata, and other widespread common species. In the Tamazunchale area Howe, Brown, Rickard, Knudson, and Hedges all collected, and according to the lists, some very interesting things turned up. The list submitted by Rickard representing the last three collectors is one of the finest lists I have seen for a long time and most remarkable as it represents (along with material taken in Tamaulipas) 391 species identified (and not including another 20 not so) taken in a total of six days! The list submitted by Howe contains some exceedingly interesting records also, confirmed by Dr. Frederick H. Rindge at the American Museum of Natural History. The collecting done in 1976 in that area only goes to prove the great northward thrust by equatorial zone species, much more than was suspected even only a decade ago and that thanks to diligent collecting by collectors from Mexico as well as the United States is now being made known. Some of Howe's interesting records taken in late Aug are: Euptychia calixta, Catasticta flisia, Catonephele numilia, Siderone marthesia, Myscelia ethusa, Thecla cypria, Eryphanis aesacus (taken by Brown!), Oenomais ortygnus, Thecla theocritus T. polibetes, T. barajo, Emesis lucinda, Limenitis archippus, Papilio erostratus, Graphium phaon, Manataria maculata, Epiphele adrasta, Historis odius, and from a little further west of Tamazunchale and Xilitla Gynaecia dirce, Prepona meander, Anaea forreri, A. glycerium, A. pithyusa, A. morvux, Protogonius hippona=Consul fabius, Adelpha celerio, Doxocampa cherubina (!), Caligo uranus (taken by Brown), Lycorea ceres, Danaus gilippus, D. eresimus, Dismorphia melite, Tithorea terracina duenna. Some of the moth captures from the Tamazunchale area reported by Howe and Brown were Sphinx geminus, Automeris metzli, Rothschildia splendida, Manduca florestan, Cautethia sp., etc. The Rickard-Knudson-Hedges list is so extensive as to not be able to publish it all here, and those species taken at the Tamazunchale area are not designated, although the list is marked with those species taken only in San Luis Potosi without specifying which of the three localities at which collecting was done. Some of the species not reported by Howes from S.L.P. and on the latter list were: Myscelus amystis, Phocides urania, Astraptus alardus, Nisoniades godma, Pachyneuria licisca, Bolla cupreiceps, Quadrus cerialis, Paches polla, Anastrus sempiternus, Staphylus vulgata, Vinius tryhana, Aecas aecas, Cymaenes fraus, Moeris vopiscus, Papias subcostulata, Lycas argentea, Cynea Irma, Mucia zygia, Mellana montezuma, Eprius veleda, Morys valerius, M. geisa, Tiryntia huasteca, Thespieus dalman, Vacerra eglia, Niconiades xanthaphes, Dismorphia amphione, D. melite, Hesperocharis costaricensis, Eureme albula, E. dina, E. salome, Pteronymia cotytto, Hymenitis oto, Euptychia hesione=ocirrhoe, E. usitiata, E. glaucina, E. sp. near salvini (!), Iritanassa ards, T. obscurata, T. myia, Hypanartia lethe, Pyrrhogyra otolais, Catonephele nyctimus, Myscelia cyaniris, Adelpha iphicia, Baeotis hisbon, Lasaia sessilis, Lymnas cephe, Mesene croceola, Theritas regalis, Atlides carpasia, A. carpophora, Thecla parthenia, Chalybs janias, Rekoa meton, Panthiades m-album, P. bitias, Imolus echion, T. scopas, T. coronta, T. basilides, Thecla maeonis, and Everes comyntas.

TAMAULIPAS: The Rickard-Knudson-Hedges list covers Ciudad Victoria, Galeana Canyon, Gomez Farias, Ciudad Mante, and Paso del Abra, but without specifying which of the species were taken at which locality. Some of the highlights of the 391 identified species taken in six days from this state are: Urbanus doryssus, U. dorantes, U. teleus, U. proce, U. proteus, U. viterboana, U. alva, U. pronta, U. esmeraldus, Typhedanus ampyx, Codatractus hyster, Achalarus jalapus, Oneses hyalophora, Aethilla lavochrea, Achylodes selva, Helias phalaenoidea, Heliopetes sublinea, Bolla phylo, Piruna microsticta, Virga clenchi, Mnasicles geta, Moeris rita, M. stroma, M. hyagnis, Naeolus naevolus, Orses cynisca, Rinthon osca, Poanes inimica, Euphyes donahughii, Vacerra bonifolius, Niconiades nikko, Parides montezuma, Papilio ornithion, P. astyalus, P. torquatus tolus, P. erostratus, P. victorinus Leptophobia arpa, Melete isandra (!), Ascia sevata (!!!!!), Dircenna klugi, Cyllopsis gemma, C. hedemanni, Eryphanis aesacus (this reconfirms the Howe report on this species, only this time it is from Tamaulipas), Heliconius ismenis, Chlosyne rosita, C. definita, Phyciodes ptolyca, P. claudina, Callicore=Diaethria anna, Hamadryas glauconome, Asterocampa argus, A. louisa, A. celtis, Euselasia hieronymi, Mesosemia telegone, Calydnia hiria, Eumaeas minyas, E. debora, Atlides dydamion, Cyanophrys miserabilis, C. herodotus, C. goodsoni, C. amyntor, Thecla mycon, Strymon melinus, S. buchholzi, S. rufofusca, S. cestri, S. bazochii, S. yojoa, S. sedecia, S. columella, Zizula cyna. We suggest anyone wanting to have the complete list for study write directly to Michael A. Rickard.

