

# The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY

c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U. S. A.

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Volume II

Supplement

## THE FIELD SEASON SUMMARY OF NORTH AMERICAN LEPIDOPTERA FOR 1948

The field observations of North American Lepidoptera for the 1948 season were somewhat improved over last year, when this project was initiated. However, they are disappointing in view of the large number of careful observers who failed to participate and in view of the complete lack of information on many regions and the scarcity of records of moth occurrence, migration, and parasitization. The poor California response was particularly disappointing. The excellent Northeast participation was most encouraging. Undoubtedly the small number of contributions was due in part to the serious postal delay in delivering the issue of the Lep. News which called for the individual reports. In order to circumvent such a calamity in the future, the 1949 Season Summary will be announced in the spring and the reports will be requested well in advance of the due date.

The broad pattern of Lepidoptera occurrence in North America indicated an average year, with considerable differences between Areas.

In the Southwest the season was exceptionally bad, following the very dry winter. As in 1947, spring species were earlier than usual. Most of the season was dry, but Arizona had late summer rainfall and Lepidoptera abundance.

In the Northwest it was not nearly as good a year as 1947. The very heavy rainfall in late spring was climaxed by heavy floods and in general the spring species were much delayed. Melanic specimens appeared in unusual numbers. Most moths suffered a poor year. In Idaho Nymphalis californica larvae nearly constituted a plague and the population pressure there may result in heavy northward emigrations in a year or two.

The Rocky Mountain region returned to near normalcy in flight dates and abundance after the late poor season of 1947. After early summer conditions were dry. There was little information on moths.

In the Great Plains the reports almost exactly duplicated those for 1947. The "heathi" type of aberrations of Strymon were exceptionally frequent. Catocala had a rather good year. In the Canadian Great Plains a very early frost was followed by ex-

tended warmth with moths in noteworthy abundance.

After the boom year of 1947 in the Central Area, the Lepidoptera conditions were average. The season was a bit early and moisture average, except in late summer, when it was dry. The only reports of Danaus plexippus mass migrations came from this Area.

The Southeast apparently had an average year. The spring species were late, as in 1947. July and August were dry, but later conditions were warm and moist and the Lepidoptera season continued unusually late in the fall. There was little comparative information on moths. Phoebis sennae was observed in mass migration.

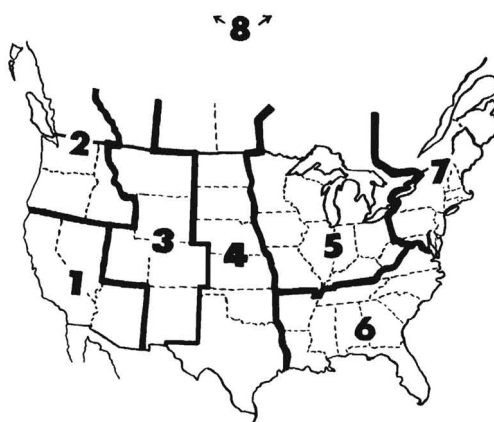
In the Northeast, the general picture showed a poor, late spring, excellent summer season, and dry, late fall. Moths had a poor year, except in Nova Scotia. Butterflies were abundant, especially the three Oeneis in New Hampshire and Maine. Polygonia interrogationis larvae were very numerous in New Hampshire. Lycaenidae had an excellent year, contrasting with the

poor 1947 season. In Connecticut, parasitization was high in the fall.

For the Far North we were again fortunate in having reports. The prospects for continued representation of the Far North in the Season Summary look good as a result of the establishment of the Northern Insect Survey under Dr. Freeman.

Mention of reduction of Lepidoptera from DDT spraying came from Washington and the Carolinas.

In this year's summary much information was accepted which would be excluded or published in other issues of the Lep. News in future years. Valuable field notes are those on Colias eye colors (p. vi), host plants (p. viii), and so on. An effort was made to use uniform names for species and genera. In most cases the nomenclature of the McDunnough Check List has been used, but a few more up-to-date names have been used. Most subspecific names have been omitted because the races are geographic in all American cases known to us. Authorities' names have been omitted since they are not necessary for this sort of project.



SEASON SUMMARY ZONES

1. SOUTHWEST- CALIFORNIA, ARIZONA, NEVADA

by Lloyd M. Martin  
Los Angeles, California

The reports on Lepidoptera in the Southwest were not as favorable as in past years. Due to less than one-half of the usual rainfall, this section of the country has experienced the poorest collecting in 20 years. Many collectors were in the field from time to time and as a rule were disappointed in finding most species of butterflies were about a month ahead of their regular flight period and were very scarce. Moths were not as abundant though some very good species were taken.

## CALIFORNIA

Thorne and Creelman report from the San Diego region the spring emergence was early. Several species continued through the year to appear ahead of schedule (Speyeria), but others were normal (Mitoura spinetorum, Lycaena hermes); at least there appeared to be a tendency for the season to swing back to normal as the summer went along. The desert slopes of the Laguna Mts. burned off with serious effects on a couple of good collecting spots. About 18,000 acres of brush and forest land burned last year and about one percent of the country's brush land goes up in smoke each year. As the human population of this area increases, the native species of Lepidoptera decrease and introduced species increase numerically. Euphydryas chalcedona had an abortive second brood in mid-July, Pieris beckerii appeared in coastal valleys in November, a couple of strong new colonies of Lycaena hermes were found, Megathymus stephensi was more plentiful, but all other desert Rhopalocera were very poor. No other rarities were seen or reported.

In the Ridge Route area, about 80 miles north of Los Angeles, the collecting was poor in comparison to past seasons, due to the lack of rain. Four trips were made between the 5th and 26th of June. Speyeria macaria seemed to be out in fair numbers, Speyeria henneli, Colias harfordi, Strymon californica, Minois silvestris, Tharsalea arota, Lycaena heteronea clara and Habrodais grunus were taken but were not nearly as common as in a "normal" year.

The last week of July to August 2nd were spent in the High Sierras of Inyo and Mono Counties of California by Wm. T. Meyer and F.W. Friday. The season was retarded from eight to ten days due to the lack of snow and moisture compared to past years. Melitaea malcolmi was just about at the end of its flight in the Barney Lake region. Between this Lake and Lake Mary, a distance of five miles, Lycaena cupreus and Oeneis ivallda were just starting to emerge whereas Euphydryas nubigena was very common. At Barney Lake, el. 10,200 ft., Colias behrii, Plebeius podarce, and Polites sabuleti were very abundant, Parnassius clodius was just coming out. No Papilio indra were seen in this locality, where they were collected in previous years. Near Lake Mary, Speyeria malcolmi and the day-flying moth Platyrepia guttata form ochracea were taken flying on the hill slopes. At The Minarets, el. 9,300 ft., there was a little snow on the ground and the Euphydryas nubigena and Lycaena cupreus were flying in

good numbers, as was Plebeius icarioides. Plebeius shasta and a few Philotes battoides were taken at the ridge and near-by meadows. At Mono Lake region Speyeria nokomis were just coming out. The hybrids of Limenitis lorquini and weidemeyerii were taken in small numbers. Also flying were Lycaena rubidus, Tharsalea virginensis and Platyrepia guttata form ochracea. Near Bridgeport Minois boopis and paulus were in full flight. In the June Lake district, el. 8,500 ft., collecting was too early, a few Phyciodes campestris and Minois oetus were taken.

Sperry reported from the Upper Santa Ana River, el. 6,300 ft., that the extreme dryness resulted in "the poorest collecting in 20 years" there.

## ARIZONA

At Yuma, collecting was very poor during most of the year. There were a few things out early in January as a result of the late fall rains of 1947. The only other time that there were Lepidoptera enough to make collecting worthwhile was late in October for a few weeks after the good soaking rain about the middle of the month.

## Weather data:

Total precipitation for year 1.83 ( $\frac{1}{2}$  the normal).  
Total precipitation Jan. 1 to Oct. 1 - 0.50 inches.  
Total precipitation Oct. 1 to Dec. 31 - 1.33 inches.

