

1. SOUTHWEST — CALIFORNIA, ARIZONA, NEVADA

by LLOYD M. MARTIN

In spite of the large number of collectors in this area only a few found it possible to contribute this year. For this reason it seems best to let the individual reports speak for themselves.

A widespread migration of *Vanessa cardui* seems to have been the most conspicuous event in the area.

CALIFORNIA

F. T. THORNE reports as follows from the SAN DIEGO REGION:

Weather: The first half of 1952 was characterized by exceptionally heavy rainfall with over 4 inches in January, almost 5 inches in March yet February would have been rainless if there had not been 29 days this year. During the first six months rainfall was 50% above normal, but during the last six months only slightly so. Temperatures generally averaged above normal, during February, May and September, exceptionally so. Sunshine, due to so much rainy weather, averaged below normal for the year. Rainfall late in 1951 was good, but for the whole year was woefully deficient, so that the drought condition preceded 1952.

The whole season was delayed by wet weather, and while poor weather reduced the opportunities to collect, the opinion is that population levels failed to respond immediately following a prolonged drought cycle. Desert collecting was poor before the end of March. Coastal flights peaked about May 11; mountain spring flights in May were below normal. Collecting during the year throughout the county was disappointing.

There was little evidence that parasites or predators were responsible for the lack of large numbers of many species. Larvae were generally hard to find, but this is considered a product of low populations rather than biological controls.

Two exceptional migrations were recorded during 1952. On February 10, at El Cajon a strong north-northeast flight of *Vanessa cardui* was first observed. Sample counts gave an estimate of 750 per minute per mile front. Specimens were faded but not frayed, and dissection showed 60% females and 40% males. There appeared to be a fresh non-migration resident population of this species of about 5%. Air temperature between 1 and 2 p.m. was 61°F. This same flight was reported from Fallbrook 48 miles northwest on February 14. In Canebrake Canyon in the desert due east of the Laguna Mountains the flight was heavy on February 12 and was in a west by northwesterly direction. Past one favorable thirty foot strip, a rate of 1000 per hour was clocked; activity began about 9 a.m. but by mid-afternoon migration stopped, and the butterflies fed or rested. A dissected sample showed 57% males and 43% females. They were faded and worn but only a few tattered. On February 24 at El Cajon a rate of 690 per hour was clocked past a 40 foot strip—the direction the same as

on February 10, north-northeast. By March 3 the flight was practically over. Flight was not continuous during the period due to rainy or cool weather. The mountain country seemed to be avoided in the main, because of adverse temperatures.

On June 4, near Julian, a strong flight of fresh *Nymphalis californica* was seen around 9 a.m. going in an easterly direction. This same flight occurred elsewhere throughout the county including Borrego Valley. Time did not permit a study of rates, etc. On June 8, the first opportunity to collect, the flight had dropped to a very low level. Larvae never did appear to any extent on *Ceanothus* following this flight. *Danaus plexippus* was not observed in any marked migratory movement during the year. *Malacosoma americana* became epidemic during May and caused defoliation of Scrub Oak, Live Oak, and other natives in the foothill and mountain areas. *Celerio lineata* larvae in response to lush desert vegetation, reached serious proportions in April on the desert and were destructive to native vegetation and grapes. A month later they were a nuisance in San Diego and other coastal areas.

SPECIFIC NOTES: *Anthocaris cethura*, ordinarily local and rare, was common in the foothill areas throughout March. *A. lanceolata* was unusually numerous in Box Canyon March 25, flying with *A. cethura*. *Melitaea chava* was taken at 6000 ft. in the Laguna mountains on May 2, where it had probably wandered from the desert. *Speyeria callippe* was exceptionally abundant near Jamul on May 29 and June 3. Larvae of *Papilio pergamus* starved to death rather than eat four species of Umbelliferae other than *Velea arguta*. *Zerene cesonia* enjoyed an exceptionally good year in desert and mountain areas. A mature parasitized larva of *Mitoura spinetorum* was found July 16 on pine mistletoe at 6000 ft. on Warners Spring Mountain. *Agraulis vanillae* suffered during the wet winter and didn't become normally common until August. *Nathalis iole* continues to be commoner than formerly. *Euphydryas editha wrightii* was well below normal levels.

Notes from JERRY POWELL. One *Melitaea neumoegeni* was taken April 8 in Box Canyon. This is a rarity in San Diego County. *Chlosyne californica* was taken at Warners Hot Springs June 5, out of its usual desert areas. One *Papilio philenor* was taken on Monument Peak, Laguna mountains June 18. *Colias barfordi* was taken in San Diego City, June 13. *Strymon spadix* was taken in several mountain localities June 5 to July 10. J. W. TILDEN gives the following report from the SAN JOSÉ REGION:

The fall of 1951 was relatively warm and open, with less-than-normal rainfall, nearly to Thanksgiving. Thereafter, for the remainder of the 1951-1952 winter, there was more than a usual amount of stormy and cold weather. Rain came in large storms, accompanied in several cases by high winds. Rainfall passed normal. January was characterized by almost continuously rainy weather, with little or no sunshine. Snow in unusual amounts fell on the mountains on both sides of the Santa Clara Valley and Mt. Hamilton was snow-capped for long periods of time. Frosts were heavy on the valley floor. On March 1, 1952, rainfall was over 14 inches, more than four inches above normal for that time.

