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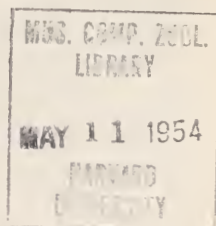
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THE BUTTERFLIES AND SKIPPERS OF LOUISIANA

EDWARD NELSON LAMBREMONT,
NEW ORLEANS.



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George Henry Penn, *Editor*,
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THE BUTTERFLIES AND SKIPPERS OF LOUISIANA¹

EDWARD NELSON LAMBREMONT,

New Orleans

Prior to the summer of 1948 when a project to survey the butterflies and skippers of Louisiana was started there existed only scattered records and four parish lists. The oldest of these was published as a catalog of the Lepidoptera of New Orleans and its vicinity by Ludwig von Reizenstein in 1863. As originally published the records of von Reizenstein could not have been included in this paper because the basis of von Reizenstein's determination of species was unknown. Twenty-six of the species, however, were checked against Morris (1862) and are included with the other records. Six species, as yet unidentifiable, are listed for general interest in Table 1.

Kopman (1903) published a popular account of the butterflies of Louisiana in the *New Orleans Times Democrat*. Of the 24 species recorded only three have definite localities noted and are included herein. Hine (1904, 1906) listed the Lepidoptera of Cameron parish in the southwestern corner of the state, including valid records for 15 species, and Montgomery (1932) listed 15 species from Madison and Tensas parishes in the northeastern corner. Glick (1939) listed eight species from Madison parish. All other publications deal with only a few species.

From these publications a small, highly localized list may be compiled consisting of 43 species, including four type localities, in the state.

The best and most recent local study was published since the initiation of this survey. It consists of collections and notes made by Jung (1950) within Orleans, Jefferson, Plaquemines, and St. Bernard parishes. Thirty-seven species of butterflies and skippers are recorded, 17 of which had not been reported from the state previously.

Taking Jung's paper (1950) into consideration the state list numbered 60 species and subspecies. The present survey, concluded in March 1951, adds 38 previously unrecorded species and subspecies, bringing the total to 98 (Table 2). This is by no means to be considered all the species that should be found, for many that are known to occur in nearby areas have not been taken within Louisiana's borders. The rich fauna of Texas and Mexico undoubtedly overlaps part of Louisiana, particularly the southwest, and many of the Texas-Mexican forms have been taken short distances from the Louisiana-Texas line. In all probability the number of species would have reached about 140 if the survey had been continued. Completion of the survey would require considerable collecting in the state during certain seasons of the year, particularly in the spring. On the basis

¹ From a thesis submitted in partial fulfillment of the requirements for the degree of Master of Science of the Graduate School of Tulane University.

TABLE 1.

SPECIES RECORDED BY VON REIZENSTEIN (1863) WHICH WERE UNIDENTIFIABLE. NOTES ARE PRESENTED EXACTLY AS THEY APPEAR IN THE ORIGINAL; COMMENTS BY THE WRITER ARE IN PARENTHESES.

Goniopteryx Eclipsis.

Xanthidia Sylvatica, MSS Rare.

Heliconia diaphona Drur. Rare Western Lake Shore.
(Probably *H. charitonius*)

Euptoieta hegesia? Cram. City Park. On Passiflorae.
(Probably *E. claudia*)

Apatura myops, MSS. On elm trees.

Thecla io, MSS. City Park, rare. On camomilla.

of their overall distributional patterns approximately 40 additional species may be anticipated to occur in Louisiana. These are listed in Table 3, but otherwise are not mentioned in this paper.

AREA STUDIED

Including islands in the Gulf of Mexico the total area of Louisiana is 48,506 square miles, of which 3,097 square miles are water surface (1,060 square miles of landlocked lakes). The entire state is within Merriam's Austroriparian life zone; the northern portion within the Carolinian area, and the southern portion in a semi-tropical region called the Gulf Strip.

Viosca (1933) divided Louisiana into four main physiographic areas which are illustrated in figure 1. Each of these supports a characteristic flora. As will be noted later the distribution of certain butterflies and skippers is correlated with these areas to some extent. In addition to the natural vegetation there are many man-made communities which tend to obscure the relation between natural vegetation and physiographic areas. Such man-made disturbance communities are: pine-hardwood, scrub-oak grassland, successional changes on abandoned farmlands, and undeveloped agricultural land-reclamation projects. These man-made disturbance areas support many small flowering plants, both natural and horticultural, which are attractive to butterflies and skippers.

With the exception of the coastal ridge and delta division all major physiographic regions of Louisiana were sampled intensively during the two-and-one-half year term of this survey. Those places within short distances from New Orleans were concentrated upon, but three major trips totalling more than 50 days in the field were taken to collect in the northern uplands. The accompanying map (fig. 2) shows the distribution of collections. To facilitate travel and increase the range only a few areas were sampled over any length of time. These include the Sabine parish area; Caddo and neighboring

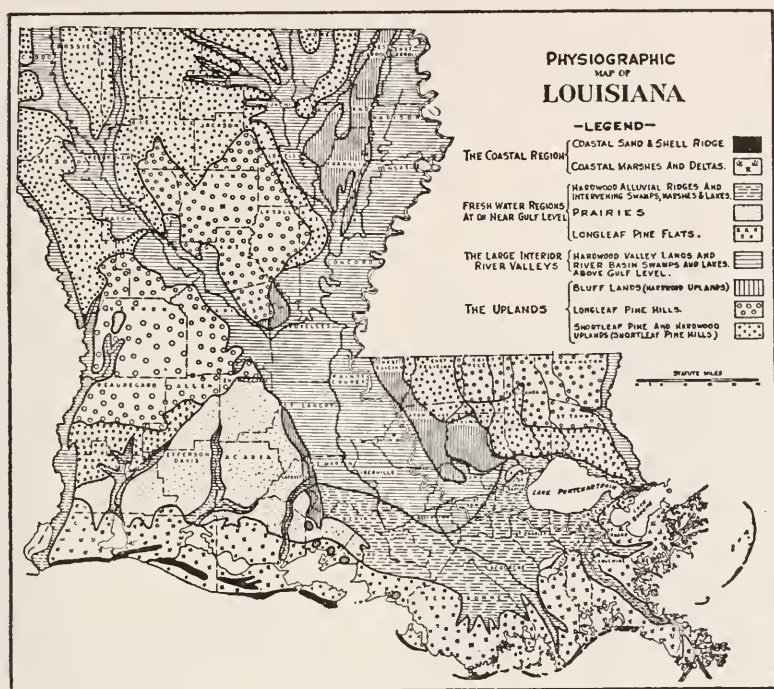


Figure 1. Physiographic map of Louisiana from Viosca (1933). Reprinted by permission of the copyright owner.

parishes; Lincoln-Jackson-Union parish area; Ouachita-Morehouse and parishes east; Concordia parish and surrounding area; Allen parish and all parishes east to the Mississippi river, excluding West Baton Rouge; the Florida parishes; and New Orleans and vicinity.

Most of the collections were made during the summer months. The only heavily collected sections during other times of the year were the Jackson-Lincoln-Union area in the spring, Allen parish and all parishes east to the Mississippi river in the fall, and the Florida parishes and New Orleans and vicinity throughout the year.

The majority of the butterflies and skippers were taken by the author from June 1948 to April 1951; records previous to this time were contributed by other members of the Tulane University zoology staff.

SYSTEMATIC TREATMENT

Each species is considered individually. Each such treatment includes a summary of observations and Louisiana distribution records. The arrangement of species follows Klots (1951).

Where specific data are required the records are listed alphabetically by parish, each including the following: locality (within five miles

TABLE 2
LIST OF LOUISIANA SPECIES CONTRASTING PREVIOUSLY REPORTED
MATERIAL WITH THE NEW RECORDS ADDED HEREIN.