These weather factors will help explain the above statement in regard to collecting. As far as could be found out, Hemileuca juno did not fly this year.

At Prescott, collecting during June was about average with some species above average in numbers. In Oak Creek Canyon, collecting was rather poor during June; the season for most species was later than usual. At the San Francisco Peaks, collecting was about the same as in former years, some species flying a little earlier than in preceding years. Conditions in general were dry. In the White Mts., collecting in August was fairly good as far as species collected, but the late summer months were very rainy and limited collecting considerably. In the Chiricahua Mts., the August collecting was good; some species were very abundant, but the weather was very rainy - about 15 inches in two weeks. In the Santa Rita Mts., collecting was poor because of rain, but very good in the foothills and on the desert around the mountains. In the Santa Catalina Mts., collecting in August and September was poor in general; conditions were too dry, as in 1947. Moths however were abundant in and around Sabino Canyon. Around Tucson, Libytheana bachmanii was exceedingly abundant.

It is unfortunate with all the moths collectors we have here in the west that NO direct reports came in of their activities.

No reports were received from northern California or from Nevada.

Contributors: D.L. Bauer; J.L. Creelman; F.W. Friday; W.T. Meyer; D.E. Parker; J.L. Sperry; F.T. Thorne.

by John C. Hopfinger  
Brewster, Washington

A phrase appearing repeatedly in the individual reports received from collectors in Area 2 is a "late, wet spring". This was in contrast to 1947, when the season was somewhat early in most localities. The wet spring was climaxed in early June by the terrible floods of the Columbia River and its tributaries and the heavy rains and widespread flood damage surely had severe effects for the Lepidoptera which live in lower localities. The lateness of the flight periods continued at least into August.

Baker reported from the Blue Mts. district of OREGON that the late spring was followed by excellent collecting in late June, especially for Lycaenidae, Euphydryas, Erebia epipsodea, Papilio, and Pieris napi. Papilio indra and Mitoura spinetorum appeared to be somewhat less abundant than usual.

Manning, in IDAHO, found that the "collecting season was slowed up as much as two weeks even in August" and that cold rains and storms resulted in irregular appearance of Lepidoptera and unusually cold conditions. The cold affected the Catocala and Sphingidae and both had a poor year. The late season in early August was shown by Speyeria atlantis and S. egleis, of which only males were found on the date when both sexes are usually common. For the third consecutive year Nymphalis californica was extremely abundant, the caterpillars defoliating the mountain lilac in some localities.

In southeastern WASHINGTON, Cook found in his normally dry region continuous wet conditions, with "two measurable rains" in August. The dry-loving species were adversely affected. Phalaenidae which were more abundant than usual in light trap studies were: Graphiphora c-nigrum; Ceramica picta; Leucania minorata; Septis spp.; Amphipyra tragopoginis; Autographa simplex and A. californica; Hypena humuli; and especially Platyperigea extima. Phalaenidae which were distinctly less abundant than usual were: all Euxoa; all Agrotis; Peridroma saucia; all Scotogramma; all Polia; and especially Schinia sexplagiata. Cook did considerable interesting rearing, on which he promises notes in the Lep. News soon.

Here in north-central Washington we found the early collecting about on time and normal. Euchloe creusa was common, but E. ausonides scarce. All other Pieridae were in fair numbers. Incisalia iroides were common. Glaucopsyche columbia was scarce. During the first 3 weeks of May, we had heavy showers and cold, windy days, but by May 25th Melitaea sterope was very common. In early June Minois oetus and M. paulus, Plebeius acmon and P. montis, Philoetes oregonensis were normally common and Phaedrotes piasus was surprisingly numerous. Oeneis nevadensis, which here shows in numbers every second year, was fairly numerous again. Lycaena heteronea was very abundant, as were L. helloides and Minois baroni a little later. In early September, in the mountains (el. 7500') south of Wenatchee, butter-

flies were in very good numbers; I noted especially Speyeria mormonia, S. hydaspe, and S. zerene; Pieris occidentalis; Colias philodice; and Satyrus fuliginosa. This was the poorest Papilio year I have ever seen here. A fine little colony of Pachysphinx modesta around my place seems to have been wiped out by DDT spraying of nearby orchards. Strymon titus and S. saepium were fairly numerous; they had not been seen for several years. The number of melanistic aberrations this year was noteworthy. I found melanistic Plebeius acmon, Callipsyche behrii, Lycaena nivalis, and Melitaea sterope.

In northwestern Washington, Frechin found the spring wet and late and the wetness continuing all summer. Exceptionally common species were: Euphydryas editha; Coenonympha tullia; Incisalia polios; and Callophrys viridis. For the third straight season Nymphalis antiopa was not seen; and N. californica was rare, after the good year in 1947. Less common than usual were: Pieris napi; Colias occidentalis; Glaucopsyche columbia; Speyeria cybele; and S. hydaspe. A notable capture was Catocala elda. Mrs. Henriksen took Oeneis gigas on Mt. Constitution.

Guppy made detailed observations on southern Vancouver Island, BRITISH COLUMBIA. The hibernating nymphalids were not in evidence this year; a single Nymphalis antiopa and one N. californica were found in March and April. N. milberti and the Polygonia spp. finally left dormancy in early May. Thereafter the flight periods were about normal. Incisalia iroides and Lycaena helloides appeared for the first time since 1945 and were common. Lycaenopsis pseudargiolus and Limenitis lorquini were abundant as is invariably true. For the second successive year Papilio eurymedon and especially P. rutulus were unusually numerous. Fresh Speyeria zerene and S. hydaspe were found continuously from early July through August. Minois alope is continuing its steady increase in abundance. Strymon melinus, usually scarce, was common in July and August. Neophasia menapia was reappearing, about a dozen having been seen. In 1945 "vast swarms" appeared through August, September, and early October; in 1946 it was uncommon; in 1947 none were seen. Among Sphingidae Hemaris diffinis had a poor year, but 3 specimens of the rare Proserpinus flavofasciata were taken, and Smerinthus cerisyi was present frequently; no Celerio have been seen since 1945. 1948 was an exceptionally good year for Arctiidae. Diacrisia virginica, Isia isabella, Halisidota maculata, and Arctia caja were unusually numerous. Hyphantria textor was less common than last year, when it was very common. Early Phalaenidae, such as Xylomyges hiemalis, X. rubrica, Xylena nupera, X. cineritia, X. curvimacula (?), and Orthosia hibisci were all abundant. Later Autographa californica and several species of Zale were common. The usual light trap pests, Graphiphora smithi, Nephelodes emmedonia, and Lycanodes purpurea, were surprisingly scarce.

Contributors: J.H. Baker; W.C. Cook; D.P. Frechin; R. Guppy; J.H. Manning; H.E. Rice.



by J. Donald Eff  
Boulder, Colorado

Flight periods were apparently normal again this year, being for the most part earlier than last year's retarded season. While the 1947 season ranged from slightly below what we might call normal to very poor, this season in contrast varied from excellent in the vicinity of Boulder, Colorado, to very poor in sections of Wyoming and Montana. In some cases areas not many miles distant from each other had greatly differing collecting conditions. One lamentable fact is the absence in our Area of resident collectors. While information supplied by such collectors as A.G. Lauck, on his trip through the Rocky Mt. region, is of great assistance, it necessarily cannot impart the complete picture that only a resident collector thoroughly familiar with his area and the fauna can give. Thus, the only State covered with any degree of completeness this year is Colorado, although we are indebted to others for the information on the rest of Area 3.

No report from ALBERTA was received this year.

In MONTANA, the only area reported is Glacier National Park, visited during the second week in July. It was too dry and windy for good collecting.