As a result, early collecting was not found. The February insects were reduced in flying days by the lack of sunshine, but Mr. SMOKER found

Anthocaris sara reakirtii and *Philotes sonorensis* on February 10 in Alum Rock Park. Also overwintering *Nymphalis antiopa* were seen.

On March 14 a heavy storm blew in and hampered collecting for nearly two weeks. After March 21 the weather became clear but was cold until near the end of March. Thereafter the weather became about normally warm and the rest of the season proceeded about normally.

On March 21, conditions were cold and clear with considerable wind at Simmler, San Luis Obispo County, and no *Mitoura siva* were found. *Anthocaris sara* was the only butterfly seen.

On March 28, conditions were good in Alum Rock Park, with about the usual number of species and individuals: *Papilio zelicaon* and *P. rutulus*; *Pieris rapae*, *napi*, and *occidentalis*; *Coenonympha californica*; *Plebeius acmon*; *Glaucopsyche lygdamus*; *Philotes sonorensis*; *Lycaenopsis argiolus*; and the moths *Annaphila decia*, *A. diva*, *Epirrhoe plebeculata*, and *Hydriomena* spp.

March 31, Stevens Creek area, conditions were cold and bleak with little flying: *Anthocaris sara*, *Lycaenopsis pseudargiolus*, *Annaphila deva* and *decia*.

April 4, between Mojave and Essex in the Mojave Desert, conditions seemed early with little flying except enormous numbers of *Vanessa cardui*, which seemed to be migrating. They were moving into the northerly wind and differed in concentration in different parts of the area, but on the average, driving along the road, five or six were in sight at a time, crossing the road at a rate of one every two or three seconds. The total numbers present on the desert must have been many millions. Between Mojave and Essex is a distance of about 180 miles, so it is seen that this was a movement of very considerable scope.

April 5, Providence Mts.: The trip was made in hope of finding *Callophrys comstocki* and *Incisalia fotis*, but only one of the former was seen, none of either taken. Butterflies seemed very scarce although the general conditions were good. Since there have been several dry years, it may take more than one wet year for the populations to build up again.

Species and individuals were few: *Papilio bairdii*, *Pieris occidentalis*, *Anthocaris cethura*, *Euchloe creusa*, *Euphydryas* (probably *chalcedona* form?), *Melitaea neumogeni*, *Vanessa cardui*, *Pyrgus communis*.

April 6, near Simmler, conditions were still apparently early and cold. *Vanessa cardui* (old overwintered insects as in the Mojave migration), *Mitoura siva* (2 males only), *Xanthobrix neumogeni*, *Heliosea fasciata* (1), and a few *Alypia ridingsi*.

April 16, Alum Rock Park, conditions still retarded: *Papilio rutulus*, *P. zelicaon*, *Euchloe ausonides*, *Anthocaris sara reakirtii*, *Pyrgus communis*, *Glaucopsyche lygdamus*, *Plebeius acmon*, *Leptarctia californiae*, all scarce.

On April 26-27 at La Panza Camp Ground, near Simmler, San Luis Obispo County, it rained lightly both mornings and evenings and was cool and partly cloudy with high winds in the afternoons. No butterflies were seen except the by now very monotonous *Vanessa cardui*, which is the only

common butterfly this season in most localities. Larvae of this species were abundant on *Amsinckia*. Several of the spiny things were brought home and reared to make determination positive. On this plant the larvae tie the leaves together with silk and live in the pockets thus formed.

On May 2-4 the weather was cloudy with some light drizzles at San José and again on May 6-8 the weather was cold and windy, with heavy clouds but no rain. One or two of the nights were frosty and farmers smudged in parts of the Santa Clara Valley.

On May 9, on Mt. St. Helena, the weather was partly cloudy, cool and with a light wind, but was warmer later in the day in Lake County. About a dozen good specimens of *Mitoura nelsoni muiri* were taken, and other worn ones seen. The season in this area was unbelievably retarded. Flowers were in bloom that are normally entirely past by this time. *Vanessa cardui* was as common here as elsewhere. One *Colias chrysomelas* was seen but not captured. *Papilio rutulus* and *P. eurymedon* were also present but in exceptionally small numbers. *Euphydryas chalcedona* and *Melitaea palla* were also scarce. *Erynnis lacustra*, one of the prizes of the area, was not seen. I have not taken it now for several years.

On May 23, TILDEN collected in Alum Rock Park and on May 24, SMOKER did likewise. Pooled results: Weather hot and clear, drying rapidly: *Coenonympha californica*, *Pieris napi* (1), *Glaucopsyche lygdamus*, *Euphydryas chalcedona*, *Melitaea palla*, *Lycaena gorgon*, *Plebeius acmon*, *Lycaenopsis argiolus*; no *Melitaea leanira* were seen this year.

May 24, summit of Mt. Hamilton: *Coenonympha californica*, *Vanessa cardui* (in the usual large numbers), *Euphydryas chalcedona*, *Melitaea palla*, *Plebeius acmon*, *Plebeius icarioides*, *Papilio eurymedon* and *P. rutulus*, *Hesperia columbia* (several, but slightly worn), *Erynnis propertius*, *Thorybes pylades*. A single newly emerged *Speyeria callippe* was taken, the first of the year for this common species. The *Hesperia columbia* are apparently several weeks late, appearing usually in April.