YUCATAN: Diurnal collecting was about nil, however there were a few nights of good collecting in the state. Welling collected in July near Maxcanu and found Erebus odora swarming; the road nearby strewn with dead specimens due to the traffic. Sphingidae were out in fair numbers in July and early August, Pholus vitis having a terrific population explosion all across Yucatan and Quintana Roo. In Valladolid, hundreds of this species were seen sitting at mercury vapor lights along a new avenue were P. vitis, P. satellitia, Cocytius lucifer, C. cluentius, Phlegethontius sexta, P. occulta, P. rustica, Sphinx merops, Pseudosphinx tetrico, Isognatha rimoso, Erinnyis yucatan, E. alope, E. lausaxxi, E. crameri, E. ello, E. oenotrus, E. obscura, E. domingonus, Pachylia ficus, P. syces, Epistor ocypete, E. tugubris, Cautethia yucatan, Perigonia lusca, Xylophanes pluto, X. tersa, and Celerio lineata. Pholus triangulum was taken also, a very good record for western Yucatan.

QUINTANA ROO: Collecting for diurnals was also very bad as in Yucatan. Night collecting brought in a few good Sphingidae, but little else, including a jaunt to the region of X-can in November which produced Madoryx oiclus, Xylophanes chiron, X. loelia, X. libya, X. porcus, Episotr gorgon, Amblypterus gannascus, Protambulyx strigilis, Phlegethontius leucophila ssp., P. lefeburei, P. ochus, among other commoner species.

CHIAPAS: News received from southern Chiapas indicates a very poor collecting year, perhaps the worst in seven years - Rains stopped in September, prematurely, and from then on collecting was dismal. Urania fulgens was almost completely absent.

BELIZE: Formerly known as British Honduras, Welling collecting nocturnals at Middlesex, Stann Creek District, in August and again in November, finding collecting very poor. A few good species were taken i.e., Phlegethontius hannibal, Xylophanes belti, X. titana, X. tyndarus, Hemeroplanes nominus, Cocytius duponchel. Blacklighting at Sibun Camp, Cayo District brought in Xylophanes loelia, X. neoptolemus, and Phlegethontius ochus. In the Augustine Pine Ridges behind El Cayo, Cayo District, Welling collected two weeks during August, finding few butterflies but taking a few new species for the Yucatan peninsula, mostly Theclinae, Erycinidae, and Hesperidae. In November, a new species of Cyllopsis, currently being described, was taken along Thousand Foot Falls Road in the Pine Ridges, along with C. gemma. Nocturnal

collecting in this area was fair, Automeris io being taken for the first time in the Yucatan peninsula here. In Augustine, Amblypterus ypsilon, Pachylia resumens, Xylophanes annubus, and other sphingids already mentioned in this report were taken. An exciting, stormy wind-swept night on top the Bent Pine Fire Lookout near San Luis, Augusting Pine Ridge, brought in only one Pachylia resumens. Melete isandra was taken near Georgeville, Cayo District. GUATEMALA: Welling spent from late August to November collecting when time was available. Everywhere diurnals were scarce, and night collecting was only mediocre to very poor. No time was wasted collecting butterflies, except in El Peten. Following is a resume by departments. EL PETEN - At Las Canas, a few days spent in Sep collecting a few things out. At Jobomche 625 m. ele. small series of things taken never found in this department (Leptophobia aripa, Pteronymia artema, Dione moneta) and others known only from a few specimens (Mechanitis saturata, Hypanartia godmani). Does this prove that during poor years, more rarer things can be found? ZACAPA - At La Union at 850 m. ele. in Sep night collecting was fair, a few sphinxes and Saturniids being taken, especially Phlegethontius corallina, Amphimorea walkeri (only one), Xylophanes titana (many). SOLOLA - A few days were spent collecting nocturnals at Chuckexik 2200 m. ele. and Xajaxac 2325 m. ele. with poor results, during October, only one pair of Epistor lugubris found at the former locality. QUETZALTENANGO - At Santa Maria de Jesus, about 1,550 m. ele., several nights of very excellent collecting with mercury vapor lights after heavy rains in the afternoon and evening were had, in October, but Saturniidae and Sphingidae were noticeably absent, except for a Sphinx sp.

ZONE 11: ONTARIO. Coordinator: Quimby Hess (QH). Contributors: Paul Catling (PC), W.J.D.Eberlie (WJDE), Dave Elder (DE), Nick Escott (NE), Alan Hanks (AH), A.M. Holmes (AMH), Henry Kowalyk (HK), R.A. Layberry (RL), W.E.H. Munro (WM), Jim Pilkington (JP), Walter Plath Jr. (WP) Darryl Stewart (DS), Ken Thorne (KT), Norman Tremblay (NT), Jim Troubridge (JT).