For WYOMING, the outlook was quite spotty. It seems that certain mountain areas had sufficient rainfall to ensure good collecting while others suffered for lack of the needed moisture. Thus, I understand that Yellowstone National Park provided good collecting during July especially, while just to the south, in the Tetons, conditions were very poor owing to the unusual dryness. Oeneis jutta, normally fairly common, appeared to be absent from the Tetons. The Big Horn Mts. provided very good collecting; but in the area south of the Tetons around Daniel, Glasgow reported conditions poor with hot, dry winds prevailing the entire summer.

From UTAH we had no report at all, either from the two resident collectors or the one that I know who collected through that State on a trip to and from Nevada. This we regret.

COLORADO is favored with reports from the northwestern corner of the State, and then thru the central part of the State from Boulder to the New Mexico border. The general picture for this State seems to be a rather dry season, especially in the north and south, with the central part developing the same conditions a little later in the summer.

Most species of Papilio seemed to occur in about their usual numbers, except that P.S. Remington and I noted more specimens on the wing of what we surmised to be P. bairdii, although we failed to capture any. Dr. Wiest claims that a few years ago they were fairly common but that recently he hasn't seen any. Perhaps this marks the beginning of the upswing of their cycle. More abundant than last year seem to have been the following: Oeneis chryxus; O. uhleri; Anthocharis sara; Pieris sisymbrii; Incisalia mossii; Callophrys sheridanii; Philotenes optes; Euphydryas eurytion; Phyciodes nycteis; Nephosis menapia; Speyeria eurynome; Nymphalis mil-

berti; Apodemia nais; Strymon titus; Mitoura siva; and Ochlodes snowi. C.D. Schryver and F.M. Brown reported Incisalia polios more abundant than usual.

Entirely missing this year seemed to be Nathalis iole, Strymon melinus atrofasciata, and Euptoieta claudia. The general lack of specimens may be connected with the dryness of the summer. An excellent concept of the dryness of the season, particularly from the middle of July on, was shown in a chart made by Dr. Hugo Rodeck, of the Museum of the University of Colorado, during an expedition to the Dinosaur National Park in northwestern Colorado. Most of the temperatures for days of that month read in the higher 90's, with a relative humidity as low as 5%. I have had the privilege of examining the specimens collected there and note with interest the number of Pieris beckerii taken. It apparently does not occur east of the Continental Divide.

Others appearing to be less plentiful than usual were: Oeneis lucilla; Strymon saepium; Lycaena xanthoides; L. heteronea; and L. rubidus. Lycaena snowi and Phaedrotea piasus were scarce, as usual. Most of the other things, such as Erebia epipsodea, E. magdalena, E. ethela, Boloria aphirape, B. myrina, Pieris napi, Limnitis wiedemeyerii, Euchloe ausonides, Colias scudderii, Papilio ajax, Coenonympha ochracea, Euphydryas capella, Minois alope, M. oetus, Plebeius melissa, P. icarioides, and Glaucopsyche lygdamus, occurred in about the usual numbers. Most species of Speyeria were a little more abundant than usual.

Items of particular interest include: F.M. Brown's report of his first specimens of Strymon melinus franki seen at Fountain Valley School and his report of Eumenis ridingsii for the first time on the plains; Rev. Rotger's capture of Minois meadii and Speyeria atlantis; and D.B. Stallings' captures of Megathymus streckeri and M. texana in southwestern Colorado and northeastern New Mexico. Hereabouts it was the capture of Eurema nicippe by P.S. Remington and my capture of Hemiargus isola coupled, of course, with our memorable trip to Rabbit Ears Pass for Speyeria secreta and sinope. (See Lep. News, vol.2: pp.91-92). I also captured a specimen of S. sinope in a swamp at about 10,000 ft. elevation between Brainerd and Mitchell Lakes in Boulder County.

What little information is available from NEW MEXICO seems to indicate that the season there was retarded somewhat, evidently by a late cold spell, although the season directly to the north, in Colorado, was normal. Rev. Rotger took 2 specimens of Pieris beckerii at Shiprock, New Mexico.

Not much information on moths is available, which is regrettable. Too few western collectors, with the wide range of Rhopalocera present, trouble themselves with the moths. The author is one of the guilty parties. However, Rev. Rotger does report the unusual abundance of Leptarctia californiae and the fact that the Catocala species were common this year.

Contributors: F.M. Brown; C. Glasgow; A.G. Lauck; P.S. Remington; B. Rotger; C.D. Schryver; D.B. Stallings.



4. GREAT PLAINS- TEXAS AND EASTERN PLAINS OF ROCKY MTS. STATES  
TO SASKATCHEWAN AND MANITOBA

v

by Don B. Stallings  
Caldwell, Kansas

NORTH

For the second successive season spring came late on the Great Plains. In the Canadian area the season was 5 to 6 weeks later than normal. The very heavy snow did not begin to disappear until the last week of April. Then the sudden hot weather precipitated the collecting directly from winter to summer. The usual spring butterflies appeared in normal numbers, but were on the wing only days instead of weeks. Hibernating and early Phalaenids were either absent or extremely scarce. Late in the season conditions became normal with most of the common butterflies present; Papilio glaucus and Limenitis arthemis were especially abundant and persistent. Among the moths Sphingids were about normal, Notodontids very abundant, but both Phalaenids and Geometrids scarce. Not a single Telesia polyphemus was seen, nor a Sthenopis. At Harlan, Saskatchewan, a few Erebica disa were seen but no Oeneis macounii nor jutta. Phalaenids and Geometrids were rare, but Notodontids and Arctiids were flying in more than usual abundance. For the first time a long series of Parasemia parthenos were taken. Heavy flooding of the river flats probably was the cause of the complete absence of Minois alope, Strymon titus and S. liparops along the Battle River, Saskatchewan. Among the Speyeria there only pseudocarpenteri appeared in normal numbers.

The northern season closed with a killing frost in early September followed by warm weather, which lasted, with one interruption of severe night frosts near the end of September, until the beginning of November. Surprisingly, light trapping became ideal and on Sept. 10th about 150 specimens were taken at light, including Catocala relictata, Notodontids such as Cerura and Ichthyura, Sphingids (cerisyi, gemina, modesta), Deuteronomus magnarius (usually rare), other Geometrids including some that were spring forms, and a few other Phalaenids; Xylota curvicauda was unusually numerous. Catocala briseis and C. unijuga (normally common) were scarce; C. hermia and blandula were absent. The last butterfly was a late Coenonympha inornata on October 3rd.

Highlights of the Saskatchewan season were: a female Poecilopsis rachelae, a Vanessa virginiensis, and the discovery of a colony of Platysamia columbia nokomis larvae, a species which had not been taken there during the last twenty years.

MIDDLE

In the Kansas-Oklahoma area the season commenced wet and about 10 days late. The Incisalia were far below normal. Again Euchloe olympia was late and below normal. In the panhandle region of Oklahoma Megathymus yuccae were in full flight on April 25th, 15 days late. Normally 25 or 30 species would have been in flight in the area at that time, but the only others observed were a few E. olympia and Mitoura siva. In southern Kansas Glaucopsyche lygdamus did not occur until April 18th, a good 10 days late. Early Amblyscirtes were absent.

While it was cold and wet through March and most of April the season advanced rapidly in May, which was very dry. By the last of May the season could be considered normal. By May 23rd Strymon ontario and falacer were in full flight in the Wichita Mts. of southern Oklahoma (normal time) and for the second time we found a number of specimens of both species with the white lines on the under surfaces expanding to form a single band in typical "heathi" fashion. Catocala were abundant on this date in the Wichita Mts. and often 30 to 50 specimens were fighting to get to a single smear of bait; the commonest species were ilia, coccinata, ultronia, micronympha and amica.

June was ushered in with floods and the rains continued until the middle of July. Strymon alcestitis, which normally appears around the 1st of June, was on time but extremely rare, only 5 or 6 specimens being observed where normally there would be 500. In southern Kansas there was a fine flight of Hesperia during the first half of June including the species viridis, uncas, attalus and ottoo. On June 15th worn specimens of Megathymus texana were observed in the panhandle of Oklahoma, which would indicate a normal flight beginning about the 1st of June. The fall was dry with collecting poor, very few fall forms.