May 31, Ukiah, California: *Papilio rutulus*, *Pieris rapae*, *Coenonympha californica*, *Cercyonis alope*, *Vanessa cardui* (large numbers), *Adelpha bredowii*, *Limnitis lorquini*, *Euphydryas chalcedona* (very common), *Melitaea palla*, *Lycaena xanthoides*, *Strymon californica* (common), *auretorum* (scarce), *Hesperia lindseyi* (abundant - type locality - about fifty were taken in a single hour). I have never seen this or any other *Hesperia* so common at any time. However, this species is not by any means always so common, although it is not scarce. *Ochlodes agricola*, *Erynnis propertius*, and the Oak Moth, *Phryganidia californica*, were the other species noted.

June 7, Putah Creek and surrounding area, Yolo and Napa Counties: *Papilio rutulus* and *P. philenor*, the latter badly worn; *Pieris rapae*, *Colias eurytheme*, *Coenonympha californica*, *Cercyonis alope*, *Nymphalis californica* and the usual common nymphalids; *Strymon sylvinus* exceedingly abundant - I have never seen so many of this species, mostly females and many slightly worn, indicating the peak of the brood was passed; *adenostomatis*, fairly common; *auretorum*, a very few, all badly worn; of the species present, only *S. sylvinus* was common. Later, same day: Mocho Creek, Alameda County, *Strymon dryope* (2) and *S. auretorum* (1); conditions very poor.

June 12, Arroyo Bayo and Mt. Hamilton Area, Santa Clara County: *Papilio eurymedon* (2); *P. zelicaon* (1); the usual common nymphalids; *Nymphalis californica* present but worn, apparently still overwintered individuals; *Lycaena xanthoides* and *L. gorgon*, common; *Strymon dryope*, few; *S. adenotomatis*, few, becoming worn; *S. auretteorum* (1, first record for this locality); *S. saepium*, very common; *Lycaenopsis pseudargiolus*; *Ochlodes agricola*, few. Grass is not very plentiful in this area, and grass feeding skippers are usually scarce. However, a few *Hesperia lindseyi* usually appear rather late, but none this year.

June 15, Alum Rock Park, SMOKER found *Euchloe ausonides*, *Pieris napi*, *Terene eurydice* (first he has taken there, one female), *Adelpha bredowii*, *Lycaena gorgon* (common), *Lycaena xanthoides*, *Tharsalea arota* (scarce), *Leptotes marina* (the first records for the area as far as I can find; three were taken). On June 17 the same species were taken as above, and two more *L. marina* were found.

June 1, Darwin Falls, Inyo County: *Celerio lineata* (very common and flying and mating by day), *Danaus plexippus*, *D. gilippus* (scarce), *Nymphalis californica* (few), *Vanessa cardui* (few but fresh), *Leptotes marina* and *Brephidium exilis* common, *Ochlodes yuma* (not common but fair numbers for this species, several taken and more worn ones seen, *Pyrgus communis* common. Later in the day at Olancho, Inyo County: *Plebeius melissa*, *Strymon sylvinus* (1), *S. melinus*, *Pseudocopaodes eunus* (few).

Just before sundown, Havilah, Kern County, June 17: *Strymon saepium* and *S. californica*, fair numbers but worn; *Ochlodes agricola* (?) few and worn; *Erynnis propertius*, scarce and worn; just at twilight, the common moth *Sericosema juturnaria* was seen in large numbers feeding at the flowers of *Eriodictyon*.

June 18, Tehachapi, Kern County: *Pieris protodice*, *Colias eurytheme*, *Euphydryas chalcedona*, *Vanessa carye*, *V. cardui*, *Strymon melinus* (1), *S. californica* (few), *S. saepium* (common), *S. adenotomatis* (few), *S. auretteorum* (2 slightly worn), *Lycaena rubida*, *Plebeius acmon* (2), *P. chlorina* (1), *Philotes* sp. (1), *Leptotes marina* (common). Conditions were hot, dry and with plants going out of flower, evidently too late.

July 2, San Antonio Wash and Camp Balfy, San Bernardino County, California: At lower end of Wash, *Philotes battoides* in fair numbers; farther up, *Lycaena gorgon*, *Tharsalea arota*, *Plebeius monticola*, *Strymon californica*, *S. saepium* (common), *S. sylvinus* (1), *Apodemia mormo* (few).

July 4, Tanbark Flat, San Dimas Experimental Forest, Los Angeles County: *Plebeius acmon*, *Tharsalea arota*, *Habrodais grunus*, *Pieris protodice*, and *P. rapae*, all worn; Butterflies scarce and poor in condition (Beetle collecting better).

July 6, Canyon just above Glendora: *Tharsalea arota*, very common with fresh males but few females; *Leptotes marina*, very common; *Erynnis funeralis*, scarce; *Heliopetes ericetorum* (2); *Colias harfordii* (1), and several common species.

July 17, Mono Lake and Tioga Pass: Cold, with heavy snow pack still on pass, insects scarce except for the abundant mosquitoes.