From Literature	New Records
Lethe portlandia (Fabricius)	
Euptychia hermes sosybius (Fabricius)	
	SATYRIDAE
	Euptychia gemma gemma (Hübner)
	Euptychia areolata areolata (J. E. Smith)
	Euptychia cymela cymela (Cramer)
	Cercyonis pegala pegala (Fabricius)
	Cercyonis pegala alope (Fabricius)
	DANAIDAE
Danaus plexippus plexippus (Linné)	
Danaus plexippus melanippe (Linné)	
Danaus gilippus berenice (Cramer)	
	NYMPHALIDAE
Heliconius charitonius tuckeri Comstock & Brown	
Agraulis vanillae nigrior Michener	Dryas julia delila (Fabricius)
Euptoieta claudia claudia (Cramer)	Speyeria cybele (Fabricius)
Phyciodes gorgone (Hübner)	Melitaea nycteis nycteis Doubleday
Phyciodes tharos tharos (Drury)	Nymphalis antiopa antiopa (Linné)
Polygonia interrogationis (Fabricius)	
Vanessa atalanta atalanta (Linné)	
Vanessa cardui cardui (Linné)	
Vanessa virginensis (Drury)	
Precis evarete coenia (Hübner)	
Limenitis archippus watsoni (dos Passos)	
Limenitis arthemis astyanax (Fabricius)	
Anaea andria (Scudder)	
Asterocampa clyton clyton (Boisduval & LeConte)	
Asterocampa celtis celtis (Boisduval & LeConte)	
Asterocampa celtis alicia (Edwards)	
	LIBYTHEIDAE
Libytheana bachmannii bachmannii (Kirtland)	
	RIODINIDAE
Calephelis virginensis (Guerin)	
	LYCAENIDAE
Atides halesus halesus (Cramer)	Strymon ontario autolycus (Edwards)
Strymon cecrops (Fabricius)	Strymon liparops liparops (Boisduval & LeConte)
Strymon melinus melinus (Hübner)	Hemiargus isolus (Reakirt)
Incisalia irus (?) (Godart)	Celastrina argiolus pseudargiolus (Boisduval & LeConte)
Feniseca tarquinus tarquinus (Fabricius)	
Everes comyntas comyntas (Godart)	

PAPILIONIDAE

Papilio polyxenes asterias Stoll
Papilio crespontes crespontes Cramer
Papilio glaucus glaucus (Linné)
Papilio troilus troilus Linné
Papilio palamedes palamedes Drury
Graphium marcellus marcellus (Cramer)
Battus polydamus lucayus (Rothschild & Jordan)
Battus philenor philenor (Linné)

Colias eurytheme eurytheme Boisduval
Zerene cesonia (Stoll)
Phoebis sennae sennae (Linné)
Phoebis sennae eubule (Linné)
Euremia nicippe nicippe (Cramer)
Euremia lisa (Boisduval & LeConte)
Nathalis iole Boisduval
Pieris rapae (Linné)
Pieris protodice protodice Boisduval & LeConte
Ascia monuste phileta (Fabricius)

Epargyreus clarus (Cramer)
Urbanus proteus (Linné)
Pyrgus communis communis (Grote)
Celotes nessus (Edwards)
Erynnis horatius (Scudder & Burgess)
Ancyloxypha numitor (Fabricius)
Hesperia leonardus stallingsi H. A. Freeman
Hylephila phyleus (Drury)
Poanes viator (Edwards)
Oligoria maculata (Edwards)
Lerema accius (J. E. Smith)
Lerodea eufala (Edwards)
Calpodetes ethlius (Stoll)
Panoquina panoquin (Scudder)

Papilio troilus ilioneus J. E. Smith

PIERIDAE

Anthrocharis genutia genutia (Fabricius)
Colias philodice philodice (Latrielle)
Phoebis philea (Linné)
Phoebis agarithe maxima (Neumoegen)
Eurema daira daira (Latrielle)

HESPERIIDAE

Achalarus lyciades (Geyer)
Thorybes bathyllus (J. E. Smith)
Thorybes confusus Bell
Pholisora hayhurstii (Edwards)
Erynnis juvenalis (Fabricius)
Copaoides minima (Edwards)
Atalopodes campestris (Boisduval)
Polites manataqua manataqua (Scudder)
Polites themistocles (Latreille)
Polites vibex brettus (Boisduval & LeConte)
Wallengrenia otho otho (J. E. Smith)
Atrytone argos argos (Boisduval & LeConte)
Atrytone dukesi Lindsey
Atrytone ruricola metacomet (Harris)
Amblyscirtes vialis (Edwards)
Amblyscirtes textor (Hübner)
Lerodea l'herminieri (Latreille)
Panoquina ocola (Edwards)

TABLE 3
SPECIES EXPECTED TO OCCUR IN LOUISIANA BUT NOT YET RECORDED

Lethe creola (Skinner)	SATYRIDAE	Lethe eurydice (Johannson)
Melitaea ismeria (Boisduval & LeConte)	NYMPHALIDAE	Asterocampa clyton flora (Edwards)
Phyciodes texana seminole (Edwards)	LYCAENIDAE	Mitoura gryneus (Hübner)
Strymon m-album (Boisduval & LeConte)		Incisalia nippon nippon (Hübner)
Strymon titus mopsus (Hübner)		Hemiargus ceranus antibastus (Hübner)
Strymon favonius (J. E. Smith)		Brephidium pseudofea (Morrison)
Strymon ontario (Edwards)	PIERIDAE	
Strymon falacer (Godart)		
Eurema mexicana (Boisduval)	HESPERIIDAE	Polites peckius (Kirby)
Thorybes pylades Scudder		Poanes yehl (Skinner)
Pholisora catullus (Fabricius)		Problema byssus (Edwards)
Erynnis icelus (Scudder & Burgess)		Atrytone logan logan (Edwards)
Erynnis brizo brizo (Boisduval & LeConte)		Atrytone alabamae Lindsey
Erynnis martialis (Scudder)		Atrytone dion (Edwards)
Erynnis baptisiae Forbes		Atrytonopsis hianna (Scudder)
Erynnis zarucco (Lucas)		Amblyscirtes alternata (Grote & Robinson)
Hesperia sassacus (Harris)		Amblyscirtes belli H. A. Freeman
Hesperia meta (Scudder)		Lerodea neamathla Skinner & Williams
Hesperia attalus (Edwards)		Megathymus yuccae Boisduval & LeConte
Hesperia meskei (Edwards)		Megathymus cofaqui Strecker
Polites verna (Edwards)		

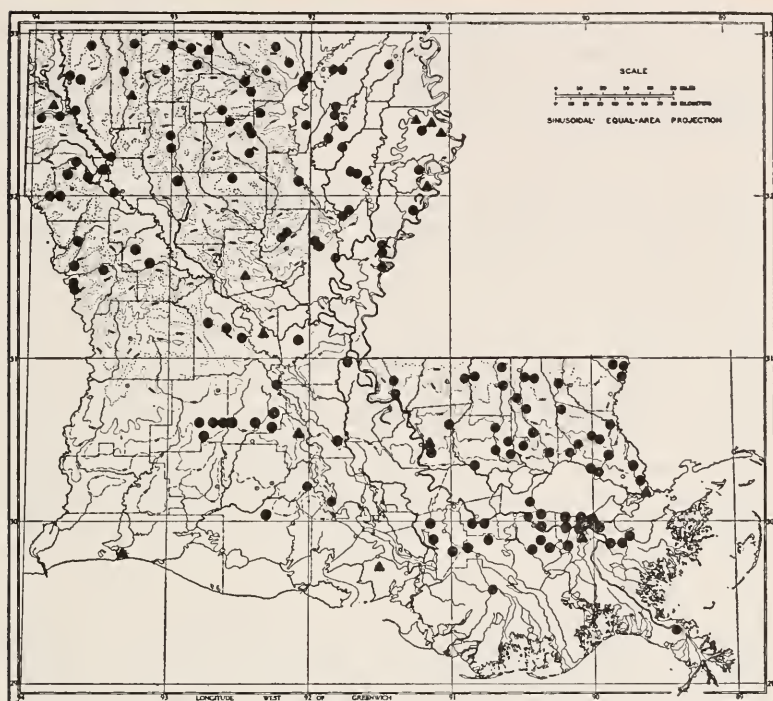


Figure 2. Map showing distribution of localities from which material was examined, or previously recorded; triangles = localities from the literature; dots = localities from the present survey.