SOUTH

The season in Texas was slightly below normal as the past year had been unusually dry. The spring cold spell for the Great Plains extended into the Rio Grande Valley area. Anthocharis midea was taken at Pleasanton, Texas, on March 3rd. Pupae and larvae of Megathymus yuccae taken at San Antonio, Texas, on this date and brought back to Kansas did not emerge until after the middle of April, though kept in a warm room. Normally this species would be in flight in southern Texas from the end of February through March.

In the Rio Grande Valley the following species were abundant: Atlides halesus; Strymon clytie; Hemiarctus cyna; H. gyas; Asterocampa clyton. The following species were about average: Ascia josephina; Danaus eresimus; Myscelia ethusa; Apodemia walkeri; Strymon azia; Incisalia henrici; Astrartes fulgerator; Cogia calchas; Amblyscirtes bellus; Cabares potrillo; and Asterocampa leilia. The following species were scarce: Papilio ornythion; P. polydamus; P. anchisiades; Anteos clorinde; A. maerula; Strymon pastor; Thecla bazochii; Mitoura xami; Lerodea tyrtaeus; L. edata; Lasia sessilis; Cogia outis; Pellicia costimacula. New records were: Proteides mercurius and Cobalus percosius.

The coverage in Area 4 is still poor, this summary being based on the observations of three groups of collectors with no report to cover the Dakotas or Nebraska. Collectors from other areas who stop in the Great Plains even a few days should write reports.

Contributors: P.F. Bruggemann; H.A. Freeman; J.R. Turner.



by P.S. Remington, Jr.  
St. Louis, Missouri

The coverage of the Central Area in 1948 is by no means as complete as it should have been, considering the number of lepidopterists who operate in this area. Reports from more collectors will be eagerly welcomed after the 1949 season. Several collectors have kept a sort of "Lepidoptera diary" of their observations and finds throughout the season. This makes the season's report an accurate and easy task and is recommended to all collectors.

In MISSOURI the collecting season got off to a normal start and stayed that way most of the year, although the last part of it was quite dry. Early visits to favorite spots in St. Louis County yielded, besides the common species, the rarer Incisalia henrici, Euchloe olympia, Anthocharis midea, Mitoura damon. One noteworthy observation was of a fresh specimen, apparently recently emerged, of Danaus plexippus on May 18. This may indicate that some individuals do pass the winter in Missouri in the chrysalis. It has been thought that plexippus does not winter here, that the adults migrate south in the fall and that a later brood comes north in early summer to repopulate the area.

At Alton, ILLINOIS, Lauck found about the same collecting as reported above near St. Louis. In late April he took Anthocharis midea, Feniseca tarquinius, Everes comyntas, Lycaenopsis pseudargiolus, Incisalia henrici, Amblyscirtes hegon, Thorybes bathyllus, Erynnis brizo, E. persius, and E. icelus. A great rarity for this area was taken on April 25 at Marquette State Park, Grafton, a single specimen of Strymon m-album. On June 20 Lauck reports the first Danaus plexippus, as well as Speyeria cybele, Minois alope, Phyciodes tharos, and other commoner species. In late August he found collecting excellent. The season near Alton was about two weeks early at the start, but by the last of May everything seemed again on schedule. An early freeze on Oct. 17 killed off some of the fall butterflies, but late hatchings made up for it.

In northern Illinois Bristol reports collecting on blackberry (Rubus) a larva of Strymon liparops which later hatched out. He noted that Rhodophora gaurae has been common for several years, but in 1948, R. florida was the common one. He was also very successful in collecting and rearing larvae in Oklahoma in April and May of the following species: Strymon edwardsi, S. autolytus (both on oak); S. alcestis (on china berry); Catocala micronympha, C. coccinata, and C. ilia (all on oak); C. somnus (on cottonwood); C. abbreviatella (lead plant). The larvae of Catocala ilia collected in Oklahoma were heavily parasitized. Kricogonia lyside was common on lilac flowers. Noteworthy INDIANA captures were: Sibine stimulea; Parasa chloris; and Apatelodes angelica.

Woodcock reports finding Anthocharis midea, Neodezia albobittata and Haematopis grataria, at Turkey Run Park, near Marshall, Indiana, on May 5. In August he ran into a host of Speyeria atlantis and S. cybele at Big Springs, Michigan.

In WISCONSIN, Griewisch found the season around Green Bay about ten days advanced over 1947. On May 30 he caught many Hemaris diffinis and H. thysbe, an early record for these clearwing moths. A careful search of Marinette County for Oeneis chryxus strigulosa was unsuccessful. On June 11 he took a good series of skippers in Brown County, including Erynnis brizo, E. juvenalis (both are found two months earlier in Missouri), Poanes hobomok, Carterocephalus palaemon, Polites peckius and P. mystic. At this time Limenitis arthemis and Papilio glaucus were just emerging. June 20 in Marinette County he took more skippers, including Hesperia sassacus, Amblyscirtes hegon, and others. "Caught several males of Colias interior with both black and green eyes, the green eyes turning black after specimens were prepared for a while." July was so hot and dry very few specimens were taken, either in Wisconsin or on a trip through South Dakota, Wyoming, Colorado, and Nebraska.

Arnhold at Chippewa Falls, Wisconsin, reports that the winter of 1947-1948 was so severe that many trees were killed by prolonged temperatures as low as -42 F. This was followed by a summer unusually hot and dry, and it was not a good collecting year. His observation indicates that Danaus plexippus does not survive the winter there, but that worn females make their appearance in June and start the summer brood, which then definitely migrates in the fall. In 1948 the migrations began around the first of September and were going strongly from the third to twelfth. "They seemed to be flying rather close to the ground, stopping to feed freely." On the ninth he "noticed some as high as 300' to 400' drifting in a southerly direction between S.E. and S. They all seemed to be going in that general direction. At night they would stop in bushes and lower branches of trees. The only rush was on the 9th", when there were local showers.

Sieker, collecting near Madison, Wisconsin, found the collecting better than for some years, although he too found the latter part of the season very dry. Papilio ajax was extremely common; P. glaucus almost as common, Pieridae about as common as usual, although P. rapae was noticeably more scarce, P. napi more common in the north. Lethe portlandia and Megisto euryta were the commonest he has ever seen them, but Lethe eurydice was quite rare. Minois alope was not as common as formerly. Speyeria were more abundant than the year before, indicating that the early feeders were not affected by the drouth late in the previous season. The Polygonia were all quite rare, and Nymphalis antiopa was rare where it used to be common. Limenitis arthemis was more common than in many years. Strymon were really quite rare "but somewhat better than the 1947 season", which was disastrous. Lycaena thoe and L. dione were common; no L. helloides appeared this year. Sieker is a close observer of moths and found the early species of Sphingidae, Amphion nesus and Sphecodina abbottii, more common than usual; most of the other Sphingidae were quite rare, even Celerio lineata. The 4 common local Saturniidae were abundant.

This year he found only one Anisota rubicunda, usually common. Arctiidae were not as common as in previous years, but this was a better than average noctuid season. Catocala started off slowly but were abundant in July. However, only one C. cara was found all season. He took one C. coccinata and one C. neogama, both rare there. Geometrids were scarcer than usual.

In MICHIGAN Mrs. Hynes was successful in finding and rearing larvae of common Saturniidae, several Arctiidae, Eacles imperialis, Cicinnus melsheimeri, Papilio troilus, and others. One of her P. troilus larvae produced the well-known aberration sometimes called 'radiatus', a noteworthy discovery. Unfortunately, she can not yet give comparative data on net collecting. Richard reports the successful rearing of Libytheana bachmanii from the egg, the first record of the species in Wayne County, Michigan. A female was observed laying the eggs on hackberry (Celtis). All stages of the life cycle were observed and perfect imagoes obtained. Asterocampa clyton and C. celtis were also noted to be very plentiful on the hackberry.