August 16-18, Mono County and Tioga Pass, conditions very good but insects not common: *Colias bebrui*, *Pieris sisymbrii*, *P. occidentalis*, *Par-nassius smintheus*, *P. clodius*, *Cercyonis oeta*, *Oeneis chryxus*, *Lycaena rubidus* and *L. cupreus* (fairly common), *L. nivalis* and *L. editha* (scarce), *Philotes battoides*, *Plebeius saepiolus*, *P. aquilo*, *Thorybes nevada*, *Polites sabuleti*. Collecting above Tioga Pass was fair, but numbers unusually few. In the lower areas of Mono County, the collecting was poor, conditions dry, and insects few. Near Bridgeport, we found *Coenonympha mono*, *Strymon dryope* (3), *Phyciodes montana* (1), *Tharsalea arota* (common but badly worn); this area was not up to usual par for this time of year.

Same trip, on return: Sonora Pass, at top—nothing flying of importance except lycaenids: *Plebeius melissa*, *P. saepiolus*, *P. icariodes*, *Philotes battoides*, *Phaedrotus piasus* (2), *Glaucopsyche lygdamus* (few); general collecting poor, *Speyeria* notably scarce in the mountain areas this year, nearly absent in localities where in previous years I had taken them.

August 31, Box Canyon: *Chiomara asychis* (1, Sonoita, September 1), *Hesperia uncas lasus* (2). September 1, Ramsey Canyon: *Philotes rita* (4), *Apodemia mejicanus* and form "madera", *Amblyscirtes aenus* (1), *Thorybes drusus* (3), *Codatractus melon* (4), plus others.

Late fall conditions in the Santa Clara Valley were open, as is often the case, with rains coming late but soon coming up to normal; no killing frosts by the first of 1953. *Ochloides sylvanoides*, *Erynnis tristis*, and *Hylephila phyleus* were coming to flowers in the yard until late in November. *Crambus* spp. came to light until early December. Conditions at present, rain at least normal, weather alternately rainy and foggy, with little sunshine for weeks. Early plants already well up, giving prospects of good early collecting, unless unseasonably cold storms intervene.

ARIZONA

On July 9-12, 1952 we were in the GRAHAM MOUNTAINS, Graham County. We collected every day from 6000 feet elevation to the highest meadow, 9,054 ft. Collecting in general was excellent as the weather was favorable. This section of Arizona had experienced in the valley a mild dry spell but the mountains were fairly moist. The wild buckwheat was in bloom from 6000 ft. up and past its bloom below that. Wherever it was blooming, butterflies were swarming—especially the Blues. Higher up the mountain, in the meadows, cone flowers were in bloom and the iris were past their prime. *Vanessa cardui* was scarce at the lower elevations and became much more plentiful, being particularly obnoxious and troublesome at 9000 ft. Of course the big catch of the trip was the 9 ♂ *Neophasia terlooti*, all caught upon the buckwheat, very easy to catch—we got all we saw. None were seen outside the 7000-8000 ft. belt. Together with them were the prized *Erora quaderna*, much more difficult to see, for they hid in the *Eriogonum* and were quite fast fliers.

It was also a surprise to pick up *Melitaea theona*—is it *bolli* or *thekla*? *Apodemia nais* were fresh and most plentiful at about 8000 ft., but some were taken below this. Again it was surprising to pick up *Cecropterus cellus*; only one (fresh) was seen.

So much for the scarce stuff. The plentiful material was in general not as plentiful as I have seen it at the same time in 1936, 1937, and 1938. *Melitaea pola* were just beginning to come out, and females of *Speyeria nausicaa* were very scarce. *Euphydryas magdalena* should have been abounding but NONE was seen.

We also visited the WHITE MOUNTAINS with the WEBERS on July 13 and 14. Collecting was done 22 miles west of Springerville at approximately the collecting locality for *Oeneis daura*; of course we were too late, but *Speyeria luski* and *Euphydryas magdalena* abounded. *M. pola* and *S. nausicaa* were about as common as at Mt. Graham. In general the material here was more abundant but lacked the variety. *Cercyonis oetus* was plentiful at the edge of the meadows among the grasses.

D. L. BAUER gives the following report from NORTH-CENTRAL ARIZONA. The weather for the last twelve months was as follows:

The last few days of 1951 brought heavy rains to nearly all of the state. This brought out the spring annuals in great abundance. The weather remained mild and a little on the wet side through January and most of February with a few spring species of butterflies flying the last of January and first part of February. Down on the desert some species were out in considerable numbers.

March and the last few days of February brought cold, rainy and windy weather, and March of 1952 is the coolest on record for Arizona. This cold spell forced the spring species that normally began flying in March to remain dormant and there were practically no butterflies seen during this cold rainy period. Several March-flying species were much below usual in numbers when they did emerge and some were not observed at all.

The last few days of March warmed up and April and May were much warmer and drier than last year, resulting in a good flight of nearly all the late spring species; the usual April-flying species were augmented by a late emergence of a number of normal March species. June was also a very good month for butterflies in spite of the fact that temperatures averaged a little below normal. May and June are the dry months in most of Arizona and this year they were true to form, only .01 inches of rain was recorded for the two months.