of nearest Post Office), date of collection, number and sex of specimens, and institutional location of specimens in parentheses. Unless otherwise specified all specimens are in the Tulane collection. Abbreviations of the institutions are: LPI = Louisiana Polytechnic Institute, Ruston; LSM = Louisiana State Museum, New Orleans; SLI = Southwestern Louisiana Institute, Lafayette; TU = Tulane University ("P" series are collections prior to 1947 with sparse data; lot numbers P-955 through P-1101 consist of the James M. McArthur Collection).

Superfamily PAPILIONOIDEA, The Butterflies
Family SATYRIDAE

LETHE PORTLANDIA PORTLANDIA (FABRICIUS), the Pearly Eye.—The writer has not taken this species; however, Skinner (1897) described a specimen captured in Louisiana as *L. creola*. Dr. Austin H. Clark informed the writer (in correspondence) that this supposed *creola* is actually *portlandia*. Skinner's record is: *St. Landry*: Opelousas, VII-3-1897.

EUPTYCHIA CYMELA CYMELA (CRAMER).—The Little Wood-satyr

is rather common in Louisiana during the spring and early summer; earliest and latest dates recorded are April 1, 1950 (8 ♂♂) and June 24, 1950 (1 ♀). It is most often seen in woody places, particularly in pinelands, and most of the specimens have been taken in the upland pine areas of the state.

E. cymela cymela has not been recorded from Louisiana previously. Twenty-four specimens (12 ♂♂, 12 ♀♀) have been examined from 14 localities in the following parishes: Catahoula, Jackson, Lafayette (SLI), LaSalle, Lincoln, Morehouse, Ouachita, St. Tammany, Union and Washington.

EUPTYCHIA HERMES SOSYBIUS (FABRICIUS).—The Carolinian Satyr is undoubtedly the most abundant satyrid; it is probably rivaled by only two other species, *Eurema lisa* and *Phyciodes tharos*, in being the most common butterfly in Louisiana. This satyrid is particularly abundant in woody areas, especially in pinelands and oak forests, where it remains in quiet shaded spots rather than in the sunny habitats of most other butterflies. This subspecies flies the year round; specimens have been collected in all months except January and August. Earliest and latest dates are February 10, 1943 (1 ♂) and December 25, 1949 (1 ♀).

One hundred and nine specimens (64 ♂♂, 45 ♀♀) have been examined from 51 localities in the following parishes: Allen, Assumption, Catahoula, Claiborne, Evangeline, East Feliciana, Jackson, Jefferson, Lafayette (SLI), Lincoln, Livingston, Morehouse, Orleans, Ouachita, Pointe Coupee, Richland, Sabine, St. Helena, St. Landry, St. Tammany, Tangipahoa, Union, Washington, West Carroll and West Feliciana. Previously it had been recorded from Cameron (Hine, 1906) and Orleans parishes (von Reizenstein, 1863).

EUPTYCHIA AREOLATA AREOLATA (J. E. SMITH), the Georgia Satyr.—All specimens were collected in the longleaf pine flats north of Lake Pontchartrain. Supposedly the species ranges as far west as Texas, but the results of this survey indicate it must be rare west of the Mississippi river, although it localizes and can be overlooked. It resembles *E. hermes* in habits and flight by keeping close to the ground.

E. areolata areolata has not been recorded from Louisiana previously. The 31 specimens (15 ♂♂, 16 ♀♀), examined were collected from the following localities: *Livingston*: Springville, IX-6-50 (TU 2184); *St. Tammany*: St. Tammany, V-12-49 (TU 1219); Hickory, V-12-50, VI-2-50, VI-29-50, IX-30-50 (TU 1948, 1973, 2000, 2198); Covington, IX-5-50, IX-8-50 (TU 2180, 2197); Folsom, IX-7-50 (TU 2187); Talisheek, IX-13-50 (TU 2200); *Tangipahoa*: Ponchartroula, IX-6-50 (TU 2182); Robert, IX-6-50 (TU 2185); *Washington*: Angie, VI-5-50 (TU 2034).

EUPTYCHIA GEMMA GEMMA (HUBNER), the Jeweled Brown.—This beautiful woodland butterfly resembles *E. hermes* closely in habits, but it is considerably less common for only three specimens (all females) have been taken in Louisiana. From the writer's expe-

rience the species occurs in pinelands, and several which eluded capture were seen in the longleaf pine flats of St. Tammany parish.

This species has not been recorded from Louisiana previously. The three records are: *Richland*: Girard, VI-27-50 (TU 2081); *St. Tammany*: Mandeville, X-26-49 (TU 1599); *Tangipahoa*: Tangipahoa, IX-7-50 (TU 2192).

CERCYONIS PEGALA PEGALA (FABRICIUS).—The Southern Wood-nymph probably has a better protective coloration than any other butterfly except its allied subspecies, *C. pegala alope*. The insect usually may be found sitting on the sides of pine trees, and unless disturbed it is often mistaken for a loose piece of bark. The undersides of the wings are colored in such a way that they blend with the surroundings so well that one must "beat" the trees with a stick to flush them from hiding. When disturbed the butterfly quickly flies a short distance to another tree, and the same procedure must be repeated. To add to this collecting difficulty they are exceptionally hard to capture in flight. Only a few have been collected in Louisiana, perhaps because of their deceptiveness.

C. pegala pegala has not been recorded from Louisiana previously. The three records are: *St. Tammany*: Covington, IX-8-50, 1 ♂ (TU 2197); Hickory, IX-13-50, 1 ♀ (TU 2198); *Tangipahoa*: Amite, IX-7-50, 1 ♀ (TU 2195).

CERCYONIS PEGALA ALOPE (FABRICIUS), the Common Wood-nymph.—In the past, authors have treated this subspecies as a separate species along with other forms of *C. pegala*. More recently some have chosen to combine all as one large clinal species. Until the *pegala-alope* complex is understood fully the writer prefers to consider them as separate subspecies. The observations given for typical *pegala* are much the same as those for *alope*.

C. pegala alope has not been recorded from Louisiana previously. The only record is: *LaSalle*: Summerville, VI-12-50, 1 ♂ (TU 2048).

Family DANAIDAE

DANAUS PLEXIPPUS PLEXIPPUS (LINNÉ).—The Monarch is one of the most interesting butterflies of our fauna, and has attracted considerable attention because of its migrations. For many years they have been known to swarm (Saunders, 1871) and migrate.

The Louisiana collections show two annual peaks of abundance of this subspecies: one in April, and the other during October and November. Judd (1950) reported a congregation of Monarchs on the north shore of Lake Erie which occurred during the last four days of August 1949, and Saverne (1908) reported swarms in Michigan which lasted from September 4 through 15. Williams (1930) quoted Shannon in saying that one of the four main routes of migrating butterflies in North America is from Canada along Lake Ontario and Lake Erie southward. Travelling at a speed of five to seven miles per hour (Park, 1948), a swarm of monarchs leaving

Canada in late August should reach the Gulf states in about a month providing there are no high winds against them. This correlates somewhat with our recorded peak of October-November, and also with a large flight which the writer observed headed southward October 10, 1949 near New Orleans, and one noted in November 1941 by Percy Viosca (newspaper article).