GENERAL: Most collecting has been in southern Ontario, whereas in Northern Ontario collecting has been in widely separated localities, mostly on an intermittent basis. In 1976, Northern Ontario reports came in from the Cochrane, White River, Marathon, Longlac, Thunder Bay, and Atikokan areas. WP spent six weeks of intensive collecting in the Lukinto Lake/Longlac/Geraldton area in June & July. NE collected in the Marathon area, QH collected the Cochrane to Atikokan area in June, while DE collected for QH most of the season in the Atikokan/Quetico Provincial Park area. These efforts seemed to confirm the western influence extending easterly to Cochrane, with a more sharply defined boundary for western species in the Atikokan area. This statement is based partly on the following: (1) A strong colony of Pieris occidentalis was located at Atikokan (DE). Previous records (Royal Ontario Museum) of this species are only from Lansdowne House, about 250 mi. N of Atikokan. (2) Euchloe ausonides mayi collected at Lukinto Lake e. of Longlac (WP). (3) Hyalophora columbia, Quetico Park (QH); H. nokomis, Rushing River Provincial Park near Kenora (QH). (4) A strong colony of Plebejus argyrognomon at Lukinto Lake (WP). 1976 Northern Ontario highlights included above average abundance in June/July of O. jutta acerta in the region extending from Cochrane westerly to Atikokan in suitable habitats (QH); above average abundance of O. macounii in June in the region extending west and south of Hearst to Marathon & Thunder Bay; and the infestation of A. luna in the Atikokan/Quetico Provincial Park area (DE) (the only other report was of fair numbers in the Kingston area) (NT). Southern Ontario highlights included above average abundance in May of O. chryxus strigulosa in the Muskoka/Haliburton/Bancroft area (QH, NT); above average numbers of P. interrogationis in SW Ontario (QH, etc); a dearth of D. plexippus during the fall migration (NT). In both the upland areas of Southern Ontario and in most of Northern Ontario P. glaucus canadensis was common; P. polyxenes asterius was average or down in the rest of Southern Ontario; P. troilus occurred in the Niagara/Lake Erie area (DS, JT, WJDE); and P. cresphontes average in the Windsor/London/Pt. Pelee area (DS, QH, JT). H. cecropia was average in the Muskoka area, with QH reporting 4♂♂ coming to 16 tied ♀♀ spread over an 8 mile distance. H. cecropia was reported from Quetico Provincial Park (DE), Haliburton (W) and Stouffville (NT); A. polyphemus, from Lukinto Lake (DE); C. prometheus from the N shore of L. Ontario (HK); and A. io at Delaware (KT). Cynthia cardui was again down (QH, etc); N. vau-album j-album was above average in both S. & N. Ontario (WH, NT). Also A. celtis, as usual (DS, QH), Point Pelee Nat. Park; A. clyton, at Point Pelee Prov. Pk. & London (DS, JT); Lycaena dorcas, at Marathon (NE), Lukinto Lake (WP, WJDE) & Bruce County (AH); G. lygdamus couperi, a vigorous colony in Tyendinaga Twp. (WJDE); P. argyrognomon, a strong colony at Lukinto Lake near Longlac (WP); Eurema lisa, one fresh specimen at Ajax (NT); Euchloe olympia rosa, Grand Bend (QH), Britt (JT), & Twin Lakes, N of Peterborough (DS); H. comma laurentina, Marathon (NE); H. leonardus, Bruce County (AH, JT, NE, QH, DS); H. sassacus at Parry Sound, Marathon (WP), & Atikokan, & Twin Lakes N of Peterborough (JT, NE, QH, DS); Celerio intermedia, common at Lukinto Lake (WP) one at Haliburton (WM); Amphion nessus, abundant in the Muskoka/Bancroft area (NT) and at Atikokan (DE).

SPECIAL NOTES: Papilio kahlo: in 1976 in reviewing the collection of the Royal Ontario Museum, QH & JCE Riotte identified one specimen of this species, collected by OD Boggs, near Cochrane, N Ontario 24 May 1958. The described range is from central Manitoba N to the Pas, W to Punnicky, Sask., and S to Cardnuff (cf. Butterflies of Saskatchewan, RR Hooper, Pub. Sask. Dept. Nat. Res.). P. machaon hudsonianus: despite intensive search by WP & QH in the Geraldton area, none were found. They last collected this species there in 1971. Thorybes bathyllus: 1976 study of the collections of KT, JT, QH & WP has confirmed collection of this species at Turkey Point, Kent Bridge, Caledonia, and Grand Bend. Euptoieta claudia was collected at Kent Bridge in July by AMH and near White River in June by JP. There were two new records for Ontario - Coenonympha mipisiquit heinemani at Bell's Corners near Ottawa - Aug. 14 - Sep 17 (RL); and Oarisma garita on LaCloche Island 26 on June 26 (PC).

Also of interest - Pieris virginiensis was given the protection of the Endangered Species Act by the Government of Ontario. The 1976 Ontario Summary published by the Toronto Entomologists' Association will include notes on all butterflies which are known to occur in the Province of Ontario.

THE SPREADING BOARD

By C. V. Covell, Jr.

As announced, (Jan issue), the topic this month is the spreading board, which is used for setting wings more often by lepidopterists than is the block method (see article by Jacqueline Miller, News 1971, no. 2).

I used to make my own spreading boards of balsa wood, but did not angle the sides of the board upward as one normally does. I was not, as a teenager, aware that the wings tend to droop a bit after the specimen is removed from the board, and the angling compensates for this drooping. You may find little or no drooping, but a large collection we recently added to our insect museum at the University of Louisville was all spread by use of non-angled boards, and the wings are almost all drooping.

Some of you may have pet ways to build good boards and use them, and I hope you'll write me about them. Below is an article on the subject by former Society Treasurer, George Ehle, 314 Atkins Ave., Lancaster, PA 17604:

SPREADING BOARD TECHNIQUES

I use conventional softwood spreading boards, but I cover them with graph paper (ten lines per inch). I have used spreading boards so modified for many years and find that the grid pattern is an almost indispensable aid in alignment of the wings. The paper I prefer for this purpose is opaque stock and not the translucent tracing type, and is available at most school supplies and stationery counters.

I apply the graph paper by means of a general purpose rubber-resin solvent-type adhesive. Ordinary household cements such as Elmer's Glue tend to become brittle with age and are unsuitable. The preferred adhesive is designed for flexible bonding of paper, rubber, fabrics, etc., and is available as an amber viscous liquid in cans at many housewares and hardware counters.

I cut the paper slightly oversize. (You may continue the paper down the sides of the boards as well, thus providing an excellent writing surface for pencil notations, to be later erased.) Lightly sand the surfaces as required (especially of old used boards), wipe off dust, brush on a thin coat of adhesive and dry completely. (CAUTION: toxic and flammable vapors : PROVIDE VENTILATION and KEEP AWAY FROM OPEN FLAME)

Apply a second coat of adhesive, as before, but allow to dry only briefly. Gently fold the paper in two along a center line and with a ruler or similar straightedge work the fold into the pinning groove. Holding the fold in the groove, press down the "wings" on either side with an outward wiping motion. Be sure to expel all air under the paper. Dry for several hours and then trim off excess paper by applying a sanding block to the edges of the board.