The summer thunderstorm season began right on time with the first storm coming into the state from the southeast on the eve of the fourth of July. This was followed by a two-weeks dry spell, after which thunderstorms were the rule nearly every day over the mountains and occasionally in the valleys all through August and well into September. On September 20th a tropical storm entered the state from the south Pacific area and brought with it heavy rains in the mountains and mountain valleys, (around 2 inches in the Verde Valley). However, this storm left most of the lower desert areas dry or with slight rainfall. This late September storm did a great deal of

good, as it sprouted the seeds on many of the early spring annuals; the spring grass began to make the countryside greener than usual, so that by mid-October some areas were quite green. Most of October was sunny and mild with only a few light showers on the higher mountains. While the flight was by no means general many areas had a very good flight of fall species that depend upon the fall or late summer rains.

The first of November brought another day or two of late thunderstorms to the Verde Valley and surrounding mountains. Temperatures remained mild but were slowly dropping until the week-end of November 9th, when the first winter storm came into the state from the northwest, bringing a small amount of snow in the mountains. The rest of November was cold and rainy, with a storm and rain coming to the state about every seven or eight days and heavy snow in the mountains; making it one of the wettest Novembers on record. No butterflies were seen after the first winter storm. The first of December was a little warmer but winter conditions still prevailed for the area covered in this summary.

As a whole the 1952 season in central and northern Arizona was cooler and wetter than in previous years. The rainfall was spread out over a longer period of time, and temperatures were milder except in March. The late September and almost weekly November storms hold promise of excellent collecting next spring, barring the repetition of a spring cold spell.

In general the Papilios had the best flight that has been observed during the past four years. *Papilio philenor* had a good flight in the late spring and then dropped off during the summer and fall months. *Papilio polyxenes* was more in evidence than usual, but it is never very common in the northern and central part of the state except very locally. A number of larvae were collected and reared during the summer, and there was an increase in numbers in the fall.

Papilio bairdii deserves special mention this year, for in previous years only a few specimens have been seen and these not positively identified. In the late spring a number of specimens were observed at scattered localities, but in June the first specimen was taken and they were definitely known to be *P. bairdii*. There was steady increase in numbers during the last of June, until by July *P. bairdii* was the most abundant species flying in its chosen haunts. This abundance lasted throughout July and August, and a few late flying specimens were seen in September. About 75 specimens were taken, and the larvae were found in considerable numbers feeding on *Artemisia dracunculoides*. This great increase in numbers of *P. bairdii* was accompanied by the capture of two of the *P. bairdii* subspecies or forms—*P. bairdii hollandi* and *P. bairdii brucei*. The first specimen of *P. brucei* was taken in early May and then three more beautiful specimens in July. About three specimens can definitely be classed as *P. hollandi*. The above specimens mentioned are all true *P. bairdii* or *brucei*.

A number of specimens were observed that could be called *P. rudkini*, but the identification is not certain. Although there were considerably more such specimens seen this year than in past years, only one specimen was taken.

Papilio multicaudatus showed a great increase over previous years, but not as great as that of *P. bairdii*. The increase in numbers was constant throughout the season.

PIERIDAE: *Anthocaris sara* had a very poor year in the north-central section, the flight having just begun when the March cold spell began. During the cold spell no specimens were taken or observed and only very few around the first of April after it had passed. *Anthocaris pima*, which flies at a considerably lower elevation on the desert mountains, flew early enough to get in a better-than-usual flight before the cold spell hit. The cold spell being milder on the desert, the species weathered this period and was still flying in early April, which is considerably later than normal for *A. pima* in this area. *Euchloe creusa* was not seen this year.

Colias eurythyme seemed to be unaffected in numbers, but the spring flight was somewhat late. *Colias alexandra*, which flies in June, was still below the numbers of the late 1940's. *Zerene cesonia*, which had been very low during the past two years and showed only slight increase late last fall, made real gains this year and was quite common during most of the season. One specimen of *Z. eurydice* was taken on Mingus Mountain. This is a new record for the state of Arizona. *Phoebis sennae* made a little gain late in the season, and both species of *Eurema* made considerable gains, especially *E. mexicana*, which during June, July, and August exceeded *E. nicippe* in numbers in the Cottonwood area. *Nathalis iole* remained about the same as last year with the flight spread more evenly throughout the season. One specimen of *Neophasia menapia* was taken near Prescott; no others were observed anywhere. The last good flight of this species was August 1945. All species of *Pieris* were about as usual. The spring flight was somewhat delayed by the March cold spell, and *P. protodice* and *P. rapae* increased during the summer resulting in the largest flight of *P. rapae* in several years.

DANAIDAE: *Danaus plexippus* dropped back to normal after last year's slight increase, and there was a good flight of *D. berenice* during the summer and fall.

SATYRIDAE: *Euptychia dorothea* had a good flight in June with some increase and a very good flight during late August to early October. *E. rubricata* did not do nearly as well as last year, only a few specimens being observed on Mingus Mt. and less than last year at Prescott. *Cercyonis alope olympus* had a good flight in Oak Creek Canyon during late June and July, as did also *C. meadii* from mid-July to early October. *Gyrocheilus patrobas tritonia*, which is a fall flier, showed an increase again this year for the third year in a row.