Originally this insect was more or less confined to North America, but with time it has spread throughout the islands of the Atlantic, and to most of the Pacific islands, including New Zealand and Australia (Williams, 1930, 1937).

Forty-five specimens have been examined (27 ♂♂, 18 ♀♀) and hundreds more have been observed in migratory flight. Collections have been made throughout the year, except January and February; earliest and latest dates are March 18, 1950 (1 ♂) and December 15, 1949 (1 ♂). The monarch has been recorded from 24 localities in the following parishes: Avoyelles (SLI), Franklin, Jefferson, Lafayette (SLI), Lincoln, Livingston, Morehouse, Orleans, Ouachita, Richland, St. Bernard, St. Charles, St. Helena, St. James, St. John the Baptist, St. Landry, St. Tammany, Tangipahoa and West Feliciana. Previously the monarch had been recorded from Cameron (Hine, 1906) and Orleans parishes (von Reizenstein, 1863; Shufeldt, 1884; Jung, 1939, 1950).

DANAUS PLEXIPPUS MELANIPPE (HUBNER), the South American Monarch.—This subspecies has caused much controversy in recent years for the figure in Holland (1898; 1931 revised) given to represent *D. plexippus plexippus* is actually the subspecies *melanippe*. Although *melanippe* is not typical for most of North America it has been captured as an occasional visitor as far north as Illinois and New York (Clark, 1941).

The Louisiana record is: *Orleans*: New Orleans, VIII-8-25, 1 ♂ (TU P-967). Previously it had been recorded from St. Tammany parish by Clark (1941).

DANAUS GILIPPUS BERENICE (CRAMER).—The Queen is a rare danaid in Louisiana. The few records show that this species flies mostly during the warmer months. One female, however, was taken in March, 1950, probably because the winter of that year was very mild. Unlike the monarch this species is not migratory.

The six specimens examined were from the following localities: *Jefferson*: Metairie, VIII-7-47 (TU 92); *Bridgedale*, VIII-25-50 (TU 2123); *Orleans*: New Orleans, XI-26-27, VII-1-32, III-25-50 (TU P-970, P-982, 1825); *St. Tammany*: Mandeville, X-11-49 (TU 1566). Previously it had been recorded from Cameron (Hine 1906) and Orleans parishes (Jung, 1939, 1950).

Family NYMPHALIDAE

HELICONIUS CHARITONIUS TUCKERI COMSTOCK AND BROWN.—The Zebra is not common in Louisiana, but it is seen occasionally during the summer and early autumn in the southernmost parishes.

The few records from the state were obtained in August and October. Although the writer has never seen this butterfly in the field, a few of them were reported to him from the Mississippi delta region, the southern extremity of Louisiana. Comstock and Brown (1950) recorded it from Texas. The larvae feed on passion flowers.

The few records are as follows: *Jefferson*: Mississippi river bank opposite New Orleans, X-18-1894 (Kopman, 1903); *Orleans*: New Orleans (von Reizenstein, 1863); *Terrebonne*: Houma, VIII-9-19 (LSM).

AGRAULIS VANILLAE NIGRIOR MICHENER, the Gulf Fritillary.—This is the commonest fritillary in Louisiana. During the hot summer months swarms of them may be seen hanging on blades of grass in open fields. It flies from spring to early fall; earliest and latest dates are March 22, 1950 and November 7, 1919.

The flight is exceptionally fast, and efforts at chasing this insect on the wing usually prove unsuccessful. One trick it uses in eluding capture is to fly up to about eight feet and suddenly reverse its direction. It can change its course much faster than a running man, and the writer has often found himself giving "chase" in the opposite direction from which the butterfly was traveling. However, many specimens may be taken while they are resting. According to Williams (1937) this butterfly is migratory.

The species apparently is more abundant in the southern parishes of Louisiana. Forty-seven specimens (30 ♂♂, 17 ♀♀) have been examined from 18 localities in the following parishes: Allen, Jefferson, Lafayette (SLI), Livingston, Orleans, Plaquemines, Pointe Coupee, Rapides, St. Bernard, St. Landry, St. Tammany and Terrebonne (LSM). Previously it had been recorded from Cameron (Hine, 1906), Madison (Montgomery, 1932) and Orleans parishes (von Reizenstein, 1863; Michener, 1947; Jung, 1950).

DRYAS JULIA DELILA (FABRICIUS), the Julia Butterfly.—McDunnough (1938) listed this species as of doubtful North American occurrence, but Holland (1931) stated that it is an occasional visitor in the extreme South. The genus is primarily a tropical one.

D. julia delila has not been recorded from Louisiana previously. The one record is: *Lafayette*: Lafayette, XI-5-41, 1 ♂ (SLI).

EUPTOIETA CLAUDIA CLAUDIA (CRAMER).—The Variegated Fritillary is very common in Louisiana from early spring throughout the summer; earliest and latest dates are March 31, 1950 (1 ♀) and October 16, 1949 (1 ♀). The larvae feed on passion flowers and violets. Several years ago, in early July, the writer's attention was called to a vacant lot in uptown New Orleans which was literally "seeded" with chrysalids of this butterfly. Previous to the time that this lot was infested there was a dense growth of passion flowers, but after the feeding of thousands of caterpillars nothing remained but bare twigs covered with chrysalids. Needless to say the emergence of adults was sensational, and a good series of pupae was collected and reared.

Within Louisiana, *E. claudia claudia* appears to be more abundant in the southern areas. Thirty-nine specimens (20 ♂♂, 19 ♀♀) have been examined from 15 localities in the following parishes: Assumption, Concordia, Evangeline, Jefferson, Lafayette (SLI), Lafourche, Orleans, Ouachita, St. Bernard, St. Landry (SLI) and St. Martin (SLI). Previously it had been recorded from Cameron (Hine, 1906), Madison (Montgomery, 1932) and Orleans parishes (von Reizenstein, 1863; Jung, 1950).

SPEYERIA CYBELE (FABRICIUS), the Great Spangled Fritillary.—The single Louisiana specimen was taken in the coastal area in early October, and as the species is not common to the state, perhaps it was a straggler southward during the cooler months.

S. cybele has not been recorded from the state previously. The one record is: *Lafayette*: Lafayette, X-2-31, 1 ♂ (SLI).

MELITAEA NYCTEIS NYCTEIS DOUBLEDAY, the Silvery Checkerspot.—Holland (1931) stated that *M. nycteis* ranges from Maine to western North Carolina, and westward to the Rocky Mountains. He did not say whether it comes below the latitude of North Carolina, or stays north of there. Klots (1951) also did not mention its occurrence south of the mountains of North Carolina, Missouri and Kansas. The Louisiana records may be considered southern range extensions, but since the species is not abundant in the state it appears that Louisiana is at the southern tip of its range. A single specimen was collected in the Sabine river area (near Texas), and another near the Pearl river (near Mississippi), at opposite sides of the state. Three specimens were seen at the latter location, but only one was taken. The flight is fast and erratic.

M. nycteis nycteis has not been recorded from Louisiana previously. The two records are: *Sabine*: Zwolle, VIII-2-49, 1 ♀ (TU 1381); *Washington*: Richardson, IX-7-50, 1 ♂ (TU 2188).

PHYCIODES GORGONE (HUBNER), the Gorgone Crescent-spot.—This crescent-spot, though closely allied to it, cannot begin to approach *P. tharos* in abundance. It flies from spring to early fall in sunny places, but does not seem to be restricted to any part of the state. Earliest and latest dates are March 7, 1951 (1 ♂) and October 16, 1949 (1 ♂).