For cleaning brushes, thinning adhesive, etc., use lacquer thinner. (CAUTION: ALL LACQUER SOLVENTS SUCH AS ETHYL ACETATE, ACETONE, METHYL ETHYL KETONE, ETC., GIVE OFF TOXIC VAPORS AND ARE FLAMMABLE : PROVIDE VENTILATION AND KEEP AWAY FROM OPEN FLAME)

I store my spreading boards at all times in a low-temperature "oven." This accelerates setting and drying of the specimens, especially during humid periods, and protects the specimens from dust, pest damage, accidents and "curious fingers." The oven is simply a light plywood box about two feet high by one and one-half feet wide and a few inches deeper than my longest spreading board. The boards slide in on four slatted shelves. A hinged and latched door constitutes the entire front of the oven. Two slots, one at the bottom and one at the top, provide ventilation.

Near the bottom I installed a couple of ordinary porcelain incandescent lamp sockets, with the supply cord emerging through a small hole in the back. Depending on the weather and spreading load, one or two 40-watt lamps keep the oven warm and dry year around. (Incidentally, if the lamps are mounted vertically, they tend to last longer.)

For pinning strips, I prefer ordinary lined yellow scratch paper to the translucent tracing type so often used. Like the paper covering of my boards, the above is also a fibrous stock with ample friction to hold the wings in place. I usually use two narrow strips, up to 1/4" wide, instead of one wide strip. These provide easier access to the setting needles and, again, provide higher friction to secure the wings in their unnatural positions. Normally, I never pin through the wings except for the secondaries of skippers. As required, I may use additional short strips to flatten curled wing edges, twisted tails, and to smooth anal folds. After the specimens have all been spread, I apply a small drop of ethyl acetate to each head and thorax (to kill parasites and prevent revival), and directly place the board in the oven.

For small specimens, I cut my pinning strips as narrow as 1/16". To obtain strips with

smooth clean edges, I use a metal ruler or straight-edge and utility single-edge razor blades (not sold for shaving purposes). For cutting pinning strips, labels, sheet plastic, cord, etc., I find these blades indispensable. They are obtainable at most hardware and variety counters.

RELAXING TECHNIQUES

For relaxing specimens, I use a round two-quart plastic ice cream container with snap-on lid. In the bottom I place crumpled, damp newspaper or paper towelling. I always add a few drips of household disinfectant, such as Lysol (carbolic acid), to suppress mold. Over the above, I insert a disc of flyscreen, preferably plastic, to support the specimens.

Like many lepidopterists, I prefer to spread my specimens the same day as caught. On field trips in hot weather, I carry such a relaxer as the above in the car. At frequent intervals during the day I transfer the catch to the relaxer. Upon my return home, I immediately spread any valuable or prize captures and, time permitting, most skippers and many small delicate species such as blues, hairstreaks, etc.

Nothing is so annoying as trying to spread a "relaxed" specimen that has the head rotated 90° to the thorax, one antenna tangled among the legs and the other looped onto itself, one primary completely down over its secondary, legs stretched out and askew, etc. Specimens of good quality that I intend to store in paper I usually place on a spreading board with the usual pinning strips. The thorax is placed in the groove but not pinned, and the wings are held in the natural folded position and to one side of the groove. I may elevate both primaries together to facilitate later setting. A few deftly placed pins nest the antennae along the costa, support the abdomen (preferably away from the secondaries), and draw the legs close to the thorax. This board goes into the oven along with the rest, but need not dry as long.

When I encounter a badly distorted papered specimen, I first expose the body and appendages for a few seconds to boiling water vapor, such as that from the spout of a teakettle. With a forceps I hold the body at the edge of the vapor stream, with the wings away. Also, a drop or two of the boiling water applied to the underside of the thorax of most robust species usually relaxes the wing muscles beyond that produced by ordinary relaxing methods. Following the above "pre-relaxing" procedure, the specimen is relaxed in the usual fashion.

George Ehle
February 9, 1977



Let's just go in and look around. We can check the mortality rate later.

-H.L. King '76

with the safety of endangered or threatened organisms. Federal land management agencies need 'watchdogs too, and the Endangered Species Act can function as one of them.

In his article, Mr. Zeigler hypothesizes that an organization could force a civil suit on some hapless collector who, in reality, had done nothing wrong. Theoretically this is possible, but realistically I can see little chance of its happening. Even the largest conservation organizations *know* nothing about, and are *doing* virtually nothing about endangered butterflies. It is hard to imagine that they would have either the knowledge or the interest to bring about a law suit. Only the Xerces Society has enough *knowledge* to bring suit against an individual, but last year Xerces adopted a policy which states that collecting does not generally pose a threat to butterfly populations, *habitat destruction being the principal cause of declining numbers*. Only two of this 550 member organization dissented, so I see no justified fear that Xerces will be cast in the role of prosecutor.

Efforts of the Federal Endangered Species Program are spent mainly on the preservation management, or acquisition of the habitats of threatened or endangered species. All butterflies listed to date represent endangered ecosystems which are shared by other equally endangered forms. For example, the Antioch

Sand Dunes (Contra Costa CA) are not only the home of the remaining Lange's metalmark populations, but also the habitat of two endemic endangered plant candidates, and at least six other endemic insects. A similar situation exists in the San Bruno Mountains.

OES is receptive to substantive information of any kind that any lepidopterist cares to provide, which is witnessed by the fact that only a fraction of the butterflies originally proposed as endangered or threatened, were finally listed as such. The Endangered Species Act is intended to halt continuing extinctions and drastic population declines of any member of our American wildlife resource, be it a California condor, a grizzly bear, or a mission blue butterfly. I am convinced that the Endangered Species Act *can* work to save butterflies. I wonder if the extinct Xerces blue would still be flying today if the Act had been in effect in the 1940's. Twenty years from now we may be in a position to judge.

Larry J. Orsak,
Division of Biological Control
University of California
1050 San Pablo Ave.,
Albany, CA 94706.