From Payne, OHIO, Price reports that the season varied from normal to rather dry, late in the year, the usual observation in Area 5 in 1948. A single specimen of Speyeria idalia was taken, the first from this area. At Mud Lake in the extreme northwest corner of the state, the following skippers were much more plentiful than in 1947: Poanes massa soot; Atrytone conspicua; A. dion; A. bimacula. Speyeria aphrodite (near race alcestis) were more plentiful also, but typical aphrodite was rare, just the reverse of last year. Lycaena dorcas was also taken at Mud Lake, a new record for the state. An oddity was the capture on November 23 of a fine Colias eurytheme, the latest record known there.

Our only correspondent from KENTUCKY is Cook from Crailhope. He writes that 1948 was one of the best seasons in many years, with the exception of late fall, which was very dry and cool. Papilio glaucus had a peak year, ajax and philenor normally common, with ajax having a remarkable abundance in early September. Papilio marcellus continued to be very scarce. Only a few torn Papilio cressphontes were seen. Early April ajax, glaucus, and philenor were dwarfed. Anthocharis midea made a weak comeback after being entirely absent in 1947. No Euchloe olympia were seen. Colias were very scarce, as was Danaus. Notable captures were two Strymon m-album and one Attilides halesus. Anaea andria had a good year. Mitoura damon was very scarce in spring, but appeared in great abundance in mid-July. Strymon cecrops had a peak year. Agraulis vanillae was seen in small numbers in early fall.

Contributors: F.R. Arnhold; M.L. Bristol; C. Cook; L.W. Griewisch; Mrs. V.P. Hynes; A.G. Lauck; H.F. Price; R.E. Richard; W.E. Sieker; H.E. Woodcock.

Addenda: A.L. McElhose reported a migration of Danaus plexippus at Arlington Heights, Illinois. On September 20, at 3:00 p.m. there were "thousands of them on the wing", and the heavy flight had been passing for 3 hours then. At 5:00 p.m. he wrote: "Still a few stragglers moving. Cloudy all day."

by Ralph L. Chermock  
University, Alabama

An extremely cold winter, climaxed by unusually cold weather in January, apparently retarded the emergence of many species. Also, this variation in temperature might have played some role in the scarcity of many species normally abundant. The hurricanes in Florida were of insufficient severity to affect the insect populations. A prolonged dry spell in the Gulf States during July and August seemed to decrease the normal flights, and many species were either rare or absent. A warm autumn throughout the region, coupled with normal precipitation, extended the flight periods well into December.

J.G. Franclemont, one of the leading students of moths, who has been collecting in VIRGINIA during the last year, has sent in a remarkable list of species. It may be summarized by families as follows: Noctuidae - 224 species; Notodontidae - 13 spp.; Arctiidae - 16 spp.; Geometridae - 84 spp.; Eucleidae - 16 spp.; Zygaenidae - 1 sp.; Megalopygidae - 2 spp.; Lacosomidae - 1 sp.; and Lasiocampidae - 1 sp. He also observes that a large number of species of moths, such as Dercetis pygmaea, have more northerly ranges than had been previously expected. In future years he will be able to draw comparisons between seasons. Of great value is the list of foodplants based on his extensive rearing, given at the end of this summary.

Information on the GREAT SMOKY MTS. is sparse. However, H.L. King observed that the continuous DDT spraying during the 1948 poliomyelitis epidemic "Played havoc with Lepidoptera." Martha Sellers noted that the females of Speyeria diana, which are usually on wing in late summer, were becoming rare.

M. Eugene Smith, collecting around Newman, GEORGIA, at the southern end of the Appalachians, made the following observations on relative abundance in comparison to previous years. He observed that the following species occurred in normal frequency: Phyciodes tharog; Vanessa virginiensis; Strymon melinus; Incisalia nippon; I. irus; Amblyscirtes vialis; Achalarus lycidas; Catia otho; Hylephila phylaeus; Problema byssus; Erynnis terentius; and Thorybes pylades. The following species were more abundant than normally: Atrytonopsis hianna; Hesperia metea; Thorybes bathyllus; and Erynnis martialis. The majority of the species found in the area, however, were considerably rarer than usual. These were: Papilio philenor; Eurema lisa; E. nicippe; E. jucunda; Phoebis eubule; Pieris protodice; P. rapae; Minois alope; Euptychia gemma; E. cymela; E. scosybius; Phyciodes ismeria(?); Euptoieta claudia; Agraulis vanillae; Polygonia interrogationis; Junonia coenia; Limenitis archippus; Libytheana bachmanii; Strymon cecrops; Erynnis icelus; E. brizo; E. horatius; Pholisora hayhursti; Lerema accius; Lerodea eufala; Proteides clarus; Calpodus ethlius; Copaodes minima; and Atrytone logan.

Along the coastal region extending from SOUTH CAROLINA TO GEORGIA the flights were "Normal to off." H.L. King particularly noted the absence of Limenitis astyanax and all species of Colias. H.W. Eustis



noted that Megathymus yuccae was not collected in areas where it previously had been found. He also observed that the increased human population had reduced the number of butterflies in his area.

In central and northern FLORIDA, the flights were normal; but Strymon favonius, Brephidium pseudoea, and Anartia jatrophae were absent. Minois pegala and Mitoura damon were scarce. The species of Asterocampa were abundant, along with Euptychia gemma and cymela.

In southern FLORIDA and the Keys, H.L. King noted that the flights were subnormal. There was a noticeable scarcity of Strymon favonius, Eurema nise, Strymon acis, Eunica tatila, and Papilio aristodemus ponceanus. No Eumaeus atala were observed.

A.B. Klots compared collecting during July of 1947 and 1948, and makes some interesting observations on butterflies of southern Florida. In Royal Palm Park, the fauna was normal, with Phyciodes phaon being somewhat more abundant. Collecting at Brickell Hammock was normal, with an increased abundance of Appias drusilla. An additional record of Asbolis capucinus verified Mrs. Grimshaw's record of this species in 1947. Dr. Klots seemed to feel that this introduction is probably definitely established in this region. His observations on the Keys are as follows: "On Key Largo, things were evidently much drier than normal. Even the shaded interiors of the hammocks were bone dry, and dead leaves powder dry. The roadside flowering plants were much affected; and collecting was definitely poorer for many species. Some of this may have been cyclic, however, and not due to drought. Eurema nise nelphe, which was taken in good numbers in 1947, was totally absent. I also failed signally to get Kricogonia lyside and Eurema daira palmira, although I collected the right spots to the inch on the right days. Polygonus lividus savigny may have been actually more common. A considerable swarm of Brephidium pseudoea was found on Plantation Key, the most I have ever seen at one time."

In ALABAMA, most species were late in emerging because of a snow fall in January, followed by a prolonged cold spell. Consequently, early spring forms such as Erynnis brizo and Papilio marcellus were late in emerging, although their numbers were apparently unaffected. A prolonged dry spell during the summer decreased the flights, although many species occurred in normal abundance somewhat later. A migration of large numbers of Phoebis eubule, flying in a southerly direction, was observed in the first two weeks of September. This migration was also noted throughout northern Alabama and Tennessee. The large migration of Danaus plexippus observed in the latter part of September, 1947, was not duplicated in 1948, although a few individuals were seen passing through around September 15th. Lethe eurydice appalachia was found in numbers in Moody Swamp near Tuscaloosa, an extension of the known range of this subspecies.

A population study was made in the Tuscaloosa area based on 1,628 specimens of butterflies collected on 13 days throughout August and early September.

The following relative frequency by families was noted.

FAMILY	NO. OF SPECIMENS	PERCENTAGE
Papilionidae	3	0.2
Pieridae	138	8.5
Danaidae	1	0.1
Satyridae	11	0.7
Nymphalidae	400	24.6
Lycaenidae	139	8.5
Hesperiidae	936	57.5

Of a total of 42 species collected, the most abundant, in order, were: Atalopedes campestris; Hylephila phylaeus; Euptoieta claudia; Pyrgus communis; Everes comyntas; Agraulis vanillae; Phyciodes tharos; and Eurema lisa, with the others being scarce.