Twenty-three specimens (14 ♂♂, 9 ♀♀) have been examined from 14 localities in the following parishes: Allen, Assumption, Bossier, DeSoto, Evangeline, Natchitoches, Pointe Coupee, Rapides, St. Charles, St. Tammany and Union. Previously it had been recorded from Cameron (Hine, 1906) and Orleans parishes (Jung, 1950).

PHYCIODES THAROS THAROS (DRURY).—The Pearly Crescent-spot is by far the most abundant butterfly in Louisiana. With the exception of the coldest days it flies throughout the year (it has been collected in all twelve months), not only in bright open fields, but in densely shaded forests as well, and is known to cluster around wet spots on the ground (Scudder, 1889). When at rest this butterfly

has the peculiar habit of slowly raising and lowering its wings. The larvae feed on plants of the family Compositae, particularly the asters.

One hundred and thirty-one specimens (74 ♂♂, 57 ♀♀) have been examined from 68 localities in the following parishes: Allen, Assumption, Catahoula, Claiborne, Concordia, DeSoto, East Baton Rouge, East Feliciana, Evangeline, Jackson, Jefferson, Lafayette (SLI), Lafourche, LaSalle, Lincoln, Livingston, Morehouse, Natchitoches, Orleans, Ouachita, Pointe Coupee, Rapides, Richland, Sabine, St. Charles, St. Helena, St. James, St. Landry, St. Tammany, Tangipahoa, Union, Washington, Webster and West Carroll. Previously it had been recorded from Madison (Montgomery, 1932) and Orleans parishes (Jung, 1950).

POLYGONIA INTERROGATIONIS (FABRICIUS), the Question Mark.—This species is exceptionally nervous and fast in flight, which perhaps accounts for the scarcity of records. In the writer's opinion each record obtained equals at least two or three uncaught butterflies, and from sight-records it appears that this species is rather abundant in Louisiana during the spring and summer months. Earliest and latest dates are March 10, 1949 (1 ♀) and October 15, 1926 (1 ♀).

This butterfly frequents open spots and forest edges. Scudder (1889) notes that it often sucks the sap flowing from wounded trees and decaying fruits, and the writer has taken adult specimens feeding on decaying fish and turtle meat. The larvae feed on a great variety of plants, particularly of the family Urticaceae.

Eighteen specimens (7 ♂♂, 11 ♀♀) have been examined from eight localities in the following parishes: Jefferson, Lafayette (SLI), Orleans, Ouachita, Sabine, Terrebonne (LSM), Washington and West Carroll. Previously it had been recorded from Orleans parish by Jung (1950).

NYMPHALIS ANTIOPA ANTIOPA (LINNÉ), the Mourning Cloak.—This beautiful butterfly is primarily a species of the northern states, appearing only occasionally in Louisiana during the late summer and fall months. It has not been recorded from the state previously.

The three records are: *Lincoln*: Ruston (LPI); *Orleans*: New Orleans, IX-25-31, 1 ♀ (TU P-977), and VIII-25-32, 1 ♀ (TU P-983).

VANESSA ATALANTA ATALANTA (LINNÉ), the Red Admiral.—This species is well-named *atalanta* for it is one of the speediest of the nymphalids. All of the specimens were caught while occupied with feeding. The larvae feed on nettles (*Urtica* spp.)

In Louisiana, *V. atalanta atalanta* is never too abundant, but it may be seen almost throughout the year, although more often during the warmer months. Earliest and latest dates are January 30, 1950 (3 ♂♂, 2 ♀♀) and October 28, 1928 (1 ♀). Jung (1950) stated that he found it to be abundant in drained swamp areas near New Orleans.

Twenty-one specimens (8 ♂♂, 13 ♀♀) have been examined from eight localities in the following parishes: Claiborne, Jefferson, Lafayette (SLI), Orleans, Ouachita, St. Tammany, Webster and West Feliciana. It had been reported previously from Orleans parish by Jung (1939, 1950).

VANESSA CARDUI CARDUI (LINNÉ), the Painted Lady.—In Louisiana this butterfly is not quite as abundant as the related species *atalanta* and *virginiensis*, the few records indicating that it flies from spring throughout the summer and autumn. Earliest and latest dates are May 3, 1924 (1 ♀) and October 18, 1949 (1 ♂).

Williams (1937) described the migrations of *cardui*, noting that in 1931 their abundance in the northern states brought help to the farmers because of the vast destruction of thistles, the food plant of their larvae. Yet in other years they do considerable damage to artichokes.

The specimens taken in the state were from open, sunny fields, and on the shrubs bordering forests. Only one was taken on thistle.

The localities are: *Caddo*: Shreveport, VIII-5-49, 1 ♀ (TU 1432); *Orleans*: New Orleans, V-3-24, 1 ♀ (TU P-957); *St. Bernard*: Shell Beach, X-18-49, 1 ♂ (TU 1595); *St. Landry*: Cortabieu, X-16-49, 1 ♀ (TU 1580). Previously it had been recorded from Cameron (Hine, 1906) and Orleans parishes (von Reizenstein, 1863).

VANESSA VIRGINIENSIS (DRURY).—Hunter's Butterfly is fairly common in Louisiana through most of the year; earliest and latest dates are January 21, 1950 (3 ♂♂) and October 10, 1930 (1 ♀). Most of the specimens were taken while feeding, for like its ally, *V. atalanta*, this species is a strong flier. The larvae feed on various species of the family Compositae.

Nineteen specimens (11 ♂♂, 8 ♀♀) have been examined from nine localities in the following parishes: Catahoula, East Feliciana, Jackson, Lafayette (SLI), Orleans, St. Charles, St. Tammany, Washington and West Feliciana. Previously it had been recorded from Madison (Montgomery, 1932) and Orleans parishes (von Reizenstein, 1863; Jung, 1939, 1950).

PRECIS EVARETE COENIA (HUBNER), the Buckeye.—This common butterfly of the southern states probably is familiar to everyone. In Louisiana it is very abundant throughout the spring, summer and autumn; earliest and latest dates are January 21, 1950 (1 ♂) and November 8, 1949 (1 ♂, 1 ♀). Of all that were collected in the state only a few were obtained while they were flying or feeding, for the insect seems to prefer to sit on hard, dry mud in full sunlight, slowly moving its wings. During a recent visit to Lacombe, La. the writer saw hundreds of buckeyes sitting on a large mound of dry, yellow clay.

Holland (1931) stated that the larvae in the later stages feed on plantains and Scudder (1889) reported them on *Gerardia purpurea* and on other species of the family Scrophulariaceae.

Forty-seven specimens (31 ♂♂, 16 ♀♀) have been examined from 31 localities in the following parishes: Allen, Claiborne, East Baton Rouge, Evangeline, Jefferson, Lafayette (SLI), Livingston, Natchitoches, Orleans, Ouachita, Rapides, St. Bernard, St. Charles, St. James, St. John the Baptist, St. Landry, St. Tammany, Tangipahoa, Union and Washington. Previously it had been recorded from Madison (Glick, 1939) and Orleans parishes (von Reizenstein, 1863; Jung, 1950).

LIMENITIS ARTHEMIS ASTYANAX (FABRICIUS), the Red-spotted Purple.—This butterfly is very fast in flight, and if disturbed will soar into the air. Most of the specimens were obtained in damp, swampy places where they often sit on soft mud, or upon the leaves of shrubs and small trees. The larvae feed on cherry, apple, hackberry, willow and related shrubs and trees (Holland, 1931).

The species flies throughout the summer and early fall; earliest and latest dates are May 31, 1949 (1 ♀) and October 15, 1949 (1 ♀).

Thirteen specimens (6 ♂♂, 7 ♀♀) have been examined from nine localities in the following parishes: Catahoula, Claiborne, East Feliciana, Livingston, Orleans, Tangipahoa, Terrebonne (LSM) and West Feliciana. Previously it had been recorded from St. Tammany parish by Jung (1950).