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IMPORTANT NOTICES

THE XERCES SOCIETY will be holding its Annual Fourth of July Butterfly Count this year for the third season. The Butterfly Count is an opportunity to spend a day in the field with friends, at the same time supplying data which could be of value in research. If you think you might be interested, set aside a day around the Fourth and send your name and address to the editor of the Count, Mary Hathaway, P.O. Box 123, Durham, NH 03824. You will be mailed information about the Count, forms, and instructions as soon as they are available in early MAY. Xerces Society members will receive these automatically and need not request them.

THE ANNUAL MEETING OF THE LEPIDOPTERISTS' SOCIETY each year features the raffling of door prizes at the Saturday night banquet. We have depended on several generous donors of prizes in the past, but now wish to solicit prizes from members for the 1977 meeting, July 21-24, at Boulder Colorado. If any of you would like to donate specimens, equipment, lepidopterous novelties or books for this purpose, please contact C.V. Covell Jr., Dept. of Biology, University of Louisville, Louisville, KY 40208. Thank you.

THE INTERNATIONAL CONVENTION ON TRADE IN ENDANGERED SPECIES OF WILD FLORA AND FAUNA met last February in Berne, Switzerland. This is an organization of over thirty member nations, of which the United States is one. At the convention, a treaty was made delineating strict regulations as to the exportation and importation of

wild animals for commercial purposes. There are three appendices to the treaty. Appendix I is a list of large animals with stringent rules laid out in regard to their exportation. Appendix II is a list of species not on either the endangered or the threatened list, but which may become extinct if massive exploitation of them is allowed to continue. The list includes eight butterflies. These are the European butterfly, *Parnassius apollo* with all its subspecies and in all of its stages, and seven Ornithoptera in all of their stages and all of their subspecies. The Ornithoptera are: *O. alexandrae*, *O. allotei*, *O. chimera*, *O. goliath*, *O. meridionalis*, *O. paradisea*, and *O. victoriae*.

The ruling means that no individual can import any of these butterflies in any of their stages without an importation permit, and a copy of the export permit of the seller. This ruling makes it possible to estimate the extent of the exploitation for commercial use of the butterflies. It does not apply to the free exchange of butterflies between individuals. Applications for permits must give the number of insects and names of species to be imported. For further information, write to WILDLIFE PERMIT OFFICE, Fish and Wildlife Office, Washington DC 20240.

THE WRITING CONTEST which was announced in the Jan/Feb issue of the NEWS has been cancelled, owing to the fact that the magazine, Insect World Digest has ceased to exist. We deeply regret any inconvenience that its demise may have caused to members .

There will be a MEETING OF XERCES SOCIETY MEMBERS at the annual meeting of the Lepidopterists' Society in Boulder CO in July. Objects of the meeting are to enable Xerces members from east and west to meet each other, and to present a report to Xerces members who were unable to attend the annual Xerces meeting in NY in April. Information regarding time and place of the meeting will be available on arrival at Boulder.

It is with deep regret that we announce the death earlier this week of

PETER HERLAN of Carson City Nevada

Pete was twice host to the Pacific Slope meetings, and once to the National National meeting. He was a good and dear friend to us all, and will be sadly missed. A more complete obituary will appear later.

The announced change of prices for back issues of the JOURNAL to a uniform price of \$13 per volume, will not go into effect until June 1, 1977. You may therefore order available issues at the old prices until that time. Old prices are as follows: Vols. 1-24, \$8.50 -Vols. 25-28, \$10.00 -Vols. 29 On, \$13.00.

Cost of individual numbers depends on how many were issued. The following issues are now out of print: Vol.7, no. 3/4(combined in one issue); Vol.9, no 3/4; Vol.12, no.1/2; and Vol.21, no.1. Some others are in short supply. Some of the old NEWS issues are available at \$.25 each, mostly in the period of 1970 to date. In ordering, DO NOT SEND MONEY IN ADVANCE, as we might not have what you want. Send orders to C.V. Covell Jr., Dept. of Biology, University of Louisville, Louisville KY 40208.

THE EDITOR OF THE NEWS is endeavoring to establish a workable publication schedule for the NEWS with realistic deadlines which can be met. All former editors are by now probably thinking "Dreamer " and well they may, However, all contributors are hereby requested to memorize the following deadline schedule:

Material for publication in the summer issue(Jul/Aug) should reach the editor no later than June 7. For publication in the fall issue (Sept/Oct) - August 7
For publication in the fall/winter issue(Nov/Dec) October 7
For publication in the winter issue (Jan/Feb) December 7
For publication in the early Spring issue(Mar/APR) February 7

(Field summary coordinators please take particular note, and warn all contributors to turn in data in time for your Feb 7 deadline!) Material arriving beyond the deadline will be held over until the following issue, or until space permits. ALL contributors are hereby thanked in advance for their cooperation in this matter.

(If you don't want to memorize it, at least pin it up on the wall somewhere.)

NOTICES - Buy, Sell, Exchange (Cont.)

FOR SALE or trade for books on insects: Amazonas, South America Lepidoptera, Coleoptera, Orthoptera, all with data. Examples - 250 Ithomids @ 35¢ each; 100 Heliconts @ 50¢ each; Megosoma(pair) \$10.00 Also Canadian Lepidoptera. Q. F. Hess, 11 Esgore Drive, Toronto, Ontario, Canada M5M 3PQ.

FOR SALE: Large quantity of 1st quality, colorful, rare & common butterflies, beetles and other insects from Malaysia papered & dried, specially prepared for decorative and collection work. Free catalogue - write to Mr. F. W. Wong M/s Deco Enterprise, 100A, 1st floor, Simpang Rd, Taiping, Perak, Malaysia.

WANTED: Smith & Dyar - "Revision of the Species of *Acronycta*". (Proc. U.S. Nat. Mus. Vol 21, pp. 1-194). Les Ferge, Rt. 5, Town Line Rd., Wausau, Wis. 54401.