In MISSISSIPPI, Bryant Mather observed no significant changes in the flights of 1947 and 1948. However, he also noted that the cold spell in January retarded the emergence of most species. Collecting in LOUISIANA was good, but no comparison could be made with previous years.

No reports were available on Tennessee, Arkansas, nor comparative data on Heterocera.

Contributors: H.W. Eustis, J.G. Franclemont; H.L. King; A.B. Klots; B. Mather; Martha Sellers; M.E. Smith.

#### VIRGINIA HOST PLANTS RECORDED BY J.G. FRANCLEMONT

Phosphila miselioides - reared on Smilax rotundifolia (Catbrier).  
Prodenia dolichos - reared on Ricinus communis (Castor Bean).  
Pyrrhia umbra - larvae collected on terminal leaves of Rhus typhina (Sumac).  
Xanthoptera nigrofimbria - reared on Syntherisma sp. (Crab Grass).  
Acontia aprica - reared on Althaea rosea (Hollyhock).  
Euparthenos nubilis - reared on Robinia pseudoacacia (Black Locust).  
Mocis texana - reared on Syntherisma sp.  
Mocis latipes - reared on Syntherisma sp.  
Celiptera frustulum - reared on R. pseudoacacia.  
Hypsorophia hormos - reared on Diospyros virginiana (Persimmon).  
Phiprosopus callitrichoides - reared on Smilax rotundifolia.  
Agrotis annexa - reared on Taraxacum officinale (Dandelion).  
Anicla infecta - reared on Zea mays (Corn).  
Orthodes crenulata - reared on Tar. officinale.  
Dasylophia anguina - reared on R. pseudoacacia.  
Heterocampa biundata - reared on Carya sp. (Hickory).  
Anacamptodes defectaria - reared on Prunus serotina (Wild Cherry).



by Eugene Munroe  
Macdonald College, Quebec

Representative reports are available for the Atlantic coastal region; but for inland regions, owing partly to the inactivity this year of several usually productive collectors, reports have been scanty. The general picture has been one of a cool and unfavorable spring, followed by more normal conditions in July and August, with a late and dry autumn. In western New York and Quebec, at least, snowfalls were abnormally light, and very cold winter weather resulted in unusually deep freezing of the ground; Kimball reports frost to the exceptional depths of four and five feet from the vicinity of Rochester, N.Y. Snowfalls were heavier in the regions north of the St. Lawrence Valley, but still abnormally light by local standards. Lepidoptera appear to have been generally depressed in numbers except in the extreme south and extreme north of Area 7. An exception may be noted in Nova Scotia, where Heterocera were unusually abundant at light, although Rhopalocera were depressed as elsewhere. Detailed summaries by localities follow.

MONTGOMERY CO., MD., April 23 to May 1. Everes comyntas, Phyciodes tharos, Colias eurytheme, C. philodice, and Pieris rapae were abundant. Papilio glaucus, P. phile nor, Polygonia interrogationis, Proteides clarus, and Erynnis horatius were frequent. Papilio glaucus (dark female), P. marcellus, P. ajax, Lycaena hypophleas, Pholisora catullus, and Erynnis persius were rare.

MONTGOMERY CO., PA., July 1-5. Everes comyntas, Speyeria cybele, Euptychia eurytus, Papilio glaucus, Colias eurytheme, C. philodice, Pieris rapae, and Proteides clarus were abundant, especially the last. Papilio philenor, P. ajax, P. glaucus (dark female), Vanessa atalanta, and Erynnis spp. were frequent. Polygonia interrogationis, Euptoleta claudia, Eurema lisa, Strymon falacer, S. titus, S. melinus, Pholisora catullus, and Poanes spp. also were taken.

ORANGE MTS., N.J., May to September. The season was late, but extremely good in summer and autumn. Colonies of Eurema lisa and Papilio cressphontes were found and appear to be well established. Rhopalocera recorded (dates not available): Danaus plexippus, Phyciodes tharos, Vanessa atalanta, Limenitis archippus, Lethe eurydice, Everes comyntas, Lycaenopsis pseudargiolus, Eurema lisa, Colias eurytheme, C. philodice, Pieris rapae, Papilio glaucus, P. troilus, Pholisora catullus, Proteides clarus, Poanes zabulon, P. hobomok, and Ancyloxypha numitor were common. Polygonia interrogationis, Limenitis astyanax, Strymon melinus, Papilio ajax, P. glaucus (dark female), and P. cressphontes were scarce.

OAKLAND, N.J., Kimball took 25 specimens of Proteoleucania rubripennis at light.

CATTARAUGUS VALLEY, WESTERN N.Y. Catocala were present at the usual time. C. parta, uni-fuga, mes-kei, concupens, cara, and amatix were in normal numbers, but relicta, neogama, and paleogama were not seen, although normally not rare. C. cerogama (formerly abundant) was very scarce, as in the past

two or three years. Geometridae were about as usual in late summer. Plagodis phlogosaria reappeared in small numbers for the first time since its sudden disappearance in 1946. The late summer generation of Campaea perlata appeared at the normal time (last week of August), but in unusual abundance. In the late fall, Erannis tiliaria and Alsophila pometaria were unusually scarce, but Oporophtera bruceata was normally common.

ROCHESTER, N.Y. Butterflies were very scarce up to July 1; there were more after that date, but numbers were still limited. Response of Heterocera to both bait and light traps was probably poorer in both species and specimens than in 1947. Comparative figures for five experimental chemical baits were:

Year	Specimens	Species
1947	351	88
1948	115	53

Data are from Kimball. The season ended about Oct. 15th, as compared with Nov. 10th in 1947.

NEW HAVEN, CONN. Observations were from September to the end of the season. The unusually late occurrence (October) was noted for fresh individuals of several spp., such as Boloria toddi, B. myrina, and Lycaena thoe. A lone larva of Danaus plexippus on Asclepias syriaca did not finish feeding and pupate until early November, the adult appearing several days later, long after migrating individuals had all departed; relatively few Monarchs were seen this fall. Very abundant were Lycaena hypophleas, Phyciodes tharos, Everes comyntas; a few Eurema lisa were found. A small population sample of Colias on October 31 (17 males, 8 females) showed: 1 white female; 17 "pure" philodice; 5 "pure" eurytheme; and 2 hybrids; C. philodice seemed to compose the sedentary endemic population, the few C. eurytheme flying rapidly, stopping briefly, and moving on. The scarcity of the dominant Mendelian white female was surprising throughout the fall. Limenitis archippus females were commonly found ovipositing on Salix in October; at least 80% of ova collected produced tiny parasites (Trichogrammatidae?). Parasites were numerous in larval populations of Pieris rapae, especially one of the Larvaevoridae and less often, an Apanteles wasp. A much delayed larva of Proteides clarus finally produced a number of parasitic larvae which soon yielded Braconid wasps. The many larvae of Papilio troilus taken on Lindera benzoin and Sassafras officinale produced no parasites. When the leaves had fallen, Callosamia promethea cocoons proved to be abundant in nearly every clump of Sassafras and wild cherry (Prunus). One yielded 6 Larvaevorid parasite grubs.

FALL RIVER, MASS. Erynnis and other early butterflies were scarce in the cold, wet weather up to the end of May. In July, August, and September, collecting was excellent. Some Theclinae appeared in unusually large numbers: Strymon liparops, edwardsii, and falacer were in about five times normal numbers at selected collecting areas on milkweed blossoms.