LIMENITIS ARCHIPPUS WATSONI (DOS PASSOS), the Viceroy.—This butterfly exhibits one of the best known examples of protective mimicry. It looks almost exactly like the monarch, *Danaus plexippus*, a species protected from insectivores by the unpleasant taste it possesses from feeding on milkweeds. An interesting fact concerning the viceroy is that throughout its range are found subspecies each of which mimics the prevalent danaid of the area (Chermock, 1947).

L. archippus ranges throughout North America into the Gulf States where the subspecies *floridensis*, in the east, and *watsoni*, in the west, occur. The latter was described by Dos Passos (1938) from specimens caught at Alexandria, La. In the state this subspecies is very common during the spring, summer and autumn months; earliest and latest dates are April 24, 1948 (1 ♂) and November 12, 1949 (1 ♀).

The flight, usually within five feet of the ground, is fast, but leisurely, and the butterfly is not too difficult to capture as it flies, or when it feeds on flowers. The larvae feed on various species of willows, although occasionally they feed on plum and cherry (Scudder, 1889).

Thirty-three specimens (24 ♂♂, 9 ♀♀), have been examined from 22 localities in the following parishes: Allen, Assumption, Claiborne, Evangeline, East Baton Rouge, Jefferson, Lafayette (SLI), Lafourche, Livingston, Orleans, Pointe Coupee, St. Bernard, St. Charles, St. Helena, St. James, St. Landry and Tangipahoa. Previously it had been recorded from Orleans (Jung, 1950), Rapides (Dos Passos, 1938) and Tensas parishes (Montgomery, 1932).

ANAEA ANDRIA (SCUDDER).—The Goatweed Butterfly is very common in Louisiana during the spring and early summer, but because of its rapid flight and protective coloration it is difficult to capture. Earliest and latest dates are February 2, 1929 (1 ♀) and October 20, 1939 (1 ♂). When resting this butterfly usually sits on the ground among dead leaves showing the under surfaces of the wings which blend well with the surroundings. Several individuals have been taken on the trunks of sycamore trees; others undoubtedly blended with the loose bark and were not seen. The caterpillars feed on the goatweed (*Croton capitatum*).

A. andria appears to be slightly more abundant in northern Louisiana. Most of the specimens were taken in the hardwood areas. Eighteen specimens (9 ♂♂, 9 ♀♀) were examined from 13 localities in the following parishes: Catahoula, Claiborne, Concordia, Evangeline (SLI), Lafayette (SLI), Morehouse, Orleans, Pointe Coupee, Winn and Union. Previously it had been recorded from Cameron (Hine, 1906), Madison (Montgomery, 1932), Orleans (Jung, 1950) and Rapides parishes (Johnson and Comstock, 1941).

ASTEROCAMPA CLYTON CLYTON (BOISDUVAL AND LECONTE).—The Tawny Emperor is not very common in Louisiana. The writer has seen two females, and von Reizenstein (1863) and Jung (1950) reported it from New Orleans. The butterfly is very fast in flight and is difficult to catch. The larvae feed on leaves of the hackberry (*Celtis mississippiensis*).

The Louisiana records are: *Lafayette*: Lafayette, VII-20-41, 1 ♀ (SLI); *Ouachita*: Sterlington, VI-23-50, 1 ♀ (TU 2072).

ASTEROCAMPA CELTIS CELTIS (BOISDUVAL AND LECONTE).—In Louisiana the Hackberry Butterfly is very common during the hot summer months, but due to the difficulty of capturing it only a few have been taken. Earliest and latest dates are June 8, 1947 (1 ♂) and August 3, 1931 (1 ♂). The flight is exceptionally rapid, high around the tops of bushes and trees. The larval food is hackberry.

Twenty-one specimens (9 ♂♂, 12 ♀♀) have been examined from seven localities in the following parishes: Concordia, Lafayette (SLI), Ouachita, Richland, and Sabine. Previously it had been recorded from Orleans parish by von Reizenstein (1863) and Jung (1950).

ASTEROCAMPA CELTIS ALICIA (EDWARDS).—Apparently in Louisiana this subspecies of the hackberry butterfly is quite restricted in its range, whereas *A. celtis celtis* is the dominant subspecies throughout the state.

The writer saw many of these butterflies darting among the branches of hackberry trees along the Mississippi river batture near New Orleans. On that occasion two males were captured, but not without considerable effort. The three specimens examined were all taken in Orleans parish as follows: VII-10-32, 1 ♀ (TU P-982) and IX-1-48, 2 ♂♂ (TU 1258).

Family LIBYTHEIDAE

LIBYTHEANA BACHMANNII BACHMANNII (KIRTLAND), the Snout Butterfly.—This species is very abundant in Louisiana during the hot summer months, but appears to fly at least occasionally even during the winter as the writer has observed a few individuals in December and January. Other than these "off season" observations the earliest and latest dates are May 19, 1950 (1 ♂) and August 27, 1949 (1 ♂). They may be found in swarms along roadside pools of water and damp places on the ground. Williams (1937) described a southeasterly migration of these "snouts" in September, which extended over a front of 250 miles. He estimated that one and a quarter million butterflies passed every minute on the whole front. The larvae feed on hackberry trees.

Twenty-four specimens (17 ♂♂, 7 ♀♀) have been examined from 14 localities in the following parishes: Catahoula, Concordia, East Feliciana, Lafayette (SLI), Morehouse, Orleans, Sabine, St. Bernard, Vermilion (SLI), Washington and West Feliciana. Previously it had been recorded from Cameron (Hine, 1906), Madison (Montgomery, 1932) and Orleans parishes (Jung, 1939, 1950).

Family RIODINIDAE

CALEPHELIS VIRGINIENSIS (GUERIN), the Little Metal-mark.—The writer has captured a single male of this tiny butterfly from the Florida parish area, in the easternmost section of the state. Little is known of the immature stages of this species.

The lone record is: *St. Tammany*: St. Tammany, III-29-51, 1 ♂ (TU 2349). Previously it had been recorded from Opelousas in St. Landry parish by Holland (1931) under the synonym *C. louisiana*.

Family LYCAENIDAE

ATLIDES HALEUS HALEUS (CRAMER), the Great Purple Hair-streak.—The writer has not taken this beautiful insect, but Jung (1950) reported it from New Orleans. The one specimen examined was also collected in New Orleans, November 11, 1933, 1 ♂ (TU P-991).

STRYMON CECROPS (FABRICIUS).—The Cecrops Hair-streak is common in Louisiana during the spring and summer months, and is easily taken while it feeds on flowers. Earliest and latest dates are January 30, 1950 (1 ♂) and October 16, 1949 (1 ♂). A habit peculiar to the lycaenids consisting of "cleaning" or rubbing together the upper surfaces of the wings while at rest, is practiced strongly by this species.

Twelve specimens (10 ♂♂, 2 ♀♀) have been examined from twelve localities in the following parishes: Allen, East Feliciana, Franklin, Lafayette (SLI), Madison, Orleans, Ouachita, Pointe Coupee, Sabine, St. Tammany and Tangipahoa. Previously it had been recorded from Caddo (Field, 1941) and Madison parishes (Montgomery, 1932).

STRYMON MELINUS MELINUS (HUBNER), the Common Hair-streak.—This species is very common in Louisiana. The butterfly is very

swift in flight but is taken easily while feeding on wild flowers. It flies throughout the spring, summer and early fall; earliest and latest dates are March 10, 1943 (1 ♂) and October 14, 1949 (1 ♀). Howard (1895) described the damage to bean plants caused by the larvae.