WANTED: For gardening project. Information regarding flowering shrubs that will attract butterflies. Also, will exchange eastern U.S. butterflies for species from other areas. All correspondence acknowledged and appreciated. Mrs. Pat Purdy, 2825 Sand Rd. N.E.; Roanoke, Va. 24012. U.S.A.

WANTED: *Agrias phalaedon fourmurae* ♂♀, *A. phalaedon viola* ♂, *A. pericles rubella* ♂♀, and *A. pericles xanthippus* ♂♀, all in 1A or IA condition. Will pay best prevailing prices. Stanley K. Dvorak, 2928 Union Avenue, San Jose, Calif. 95124, U.S.A.

BUY/EXCHANGE: Living material (minimum 24 ova, 12 pupae per species.) Write advising species, quantity, price/exchange required. Please enclose International Reply Coupon. Ray Adams, Carretera Principal 139, Tamaraceite, LAS PALMAS DE GRAN CANARIA, ESPANA.

EXCHANGE: Canadian *Rhopalocera* for the world-wide *Lycanidae*; also live material. W.W. Gregory, 1373 Hixon St., Oakville, Ontario. L6L 1R9, Canada.

WANTED: Expert in Amazonas, South America Lepidoptera to co-author proposed illustrated field guide. I have been photographing lepidoptera from Amazonas for some time. Write: Q. F. Hess, 11 Esgore Dr, Toronto, Ontario, Canada M5M 3PQ.

WANTED: Proceedings of the Boston Society of Natural History - Vol. 34 no. 13, Vol. 36 nos. 1,2, title page & index, Vol. 39 title page & index. Cyril F. dos Passos, Washington Corners, Mendham, NJ 07945

WANTED: Out of print moth or butterfly books relating to North American Lepidoptera. John G. Manesis, M.D., Fargo Clinic, 737 Broadway, Fargo, ND 58102.

RESEARCH REQUESTS

WANTED: Records on *Araneida* in Southwestern United States, notes on habitats and development stages. Any *Mygalomorphs* specimens loan or exchange. All records will be acknowledged. G. Krauss, Ent. 141 Alkier St., Brentwood, N.Y. 11717 U.S.A.

WANTED FOR MASTER'S THESIS: Arctiidae of Colorado: Information needed regarding species records, flight dates, localities, elevations, notes on habitats and food plant assoc. All correspondence will be acknowledged. Ira M. Heller, Biology Dept., Adelphi Univ., Garden City, NY, 11530 USA.

WANTED: Living material of *Strymon melinus* and pinned adults for a review and analysis of subspecies nomenclature. Information needed regarding flight periods, host plants, parasites, habitats, courtship and mating behavior, oviposition times and collection locality records for exact study of distribution. Glenn A. Gorelick (Biology), Citrus College, 18824 E. Foothill Blvd. Azusa CA 91702

WANTED: Arctiidae of Colorado: Information needed regarding species records, flight dates, localities, elevations, notes on habitats and food plant assoc. Wanted for Master's thesis. All correspondence will be acknowledged. Ira M. Heller, Biology Dept., Adelphi Univ. Garden City NY 11530 USA.

WANTED: Arizona skipper and butterfly records from northwest and northeast Arizona (Chuskas, Virgin Mtns, Cerbats, etc.) toward a proposed Annotated Checklist of Arizona Butterflies. R. Barlowitz, 785 Topaz Trail, Prescott, AZ 86301.

WANTED: Living material (live females or eggs) of the following *Phyciodes*: *P. tharos* from Manitoba west and the Rockies; *P. batesii* from the Mid-west and Great Plains; any *P. campestris*. C. G. P. Oliver, R.D. 1, Box 78, Scottdale, PA 15683.

NOTICES - Buy, Sell, Exchange

Members of the Lepidopterists' Society are invited to use this section free of charge to advertise their needs and offerings in Lepidoptera. We cannot guarantee any notices, but all are expected to be made in good faith. Please be brief, clear, and check spelling. Notices will be limited to 2 appearances. The Editor reserves the right to alter or reject unsuitable copy.