NEW HAMPSHIRE. Numbers of Lepidoptera were below normal, but increased over the past two or three years. Speyeria cybele and atlantis were somewhat below normal, but aphrodite was common, as were Boloria toddi and myrina. Euphydryas phaeton was seen (June 28), for the first time in several years; Melitaea harrisii was scarce. Polygonia interrogationis, an irregular visitor to this region, was present in great numbers, and the larvae were a pest on hops; other Polygonia were very scarce. Nymphalis milberti and Vanessa atalanta appeared in large and increasing numbers as the season progressed, but N. antiopa was below normal and j-album very scarce. Colias philodice was common in the spring, but later generations were below normal numbers; C. eurytheme was scarce. Pieris napi was very scarce, even in favorable localities. Papilio glaucus was in small, but increasing, numbers; P. ajax was above normal, especially in the second generation. Colias interior was not seen; Limnitis archippus was common, arthemis scarce; Minois alope was very abundant; Lethe eurydice was scarce; Cartrocephalus palaemon was common. In the Heterocera, hibernating Phalaenids appeared early (late March), with Eupsilia devia common, but others, especially Lithophane, far below normal. Geometridae were fairly common; Catocala were extremely scarce, only single specimens of cerogama, ultronia, antinymphe and briseis were taken, all in late August. In the montane fauna, Oeneis semidea and Anarta melanopa were very abundant on Mts. Washington and Jefferson in the 2nd week of July. Oporinia autumnata and Nepytia semiclusaria were found in numbers numbed with cold on the floor of the Great Gulf, Mt. Washington, Sept. 15. Unusually late records were: Minois alope, female, Oct. 17; Lycaena hypophlaeas, male, Oct. 17; Colias philodice, white female, Nov. 9.

MAINE. After an early opening, with snow gone early in April, the weather became cold and wet, continuing so into early July in the south and into mid-July in the north of the State. Many springbutterflies were not seen, while others were in small numbers. Papilio ajax, Pieris rapae, and Poanes hobomok appeared quite late (first rapae on April 16). Erynnis icelus was in good condition at Augusta and Bar Harbor June 2-4, at Strong June 19, and on top of Mt. Katahdin July 19. Temperatures rose to normal in July, but August and September were dry in south and central Maine. Phyciodes tharos appeared in possibly 20% of normal numbers; Colias eurytheme, Vanessa cardui and virginensis, Limnitis arthemis, Nymphalis j-album and antiopa, Incisalia spp., and Strymon spp., were all excessively rare. Incisalia lanoraleensis was, however, reasonably common in late May at Dead Stream Bog, north of Lincoln. Colias philodice, Minois alope, Speyeria, Boloria, Lycaena hypophlaeas, and the skippers were in less than normal numbers. Papilio ajax, Danaus plexippus, and Peniseca tarquinius were normal and Pieris rapae very abundant. Oeneis katahdin was in at least normal numbers; O. jutta appeared June 1-10 at Passadumkeag; June 20-30 at Klondike Bog, 2500 ft., northern side of Mt. Katahdin. Eurema lisa, Lycaena thoe, and Ancyloxypha numitor were taken in the Augusta area for the first time, and Erynnis juvenalis was taken east of Bucksport. Most Heterocera were reduced in numbers, even in mid-summer. Micros

and forest-dwellers were particularly depressed. Sphingidae, especially Phlegethontius quinquemaculatus, were numerous. Apantesis quenselii was unusually common on Mt. Katahdin, but most other arctic forms were depressed. Schinia marginata was taken in numbers, a new record for Augusta. Apamea interoceanica and Papaipema were unusually common. Catocala and Autographa were scarce. Coryphista meadi was taken in numbers at Augusta. Most micros were scarce, but Crambus, Galasa nigrinodis, Pyrausta nubilalis, Synanthedon acerni, and Schiffermuelleria argenticinctella were unusually common. Crambus abnaki was common everywhere, and C. browerellus on Mt. Katahdin. Synanthedon fulvipes was taken near Augusta, and a series of Hyaloscotes sheppardi was secured.

NOVA SCOTIA. Diurnals were scarce, as for the past few years. Incisalia were scarce. I. polios appeared May 13 in southern Nova Scotia; augustus was rare; and henrici and niphon were not seen. I. augustus, Lycaenopsis pseudargiolus, Colias philodice were present June 20 in Cape Breton; this part of the Province always has an abnormally late spring, owing to the persistence of ice in Northumberland Strait. Oeneis jutta was scarce, due to bad weather at normal times of emergence (June 13-19 in southern N.S.). Plebeius scudderii, Lycaena epixanthe, and Colias interior were common in bogs in July; Limnitis arthemis showed some increase over last year. Euphydryas phaeton was found at Londonderry on July 18, somewhat past its prime. Colias eurytheme was very scarce; Polygonia and Speyeria were in low numbers. Papilio brevicauda was absent, as for several years past, at Baddeck (type loc. of bretonensis), but larvae of Glaucopsyche lygdamus were abundant on Lathyrus in early August. Heterocera were abundant at light, but not at bait, except for some hibernated Cucullinae beginning April 13. Even Catocala did not come to sugar, although they appeared at light. By the end of August, light collecting had become poor. Interesting captures were: Sympistis sp., Xylomyges dolosa, Parahyponodes quadralis, Gluphisia avimacula, and colonies of Spartiniphaga panatela, Xanthorrhoe abasaria, Semiothisa oweni, and Apacassia atropunctata. At least 14 new records of Macroheterocera were obtained by Ferguson and Hall. Coleophora kalmiella was reared at Armdale; Sthenopsis argenteomaculatus was not taken, but a specimen of S. purpurascens (?) was secured in Cumberland Co., July 19. Interesting Pyralids included Crambus lyonsellus at Baddeck, Aug. 8; Phlyctaenia acutella, a long series at Goodwood and other localities in early July; P. extricalis, end of June and early July; Hymenia fascialis at Armdale in September; Herculia thymetusalis at Baddeck in early August. Warm weather continued very late: Alsophila pomataria and Oporophthera bruceata were still flying in early December, and a straggler of pometaria was taken flying in the woods (at Armdale?) Jan. 1, 1949!

QUEBEC. In the Montreal region most Lepidoptera were in small numbers up to late June. Minois alope was unusually abundant in July, and Lethe eurydice was common. Boloria myrina was seen in exceptional numbers in late August. Junonia coenia was taken at Chartierville (?) on Aug. 25. A numerous colony of Ancyloxypha numitor was noted at Baie



d'Urfe in late August. Most groups of moths were well below even the low numbers of 1947. Prof. Gray had good collecting at a low-lying riverside locality, however. Interesting species were: Plusiodonta compressipalpis (June 27-July 12); Habrosyne rectangularis (June 27 and Aug. 21); Amphipyra glabella (Aug. 15); Nonagria sp. (Aug. 23); all in reasonable numbers. Abundant species were: Cisseps fulvicollis (June); Herculia intermedialis; Nymphula obscuralis; Archips rosaceana, (all July); Hyppa xylinoides; Plusia contexta, Graphiphora smithi; Agrotis ypsilon; Physostegania pustularia; Hydriomena fluctuata; Nymphula icciusalis (all Aug.); Graphiphora c-nigrum; Feltia venerabilis; Lycophotia saucia; Parastichtis bicolorago; Leucania unipuncta; Autographa brassicae; Lithophane laticinerea; Xanthia flavago; Ennomos magnaria (all Sept.); and Erannis tiliaria (Oct.). Ceramica picta and Pero honestarius, among others, were unusually scarce. At Lanoraie, at the beginning of June, the season was far behind normal, and Lepidoptera were scarce; a fresh Incisalia lanoraieensis was the only specimen seen of the four Incisalia normally found there, and would have been about two weeks behind normal emergence. Oeneis jutta, which would have been expected at that time, was not seen, nor was Crambus labradoriensis. At Shawinigan, in early June, Glaucopsyche lygdamus was very abundant, Coenonympha inornata common; Crambus of the leachellus group were numerous, C. browerellus much less so. In the Laurentide Park, butterflies were numerous, although slightly less so than in 1947. Glaucopsyche lygdamus, Erynnis spp., Papilio glaucus, Amblyscirtes vialis, Carterocephalus palaemon, were all common at the end of June. A single Oeneis jutta was taken. Erebia discoidalis was not seen. Worn Incisalia were present in some numbers. In August, Polygonia were present in normal numbers, gracilis being the most common species at the end of that month. Colias eurytheme (which are scarce even in the Montreal region) was not seen, but philodice was common. At Cacouna, on the south shore of the lower St. Lawrence, July 4-15, Glaucopsyche lygdamus was very common, Plebeius saepiolus less so. These two species were taken on the same day (see Lep. News, vol.1: p.89). Other species taken were: Speyeria cybele and atlantis; Boloria myrina; Hemaris diffinis; Eupithecia cretacea (taken around Veratrum); Xanthorhoe iduata; X. abasaria, larvae of Papaipema harrisi, in Heracleum, and a larva of Catocala semirelictus on a fence. Sheppard took 12 specimens of "what McDunnough calls possibly Eupithecia grata Tayl." at Montreal on June 26.