Twenty-three specimens (15 ♂♂, 8 ♀♀) have been examined from 16 localities in the following parishes: Catahoula, Evangeline, Jefferson, Lafayette (SLI), Lincoln, Livingston, Natchitoches, Orleans; St. Bernard, St. Tammany, Tangipahoa and Washington. Previously it had been recorded from Cameron (Hine, 1906) and Orleans parishes (Jung, 1950).

STRYMON ONTARIO AUTOLYCUS (EDWARDS).—The Northern Hair-streak has been taken only once in Louisiana. Klots (1951) stated that it is not common, but may be caught easily while it feeds. The larva feeds on oak.

S. ontario autolytus has not been recorded from Louisiana previously. The Louisiana record is: *Orleans*: New Orleans, V-5-51, 1 ♀ (TU 3010).

STRYMON LIPAROPS LIPAROPS (BOISDUVAL AND LECONTE), the Striped Hair-streak.—Scudder (1889) stated that this butterfly is usually localized near thickets and swamps. The only specimen from Louisiana was taken in a dense upland hardwood forest with a very thick undergrowth of vines.

S. liparops liparops has not been recorded from Louisiana previously. The lone record is: *LaSalle*: Summerville, VI-12-50, (TU 2049).

INCISALIA IRUS (GODART), the Hoary Elfin.—This species is included on the basis of Skinner's report (1907), of it from the state, although the record is rather dubious. Holland (1931) stated that the species is always rather rare, but has a wide east-west distribution in the latitude of New England. This means that Skinner either published an exceptional range extension, or that he was confused with other nearly related species; most likely his specimen was *I. henrici*, with which *irus* has often been confused.

FENISECA TARQUINIUS TARQUINIUS (FABRICIUS), the Harvester.—The writer has taken only one specimen of this species, a female which was captured in a dense hardwood forest on the banks of the Ouachita river in northeastern Louisiana. The butterfly was flying about four feet from the ground in a very nervous manner and was taken with difficulty. The larvae of this butterfly are of some economic importance because they feed on woolly aphids, particularly those of the alder and beech.

The single record is: *Richland*: 7 miles north of Girard, VI-27-50, 1 ♀ (TU 2084). Previously the species was recorded from Caddo (Scudder, 1889), Orleans (von Reizenstein, 1863) and Webster parishes (Johnson, 1886).

HEMIARGUS ISOLUS (REAKIRT), Reakirt's Blue.—Klots (1951)

gives the range as "Mexico, north to Nebraska, almost entirely west of the Mississippi river." The few specimens collected in Louisiana certainly appear to be at the eastern edge of the species' range, and may be considered an extension as far as the southern portion of the range is concerned.

H. isolus has not been recorded from Louisiana previously. The records are: *Concordia*: 13 miles northwest of Ferriday, VI-16-50, 1 ♂ (TU 2056); *Morehouse*: 12 miles east of Mer Rouge, VI-19-50, 3 ♂ ♂, 1 ♀ (TU 2063).

EVERES COMYNTAS COMYNTAS (GODART).—The Eastern Tailed-blue is very abundant in Louisiana during the spring and summer months; earliest and latest dates are January 2, 1950 (1 ♀) and October 14, 1949 (1 ♂). The writer has seen most specimens along the edges of forests in partly shaded areas and on the ground around moist places. Their quick flight and small size make them hard to catch.

Sixty-five specimens (38 ♂ ♂, 27 ♀ ♀) have been examined from 25 localities in the following parishes: Catahoula, Evangeline, East Feliciana, Lafayette (SLI), LaSalle, Lincoln, Madison, Morehouse, Natchitoches, Ouachita, Richland, Sabine, St. Charles, St. Tammany, Union, Washington and West Carroll. Previously it had been recorded from Madison parish by Montgomery (1932).

CELASTRINA ARGIOLUS PSEUDARGIOLUS (BOISDUVAL AND LE-CONTE).—The Spring Azure apparently is rare in Louisiana. The few specimens collected were taken in the longleaf pine flats of the Florida parishes. Scudder (1889) stated that the range does not touch the Gulf of Mexico; hence this species may not be found in the coastal parishes.

C. argiolus pseudargiolus has not been recorded from Louisiana previously. The two records are *East Feliciana*: Felixville, VI-8-50, 3 ♂ ♂ (TU 2037); *Washington*: Angie, VI-4-50, 1 ♂ (TU 2032).

Family PAPILIONIDAE

PAPILIO POLYXENES ASTERIAS (STOLL).—The Common American Swallowtail apparently is not confined to any particular part of Louisiana. It is rather abundant throughout the spring and summer; earliest and latest dates are January 1, 1950 (1 ♂) and September 7, 1926 (1 ♀). It is a frequent visitor to flowers; specimens have been taken on roses, clover and numerous umbelliferous plants. It has some economic importance as the caterpillars may feed on celery, dill, parsnip, carrots, caraway and parsley.

Twenty-three specimens (14 ♂ ♂, 9 ♀ ♀) have been examined from ten localities in the following parishes: Claiborne, Franklin, Jefferson, Lafayette (SLI), Orleans, Richland, St. Charles, Tensas, Vermilion (SLI) and Washington. Previously it had been recorded from Madison (Montgomery, 1932) and Orleans parishes (von Reizenstein, 1863; Jung, 1939, 1950).

PAPILIO CRESPHONTES CRESPHONTES (CRAMER).—The Giant Swallowtail, one of largest of the North American butterflies, is of eco-

onomic importance to fruit growers for the caterpillar, the "Orange-puppy," feeds on citrus trees. In Louisiana it is more abundant in the southernmost areas. Rothschild and Jordan (1906) record the species from "Louisiana."

Saverner (1908) reported badly damaged *P. cresphontes* and *P. troilus* migrating southward along with monarchs during August; this may have been the situation of two *cresphontes* captured in north Louisiana during August which were accompanying a southerly migration of monarchs. In Louisiana the species flies from spring to early fall; earliest and latest dates are March 2, 1949 (1 ♂, 1 ♀) and November 13, 1911 (1 ♀).

Twenty-six specimens, (13 ♂♂, 13 ♀♀) have been examined from eleven localities in the following parishes: Claiborne, Jefferson, Lafayette (SLI), Livingston, Orleans, Plaquemines, St. Tammany, Terrebonne (LSM) and Vermilion (SLI). Previously it had been recorded from Cameron (Hine, 1906) Orleans (von Reizenstein, 1863; Jung, 1939, 1950) Plaquemines (Jung, 1950), St. Bernard (Jung, 1950) and Terrebonne parishes (Comstock, 1882).

PAPILIO GLAUCUS GLAUCUS (LINNÉ).—The Tiger Swallowtail displays strong sexual dimorphism. In the southern part of its range some of the females are dark brown rather than black and yellow. According to Klots (1951) this melanism occurs in about 50 percent of the females, but he states that the brown form is less common or nonexistent in the extreme south. All of the females that the writer has seen from Louisiana show this dark brown coloration. Some of the males are larger and tend to show the darker yellow color of *P. glaucus australis*, although none of the specimens appear clearly to be that subspecies.

The species is a strong flier and is difficult to catch in flight; however, the writer found them easy to collect while they were feeding on the thistle (*Cirsium horridulum*). Riley and Howard (1895) reported the caterpillars feeding on the leaves of camphor trees in Louisiana.

The species has been collected in all months of the year except January and December; earliest and latest dates for adults are February 18, 1950 (2 ♂♂) and November 16, 1939 (1 ♀).

Twenty-three specimens (17 ♂♂, 6 ♀♀) have been examined from twelve localities in the following parishes: Assumption, Bossier, Claiborne, Lafayette (SLI), Madison, Morehouse, Natchitoches, Orleans, Sabine, St. Charles, St. Tammany and Washington. Previously it had been recorded from Jefferson (Jung, 1950), Morehouse (Riley and Howard, 1895), Orleans (von Reizenstein, 1863) and St. Tammany parishes (Jung, 1950).