- FOR SALE: Butterfly and dried flower arrangements pressed under glass. Wood frames 18"x18". Specify light or dark wood and main colors wanted in arrangement. \$37.50 P.P. Will exchange for viable cocoons of N.A. *Saturniidae*. For more info write: Bonnie Ravy, 1013 N. Lark, Oshkosh, Wis. 54901.
- FOR SALE: We have many common and rare butterflies, beetles and insects from Malaysia, Indonesia and South East Asia. Good quality assured and prompt delivery. We charge reasonable prices. Write The Global Colosseum, 67 Spottiswoode Park Rd., Spore 2, Singapore.
- FOR SALE: World wide (*Sphingids*, *Saturnids*, *endemics*-living/dead material). Send 60 cents or Int. reply coupons for 1977 list. Ray Adams. Carretera Principal 139, Tamaraceite, LAS PALMAS DE GRAN CANARIA. Espana.
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- FOR SALE: Butterflies from Sulawesi (celebes), the Moluccas Islands, West Irian and sometimes from Papua New Guinea and the neighboring islands, including Ornithoptera species and other seldom offered material. Malaysian butterflies and other insects always available. Ask for lists from B.L. Gooi, P.O. Box 9, Tanah Rata, Cameron Highlands, West Malaysia.
- FOR SALE: Lepidoptera Rearing Bags 6'x3'; new and made of 80 grade heavy cheesecloth \$8.50/ea. PPD. Can make other sizes to specifications. 20 different U.S. butterflies \$10.00 PPD. Four different papered *Saturniidae* \$4.00 PPD. *Saturniidae* Cocoon Survey Sets \$9.00 ea. PPD; includes four different species labeled with mounting in Riker Display Mount. Craig R. Kohl, 1112 33rd St., S.E., Cedar Rapids, Iowa 52403.
- FOR SALE: Stock: Eggs, larvae, pupae of a wide range of butterflies and moths. Write for list and order early, as some species may be on short supply. Ray Adams, Lepidoptera Livestock Specialist Carretera Principal 139, Tamaraceite, LAS PALMAS DE GRAN CANARIA, ESPANA.
- FOR SALE: Ova of *Hyalophora cecropia*, 70¢ per dozen; *Telea polyphemus*, 65¢; available May-June; *Actias luna*, 65¢; *Eacles imperialis*, \$1.25; available July-Aug. Cocoons of *T. polyphemus*, *A. luna* available in July at 70¢ each. *C. promethea* at 60¢. Write for brochure before ordering. Mr. Tom F. Rohrkaste, R.R.#4, Box 24, Edwardsville, Illinois 62025, U.S.A.
- FOR SALE: Insect Pins, all sizes at \$8/1000. All domestic prices postpaid. Clair Armin, 191 W. Palm Ave., Reedley, Calif. 93654.
- FOR SALE: Extensive collection of Calif. butterflies in period 1927-'75. Mounted in Riker mounts with data plus large number of papered specimens; contains such rarities as *S. a. atossa*, Xerces blue, Polyphemus blue, aberrant *Euphydryas*, etc. Library with Holland B'fly (both editions) and Moth book, Comstock-B'fly of Calif. Wright, Ford, etc. For further information please contact Mrs. Charlotte Reeves, 10431 Kailua Lane #15, Tujunga, Ca. 91042.
- FOR SALE: One male of rare, longtailed, *Coppypteryx virgo* Zikan. Has finger smudge on left FW, otherwise perfect. Price:\$100 or best offer. Has sold in Europe for \$300. Contact first, Robert C. Eisele, 4534 Pichanal, Provincia de Salta, ARGENTINA.
- FOR SALE: Butterflies, Beetles, and large tropical Insects. Send for list. K. Entomological Co., 141 Alkier St., Brentwood, N.Y. 11717.
- FOR SALE: Insects and Lepidoptera from Belize and Central America. Glassine envelopes like the ones I use- will take fountain pen and stamp pad ink well. Ask for price list. Will trade specimens against *Catocala*, especially wanted material from Canada and Palaeartic region. Eduardo C. Welling M., Apartado Postal 701, Merida, Yucatan, Mexico.
- FOR SALE: Limited specimens of the following very scarce Agrias: *narcissus*, *sardanapalus*, *phalcedon*, *claudia* varieties, etc. Free list with self-addressed, stamped envelope. Robert E. Aronheim, P. O. Box 239, Middlebury, Connecticut, U.S.A. 06762.
- FOR SALE: CULOT: Noctuelles et Geometres d'Europe. 4 volumes perfect condition. Auction sale: \$1400. Guy Mathot 7, Rue du Pied Noir, Namur, 5000 Belgium.
- FOR SALE: Can. Ent. Vol. 69 - 106('37-74); ENT. NEWS. Vol.46-70('35-'59); BULL. BROOKLYN ENT. SOC., Vol.31-60('36-'65): Best cash offer. M.C. Nielsen, 3415 Overlea Dr. Lansing MI 48917.
- FOR SALE: Riker Mounts - 10 used but serviceable, 8 by 12". The lot for \$6.00 plus \$1.50 postage and packing. John A. Hyatt, 439 Forest Hills Rd, Kingsport TN 37663.
- FOR SALE: 100 papered perfect specimens with data: of *Paonias astylus*. Will sell in two separate lots of fifty each or in a single lot ONLY. Please make offers and write to: Jeffrey C. Gilbert, Box 356 B, R.D. #5, Carlisle, PA 17013 USA.
- FOR SALE: Assorted moths from Africa, Asia and Indo Australian regions. Nearly all major families available. Please state interest. Prices from \$2. per 10 not identified. Brian J. Taylor, 86 Furzebrook Rd, Wareham, Dorset, England.
- FOR SALE OR EXCHANGE: *Morpho augustinae*, *Phoebis avellaneda*, *Ornithoptera lydius*, *Agrias sardanapolis*, *Agrias phalcedon*, *Thecla coronata*, *Papilio karna*, *Agrias hewitsonius*, *Papilio lorquinianus*, *Papilio Ulysses teleg.*, *Agrias leucerci*, *Papilio toboroi*, *Hebomoia leucippe* and many others in small quantities. Large stocks of *Catagramma*, *Anaea*, *Papilio*, *Pierids*, *Saturnids* and others at all times. WANTED: *Morpho*, *Catagramma*, *Anaea*, *Caligo*, *Cethosia*, *Thecla*, *Callithea* and others that I do not have. Send 50¢ for 25 page list: David Bouton, Box 1181, Wilkes Barre, PA 18703 USA.