NYMPHALIDAE: *Agraulis vanillae* was taken once in May and again in June and then disappeared for the rest of the season. It is not a resident species in the Cottonwood area. *Euptoieta claudia* was back to normal after last fall's abundance. *Speyeria nausicaa* had about a normal season. *Euphydryas klotsi* was below normal after last fall's great abundance. The spring flight was about two weeks late because of the March cold spell, and there was only a very meager fall flight after the late September heavy rains. The heavy fall rains were three weeks later than in 1951, and the fall flight, correspondingly later, came in October this year. *Euphydryas hermosa* had a very good

flight in Oak Creek Canyon, and a number of larvae were collected and reared the first of April. The Melitaeas had a good year. *M. gabbi sabina* was delayed about two weeks by the March cold spell, but was abundant the first of April in its usual haunts. *M. fulvia* had the best year yet; it was observed and taken from June to October, with the best flight coming around October 21, just a month after the heavy September rains. *M. pola* held its own this year. *M. dymas* remained about as usual, but *M. perse* made a better than usual late summer and fall showing. *Phyciodes campestris* showed a marked increase, as did also *P. mylitta* and *P. picta*, *P. picta* having been nearly absent the past two years. *Chlosyne lacinia crocale* and forms were about normal, while *C. californica* dropped back to normal after last fall's great abundance.

Both species of *Polygona* showed increase, with *P. zephyrus* gaining more than *P. satyrus*. *Nymphalis californica* deserves special mention. After being almost entirely absent for years, last fall it made a comeback and this spring was very much in evidence, even on the desert among the cacti as far south as northern Yuma County. The Vanessas were all about normal, with a slight northwestward migration of *V. cardui* taking place for several weeks in the spring. The number of specimens observed from a given point was about one every four or five minutes, all flying in the same direction. Toward evening the individuals tended to stop and sun themselves on the rocks. *Junonia coenia* was not observed, for the third year in a row. *Limenitis astyanax* showed a considerable increase and *L. weidemeyerii* a slight decrease, while *L. obsoleta* held its own. One hybrid *L. weidemeyerii-astyanax* specimen was taken. *Adelpha bredowii* was about as usual, with the best flight coming in September. *Asterocampa celtis antonia* showed some increase for the second straight year, while *A. leilia* was not taken at all after having been the more abundant of the two last fall. *Anaea andria* got off to a slow start but ended the season with a good late summer and fall flight.

LIBYTHEIDAE: *Libytheana bachmanii* followed the usual pattern of a steady increase, but the fall numbers were well below last year's.

RIODINIDAE: *Apodemia mormo* had about an average season with some increase in the Cottonwood area. *Apodemia palmeri* had a good year with an increase in numbers in the late summer brood. *A. nais*, which first taken in the Cottonwood area last year, was in about double last year's numbers. *Emesis zela* had about an average year. *Calephelis nemesi*, which had only been taken around Camp Verde previously, was taken 20 miles farther up the Verde River this year and seemed to have a better year.

LYCAENIDAE: *Hypaurotis chrysalus*, a late summer and fall flier, had a good season. *Atlides halesus* had a good spring flight; a few were taken through the rest of the season. For *Strymon leda*, the flight was about normal: local and disconnected. *S. melinus* had a good year. *S. alcestis* had a brief but numerous flight during June. *S. autolytus* dropped to about half last year's flight after its sudden appearance a year ago. *Mitoura spine-torum* showed some increase. *M. siva* made great gains; it was first taken the last day of March, and there were successive broods throughout the season; the last specimens were taken the first of September. Incisalius were poor: only a few specimens of *I. iroides* were observed, making the second

very poor season after 1950 great abundance. *I. eryphon* also had a poorer-than-average year. *Erora quaderna* did very poorly this past year.

Leptotes marina dropped considerably, while *Hemiargus isola* was very abundant during the time the mesquite and catclaw were in blossom and then dropped back to normal. *Brephidium exilis* was about as usual. *Plebeius* species were about the same as past years, except that *P. lutzii* was more abundant at low elevations. *Philotes battoides* had a very good flight right after the March cold spell, and *P. enoptes dammersi* had a good fall flight showing increases some places, decreases others. *Glaucopteryx lygdamus* had another good year in the Prescott area; no collecting was done in other areas. *Lycaenopsis pseudargiolus* did very poorly in the mountains, in the spring, but came up with a strong summer and fall flight and did better than usual on the desert by getting the spring flight in before the March cold spell.

HESPERIIDAE: *Polygonus amyntas* was taken for the first time in the Cottonwood area. *Epargyreus clarus* dropped some from previous years, as did also *Zestusa dorus*. *Thorybes pylades* did poorly in the spring but recovered lost ground in the summer. *Cogia hippalus* did poorly in the spring but greatly increased after the summer rains the last of August. *Caicella caicus* followed the same pattern, poor in spring, very good in late summer. *Pyrgus scriptura* remained rare. *P. philetus* was poor in spring, increased in late summer. *P. communis* was about as usual. *Heliopetes ericetorum* showed steady increase until it was common in the late summer and fall. Of *Antigonus pulverulenta*, only a few strays were seen. *Celotes nesus* was about normal. *Pholisora mejiicanus* remained about the same, a little late in the spring. *P. ceos* was late in the spring and about the same the rest of the year. All species of *Erynnis* remained about the same in numbers. The early spring species were late, and *E. funeralis* showed marked increase in late summer and fall. *Copaeodes aurantiaca* fared about the same as usual. *Yvretta carus* was not observed this past season. *Hesperia williamsi* did very well, had a fair flight in June and an abundant flight in late September and October. *H. woodgatei* had a greatly increased flight in September and October. *Poanes taxiles* reappeared on Mingus Mountain, after being absent the past two years; elsewhere it had a better than average year. *Atrytone ruricola* dropped a little in numbers this year. All the *Atrytonopsis* species dropped this year: *A. deva* wasn't taken; *A. vierecki* only a few; *A. pittacus* was not observed at all; *A. python* was down in numbers. *Amblyscirtes aenus* was about average, but *A. eos* was not observed. *Lerodea eufala* made a better than usual late fall appearance (November).