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by T.N. Freeman  
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One of the greatest difficulties in reporting lepidopterous collecting conditions in remote northern localities is the fact that a collector is rarely in any locality for more than one summer. The following season that collector may be a thousand miles from his former collecting spot and comparative seasonal summaries are therefore difficult to prepare.

During the summer of 1948 collecting parties were established by the Northern Insect Survey\* at Goose Bay, Labrador; Knob Lake (54° 47' North, 60° 48' West) and Fort Chimo, Quebec; Frobisher Bay, Baffin Island; Coral Harbour, Southampton Island; Sawmill Bay, Great Bear Lake; Reindeer Depot, Mackenzie Delta; and along the Alaska Highway from Dawson Creek, British Columbia, to Snag, Yukon. These collecting sites are scattered across 3000 miles of Arctic and Sub-Arctic terrain. The material collected by the Survey last summer has not yet been specifically identified. Therefore, the following notes are fragmentary and represent only an outline of the general lepidopterous abundance. A detailed report of the species taken at each locality will be subsequently prepared.

#### GOOSE BAY, LABRADOR

The season at Goose Bay was extremely wet and cold and collecting was consequently poor. The relatively small collection obtained from this base shows that the fauna is definitely connected with the Canadian coniferous zone and contains a few southern elements. The early blue butterfly Lycaenopsis pseudargiolus was on the wing in hundreds early in June. A great number of species had emerged

\*Editor's note: This organization is a joint project sponsored by the Canadian Defence Research Board, Department of National Defence, and by the Division of Entomology, Department of Agriculture. It is under the administration of the Unit of Systematic Entomology and coordinated and supervised by Dr. Thomas N. Freeman.

Dr. Freeman states that the objectives of the Survey are:-

1. To study the biology and systematics of the biting fly groups.
2. To make general insect collections in order to increase our knowledge of the biology and distribution of the Canadian Arctic insects.

The survey teams are stationed at various Arctic and Sub-Arctic localities from Labrador to the Yukon. This survey has produced what is probably the largest collection of Arctic American insects ever to be assembled. Data are being accumulated to show the distribution of species as well as their geographic variation. The habitats of several butterflies have been ascertained and the knowledge of this relatively little known fauna is being greatly increased.

by the middle of that month but the country is so laborious to traverse on foot that collecting was extremely difficult. One would expect, however, that the usual lepidopterous genera indigenous to the northern coniferous forest were present.

#### KNOB LAKE, QUEBEC

The following summary was prepared from notes submitted by Dr. E.G. Munroe who was stationed at Knob Lake. This area is essentially Labradorian. The 1948 season presented fair to good collecting conditions. As is typical of northern latitudes, the butterflies require careful and prolonged stalking. They are rarely attracted to flowers and collecting in series is therefore difficult. Wet ground and mud puddles were quite productive, and many moths were attracted to light after the middle of July, when the nights became reasonably warm. Ten species of Rhopalocera were obtained, in the genera Pyrgus, Hesperia, Colias, Plebeius, Oeneis, and Boloria. Representatives of the following groups of moths were collected: Gelechiidae; Coleophoridae; Tortricidae; Pyralidae; Geometridae; and Phalaenidae. The last family was the best represented, with Pachnobia, Euxoa, and related genera predominating.

Dr. Munroe also visited Seven Islands, Quebec, and reports that this fauna is essentially Canadian.

#### FORT CHIMO, QUEBEC

Fort Chimo is situated on the fringe of the northern coniferous tree limit and is essentially transitional in nature. Components of both the true Arctic fauna and that of the Hudsonian intermingle in this region. The weather was good for general collecting but the lepidopterous fauna of the area was rather scanty during the 1948 season. Butterflies were not common and a great deal of time was necessary in order to obtain even a small series of any one species. Representatives of the usual northern genera (Boloria, Erebia, Colias, and Oeneis) were obtained. The moths were represented by a few phalaenids, geometrids, pyralids, tortricids, and arctiids. The phalaenids were the most abundant but the habit of flushing with startling rapidity made it almost impossible to capture a very large number.

#### FROBISHER BAY, BAFFIN ISLAND

The unusually warm weather which prevailed over most of the true Arctic region during last summer facilitated insect collecting over that large area. I believe this was of great advantage to the terrestrial insect fauna and it should certainly increase the numbers which will be present next year. The butterfly fauna of Frobisher Bay was extremely abundant in individuals of the usual Arctic species. It was quite common to observe 40 or 50 butterflies at any time, and this condition was reminiscent of the 1947 season at Churchill, Manitoba, when Dr. Carl Gottschalk and I saw hundreds of butterflies in the Carex meadows of that region. At Frobisher Bay the genera Boloria, Erebia, Oeneis, Colias, and Plebeius

were common. Moths were fairly abundant in the area and were represented by the families Phalaenidae, Geometridae, Liparidae, Pterophoridae, Tortricidae, Epiplemididae and Pyralidae. The phalaenids were the best represented and the most difficult to capture because of the habit previously mentioned. Byrdia rossi was the only liparid which was obtained.

#### CORAL HARBOUR, SOUTHAMPTON ISLAND

This locality is apparently quite rich in Lepidoptera as judged from past expeditions undertaken in this area. The collection from Coral Harbour was largely comprised of Colias nastes and hecla. Phalaenids form the bulk of the moths which were obtained. This locality is well within the barrens and the fauna is similar to that of the Baker Lake district.

#### SAWMILL BAY, GREAT BEAR LAKE

This area is within the Hudsonian zone on the east shore of Great Bear Lake and is a region where the Canadian granitic shield dips under the Paleozoic sediments to the west. The insect fauna appears to change and such genera as Euchloe appear along with other more widely distributed Hudsonian genera. D.F. Hardwick collected at this locality from June 11th to 24th. He reports that butterflies were on the wing as soon as he arrived and were fairly common. Moths were also well represented, but the locality was so far north that the continuous daylight prevented collecting by means of artificial light.

#### REINDEER DEPOT, MACKENZIE DELTA

This locality lies just on the edge of the monotonous Mackenzie River Delta and the barren Caribou Hills. It is a transition area, comprising the Hudsonian and the Arctic zones. It marks the northernmost extension of coniferous trees and possesses some species which are indigenous only to the northwestern Arctic coastal region. A few specimens of Papilio machaon aliaska were taken on the barrens of the Caribou Hills. They presumably came from the tree-covered delta area.

#### ALASKA HIGHWAY

The party which operated along this route covered at least 1000 miles, and naturally encountered environmental conditions which varied all the way from dense forest to alpine tundra and permafrost terrain. Butterflies were often numerous and were taken in series, and Boloria, Colias, and Plebeius were common. Moths were scarce during the early part of the summer and could not be attracted to light or bait, probably because of the lack of darkness. However, after the first of August, when there were periods of darkness, several hundred specimens could be captured on any warm night.

Contributors: D.F. Hardwick, E.G. Munroe.