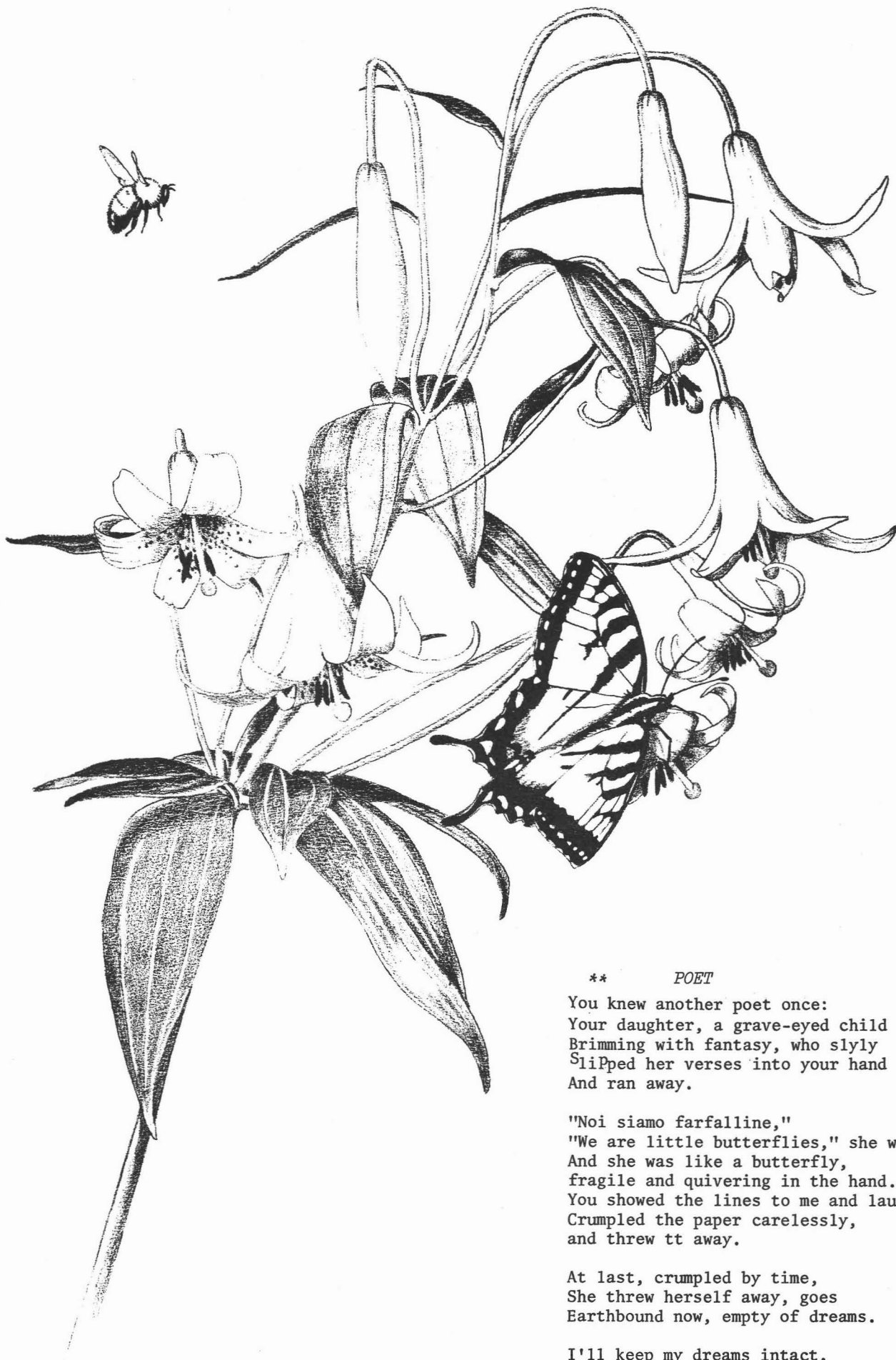
SPEAKING OF BUTTERFLIES *

remember the one that settled on
on our table at the lake,
its striped body quivering
as you stroked its wings?

You chided me for shying
at a bee, told
how you sounded a retreat
each morning for the ants
by tapping on a glass, confounded
the store keeper by asking for a trap
that wouldn't hurt the mouse.

Bold with wine, I showed you
my poem about a butterfly.
It sounded twice as beautiful
when you read it with all the stops
pulled out, Italian style.

Our butterfly stayed motionless
so long I was afraid you'd rubbed
its magic off. It flew away.
You kissed me suddenly and said:
speaking of butterflies. . .



** POET

You knew another poet once:
Your daughter, a grave-eyed child
Brimming with fantasy, who slyly
Slipped her verses into your hand
And ran away.

"Noi siamo farfalline,"
"We are little butterflies," she wrote,
And she was like a butterfly,
fragile and quivering in the hand.
You showed the lines to me and laughed,
Crumpled the paper carelessly,
and threw it away.

At last, crumpled by time,
She threw herself away, goes
Earthbound now, empty of dreams.

I'll keep my dreams intact.
And if you will not listen to my songs
I'll sing them over quietly to myself.

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- MEMOIRS of the Lepidopterists' Society, No.1, 1964: A Synonymic List of the Nearctic Rhopalocera. C.F. dos Passos (with 3 supplementary articles). Unbound copies ONLY. \$5 (member); \$7.50 (non-members), sent postpaid.
- JOURNAL of the Lepidopterists' Society (and its forerunner, LEPIDOPTERISTS' NEWS), from Vol. 1 (1947) to date, \$13 per volume, postpaid. Individual numbers available at prices depending on how many were published in each volume (varies from 4-8). NOT available are: Vol.7, no.3/4 (combined in one issue), Vol.9, no.3/4, Vol.12, no.1/2, and Vol.21, no.1.
- NEWS of the Lepidopterists' Society. Some recent issues are still available at \$.25 per copy, postpaid. Inquire as to availability before sending money.

ORDER FROM: Dr. Charles V. Covell Jr., Memoirs Editor, Dept. of Biology, University of Louisville, Louisville, KY 40208 U.S.A.

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 the full dues for the current year, (\$13, U.S.A.) together with full address and areas of interest in Lepidoptera. Remittances in dollars (U.S.A.) should be made payable to the Lepidopterists' Society. All members will receive the JOURNAL published quarterly, and the NEWS in even-numbered years. Back issues of the JOURNAL may be purchased from the TREASURER.

Information on membership may be obtained from the TREASURER, Dr. John M. Snider, 3520 Mullidae Ave., San Pedro, CALIF. 90732, U.S.A. Change of address must be sent to him alone, and only when changes are permanent or very long terms.

Other information about the Society may be obtained from the SECRETARY, Julian P. Donahue, Dept. of Entomology, Los Angeles Co. Mus. of Nat. Hist., 900 Exposition Blvd., Los Angeles, CA 90007. U.S.A.

Manuscripts for publication in the JOURNAL are to be sent to the Editor, Dr. George L. Godfrey, Illinois Natural History Survey, Natural Resources Bldg., Urbana, IL 61801, U.S.A. See inside back cover of a copy of the JOURNAL for editorial policies.