Megathymus yuccae did not do as well as last year; this might be because of the March cold spell which just preceded the time of emergence. I can't really make a comparison of the fall flying *Megathymus*, because as a result of a visit by DON B. STALLINGS, much more extensive efforts were made this year than last in collecting them. However, it appeared to me that both *neumoegeni* (formerly reported by me as *M. polingi*, but now determined by Mr. STALLINGS as true *M. neumoegeni*) and *Megathymus aryxna* (formerly listed as *M. neumoegeni*, but now that true *M. neumoegeni* has been rediscovered, the name *M. aryxna* applies to this species) seemed to have a considerable increase in numbers, but it might have been only because of more intensive collecting; 108 specimens were taken.

A week spent collecting on the KAIBAB PLATEAU the last of June and first of July resulted in a number of good species being collected. Most of the collecting was done at Bee Springs and Big Springs on the west side. The early spring species were for the most part over with, and the summer species were just getting started. In spite of this fact, collecting was very good, and about 50 species were collected. Some of the outstanding species in rareness or abundance were as follows: one male of *Papilio indra minor*; one *P. zelicaon*; one *P. rudkini*; several *P. bairdii* were observed but none captured. *P. rutulus* was the most common species of *Papilio*. The Pieridae were almost entirely absent; only *Colias eurytheme* was flying in numbers. A few *Eurema nicippe* and one *E. mexicana* were taken, and some *Nathalis iole* and *Zerene cesonia* were observed. *Eumenis ridingsii* and *Cercyonis masoni* were just beginning their flight period, as were also *Speyeria atlantis shellbachi*, *Callipsyche behrii*, and *Philotes spaldingi* and a number of others. Mr. CHRISTENSEN of the Park Service later reported abundant flights of *C. masoni* and *S. shellbachi*, as well as other late species such as *Hypanotris chrysalus*, *Tharsalea virginiensis*, and *Lycaena heteronea*. Several specimens of the little known Arizona race of *Speyeria snyderi* were taken. *Melitaea pola* was the only Checker-spot that was flying at the time. There were numerous species of Skippers; the most abundant of them all was *Polites draco*. The most common Blue encountered was *Plebeius icarioides*.

Not much MOTH COLLECTING was done, but the following species were taken: *Phlegethontius sextus*, *P. quinque maculatus*, *P. rusticus*, *Sphinx chersis* and *S. dollii*, *Pachysphinx modesta*, *Hemaris senta*, and *Celeric lineata*. *Dictyosoma elsa* took a big jump in numbers, from just one or two specimens being taken, to about forty. It was the most common Spingid flying during April and May, and a few specimens were flying in the fall. Following the spring flight, the foodplant was stripped of leaves by the larvae of this normally scarce moth. *Hyalophora gloveri* was taken; no *Automeris pamina* were seen. Some *Hemileuca nevadensis* larvae were collected at Holbrook, Arizona, and brought home to be reared; adults emerged during October. *Adelocephala heiligbrodti* was below last year's numbers. The various species of Arctiidae fared well this year, with increases in several. Phalaenidae were about as usual although not much observation was done in this group. There was a good flight of *Gloveria arizonensis*, and two undetermined species of *Tolyte* were taken.

DON EFF submitted a brief report:

We collected in OAK CREEK CANYON, where *Limenitis wiedemeyerii* was the most prevalent species. From there we went to COTTONWOOD, Arizona, and in company with DAVID BAUER had the best collecting of the entire trip. In the edge of the cottonwoods and willows bordering the stream near town we took a few *L. obsoleta*. And on the Chinaberry trees, which were in bloom, we found some *Strymon alcestitis*. Then we drove up on MINGUS MOUNTAIN ABOVE JEROME and collected in the damp spots along a stream in one of the gullies that parallels the road. Here were *Asterocampa*, *Adelpha bredowii*, *Euptychia dorothea*, more *L. wiedemeyerii*, *Eurema mexicana* and *Lycaenopsis pseudargiolus* by the thousands. For *L. pseudargiolus*, you simply sat down along side a swarm of them and with forceps picked out the best ones and dropped them in the cyanide can. Following

this we drove on over the top of Mingus Mountain and in another stream bed on the other side (west) we found the prevalent species even more plentiful, if such a thing were possible. When disturbed the air was simply alive with butterflies, looking almost like the pictures you see of the grasshopper plagues! However, the variety was about the same, except that we did manage to add a couple of specimens of *L. astyanax*. These two spots contained the greatest concentration of butterflies I have seen since the time JOHN HOPFINGER and I found Papilios congregating by the hundreds on wet sand at Gold Creek, Washington. The most abundant species on Mingus Mountain however, were *A. bredowii*, *L. pseudargiolus*, and *L. wiedemeyerii*. From here we drove down through Phoenix and on to Mt. Graham at Saford, Arizona. Collecting on MT. GRAHAM was attempted on a Sunday, something I would never advise anyone to try, for everyone in that part of Arizona apparently tries to spend that day in the coolness of the evergreens that cover the side of this interesting mountain. *Neophasia terlooii* was the particular object of our search, but we were too early, and the only things seen were a few *Phyciodes*. A combination of unhappy events caused us to forsake this place without giving it the chance it deserved. We also caught a few *E. rubricata* in the vicinity of Noon Creek, on the lower slopes of Mt. Graham. Near GLOBE, ARIZONA, in the desert we found a couple more specimens of *Strymon alcestitis* and some *Apodemia mormo*. This concluded our Arizona collecting.

Notes from J. W. TILDEN.

June 26, en route in Arizona, near Cochise, weather exceptionally windy. Common species much in evidence: *Pieris protodice*, *Colias eurytheme*, *Eurema nicippe*, *Danaus gilippus*, *Pyrgus communis*. Later in day at entrance to Pinery Canyon, Chiricahua Mts.: Same species, plus a few *Phyciodes picta*, *Junonia coenia*, *Copaeodes aurantiaca*, and *Pholisora coes*. Well up Pinery Canyon were found *Euptychia rubricata*, *Erynnis funeralis*, *Mitoura siva* (badly worn), *Antigonus evansi* (few). At Onion Saddle the only common insect was *Atrytonopsis deva*, mostly badly worn, but some in good condition. Conditions were rather dry and past. June 27, Rustler's Park, conditions were apparently good: *Euptychia henshawi* (2), *Paramecera xicaque* (1), *Amblyscirtes bellus* (few), *Epargyreus clarus*, *Atrytonopsis deva*, *A. python* (3), and a number of commoner species. A single fine male *Poanes taxiles*, the first I had ever seen alive, was taken. The time element prevented the lengthy stay at this locality, which would, I am sure, have been justified in material if it had been possible.

June 28, Ramsey and Carr Canyon, Huachuca Mts., conditions very dry and poor: *Mitoura siva* was taken in fine to slightly worn condition, fairly common; one *Amblyscirtes cassus*; *Euptychia rubricata* common but badly worn.

June 29, Patagonia and Sonoita, Santa Cruz County: Heavy rain last evening; conditions moist but since this is the first rain of the season, insects not much affected: *Melitaea perse*, *M. dymas*, *M. bollii*, *Leptotes marina* (abundant), *Danaus gilippus* (exceedingly abundant, most I have ever seen, present at least by hundreds, perhaps thousands, so common that it is hard to find other butterflies), *Anthanassa texana* (few). Collecting was poor, with one bright

spot a single specimen of *Amblyscirtes aenus*. Later same day, Madera Canyon, Santa Rita Mts.: *Euptychia rubricata* (worn), *Thorybes pylades* (abundant), *T. drusius* (1), *Erynnis funeralis* (few), one *Achalarus casica*, and one *Amblyscirtes eos*. Weather was exceedingly hot; even local residents complained.

Contributors: D. L. BAUER; J. D. EFF; L. M. MARTIN; J. A. POWELL; F. W. PRESTON; O. E. SETTE; S. R. SMOKER; F. T. THORNE; J. W. TILDEN.

Los Angeles County Museum, Exposition Park, Los Angeles, Calif., U.S.A.

2. NORTHWEST — OREGON, WASHINGTON, IDAHO

by J. C. HOPFINGER

After a normal winter in most sections, the summer was unusually dry. Collecting was for the most part average or less than average in quality. No widespread migrations were reported, but certain migrant species, such as *Nymphalis californica* and *Vanessa* spp., were recorded as being locally abundant.

OREGON

The only report received was from L. M. SCOTT of Portland, who states that a cool winter and rainy spring resulted in poor collecting in the western part of the state. *Papilio multicaudatus* was taken in early May near The Dalles, Wasco Co. In June near Estacada, Clackmas Co., *Speyeria leto*, *Euphydryas colon*, and *Pieris napi* were all rather abundant, *Parnassius clodius* was in fair numbers, and *Papilio rutulus* was rather scarce. In the Mt. Hood area *Nymphalis californica* was very abundant; several species of *Speyeria* were present in late August.

WASHINGTON

WALLA WALLA DISTRICT. The excellent report by WILLIAM C. COOK is given in full:

This past year my Phalaenid collecting has been almost wholly confined to light trapping at Walla Walla and at Twin Falls, Idaho. No field collecting was done.

Last winter was somewhat below normal in temperature, but this was followed by weather warmer than normal in spring and summer. Five of the six months between March and August were drier than normal. This warm summer weather appeared to speed up the production of broods in those species which have more than one brood, and the drought was somewhat unfavourable for some of the true cutworms that are double-brooded.

Collecting as a whole was very poor. At Walla Walla only 1929 moths, or an average of 24.4 per night, were taken. This is the lowest average I have obtained in 8 years of trapping, and is about half the normal number of moths. At Twin Falls, the trap run by J. R. DOUGLASS captured 9.4 moths per night, which is also about one-half of the 8-year average.