PAPILIO TROILUS TROILUS (LINNÉ).—The Spicebush Swallowtail is the most common member of its genus in Louisiana. It flies from early spring to late summer; earliest and latest dates are February 23, 1949 (3 ♂♂) and September 16, 1945 (1 ♂). The larvae and adults feed on spicebush, sassafras and other Lauraceae.

Saverner (1908) stated that *P. troilus* was seen migrating southward with the monarch (*Danaus plexippus*) in August, but no evidence of migrations of this swallowtail have been noted as yet in Louisiana.

Forty-one specimens (27 ♂♂, 14 ♀♀) have been examined from eleven localities in the following parishes: Caddo, DeSoto, Jackson, Jefferson, Lafayette (SLI), LaSalle, Orleans, Ouachita, Sabine, St. Tammany and Union. Previously it had been recorded only from Orleans parish by von Reizenstein (1863) and Jung (1939, 1950).

PAPILIO TROILUS ILIONEUS J. E. SMITH.—While many of the spicebush swallowtails from Louisiana are more typical of the subspecies *troilus*, three specimens possess very definite characteristics of subspecies *ilioneus*. However, the majority collected have characteristics common to either or both of the subspecies, due to the clinal nature of the species.

P. troilus ilioneus has not been recorded from Louisiana previously. The records are: *Orleans*: New Orleans, III-4-49, 2 ♀♀ (TU 1110); *Ouachita*: Sterlington, VI-23-50, 1 ♂ (TU 2072).

PAPILIO PALAMEDES PALAMEDES (DRURY).—The Palamedes Swallowtail is a rather rare insect in Louisiana, records of this species being confined to the coastal parishes. As this butterfly is a strong flier and difficult to capture, adults are more readily obtained by rearing them from the larval stage. The few specimens collected were taken in the months of April, June, July, August and October; earliest and latest dates are April 1, 1918 and October 13, 1934.

Nine specimens (5 ♂♂, 4 ♀♀) were examined from three localities in the following parishes: Lafayette (SLI), Orleans and Terrebonne (LSM). Previously it had been recorded from Orleans parish by von Reizenstein (1863), Rothschild and Jordan (1906) and Jung (1950).

GRAPHIUM MARCELLUS MARCELLUS (CRAMER), the Pawpaw Butterfly.—Although this species is fairly common in Louisiana during the early summer months it is exceedingly difficult to take with a net. A few specimens were obtained, however, after many others had eluded capture. Earliest and latest dates were April 1, 1950 (1 ♂) and September 10, 1947 (1 ♀). Late in the survey it was learned that this butterfly usually picks an orbit to follow in its flight, and if the collector misses it on the first try he has only to wait a few minutes for the same individual to return, flying almost exactly the same course.

Within Louisiana *marcellus* apparently is rare in the coastal and Florida parish areas, and all of the specimens were obtained from the vicinity of the Mississippi river westward and northward. It is more abundant in the upland areas of the state. Its scarcity in southern Louisiana may be due to the lack of its food plant, the pawpaw (*Asimine triloba* and *A. parviflora*), in the coastal region.

Eleven specimens (6 ♂♂, 5 ♀♀) were examined from five local-

ities in the following parishes: Catahoula, Lafayette (SLI), Sabine, Union and West Feliciana. Previously it had been recorded from Orleans parish by Kopman (1903) under the name *Papilio ajax*.

BATTUS PHILENOR PHILENOR (LINNÉ).—The Pipe-vine Swallowtail is most common during the summer months in Louisiana, but it has a long flying season; earliest and latest dates are February 1, 1949 (1 ♂) and October 16, 1940 (1 ♀). Holland (1931) states that *philenor* has been observed ovipositing as late as October. The species is exceptionally fast in flight, perhaps accounting for the scarcity of records. The larvae generally feed on Dutchman's pipe or pipe-vine (*Aristolochia serpentaria* and *A. durior*).

Seventeen specimens (13 ♂♂, 4 ♀♀) have been examined from eleven localities in the following parishes: Bossier, Lafayette (SLI), Morehouse, Ouachita, Rapides, Sabine, St. Tammany, Union and Washington. Previously it had been recorded from Cameron (Hine, 1906), Orleans (von Reizenstein, 1863), St. John the Baptist (Jung, 1950), St. Mary (Kopman, 1903), and St. Tammany parishes (Jung, 1950).

BATTUS POLYDAMUS LUCAYUS (LINNÉ), the Polydamus Butterfly.—The writer has not seen this butterfly in Louisiana, but von Reizenstein (1863) reported it from New Orleans. According to his observations it was very rare, usually found feeding on Virginia snake root and Dutchman's pipe. McDunnough (1938) doubted its occurrence in North America, but Klots (1951) stated that it occurs in the Gulf states from Florida to Texas.

Family PIERIDAE

ANTHOCHARIS GENUTIA GENUTIA (FABRICIUS), the Falcate Orange-tip.—In Louisiana this species apparently is confined to the upland regions of the northern part of the State. Scudder (1889) stated that the butterfly has never been very abundant. From the writer's experience it seems that this species is a very weak flier, and is easy to collect, although Scudder (1889) reported otherwise.

A. genutia has not been recorded from Louisiana previously. The three records are: *Jackson*: Kelleys, IV-1-50, 1 ♂ (TU 1846); *Chatham*, IV-1-50, 2 ♂♂ (TU 1849); *Lincoln*: Downsview, IV-1-50, 1 ♂, 1 ♀ (TU 1859).

COLIAS EURYTHEME EURYTHEME BOISDUVAL.—The Eurytheme Sulphur can be found in all parts of Louisiana, but it is not as abundant in the coastal area as it is in the pinelands and uplands, especially in open grass or clover-covered fields. This species flies throughout most of the year; earliest and latest dates are January 21, 1950 (2 ♂♂) and November 8, 1939 (1 ♀). The larvae feed occasionally on *Trifolium repens* and other related species of this genus, but Scudder (1889) reported that the caterpillars would not eat red clover. The favorite food, however, is the introduced alfalfa (*Medicago sp.*), on which it is a serious pest.

With the exception of *C. a. pseudargiolus*, a lycaenid, *C. eurytheme*

is probably the most variable species in our butterfly fauna. The literature is filled with descriptions of the many sexual and seasonal forms. These have been considered at times to be distinct species, and as such have presented a very puzzling problem. However, in recent years much has been done by Hovanitz (1943, 1944) to study the *Colias* complex; hybridization and female albinism have been studied also by Gerould (1946).

Sixty specimens (26 ♂♂, 34 ♀♀) have been examined from 22 localities in the following parishes: Assumption, Claiborne, Concordia, East Baton Rouge, Evangeline, Lafayette (SLI), Morehouse, Natchitoches, Orleans, Ouachita, Rapides, Richland, and St. Charles. Previously it had been recorded from East Baton Rouge (Floyd, 1941), Madison (Montgomery, 1932; Glick, 1939) and Orleans parishes (Scudder, 1889; Jung, 1939, 1950).

COLIAS PHILODICE PHILODICE (LATREILLE), the Common Sulphur.—The common name of this butterfly implies abundance, but it is rather rare in Louisiana, and although it has a wide range throughout North America one specimen has thus far been taken in the state. From what can be discerned from Scudder (1889) it is not numerous at the southern extremities of its range.

C. philodice philodice has not been recorded from Louisiana previously. The lone record is: *Lafayette*: Lafayette, XI-30-36, 1 ♂ (SLI).

ZERENE CESONIA (STOLL), the Southern Dog-face.—The writer has examined only one specimen from Louisiana, and it has been recorded by von Reizenstein (1863) from New Orleans. The fact that this butterfly flies very fast and often high off the ground may account for the scarcity of records. The species frequents pinelands, and has been seen by the writer in the pine flats of the Florida parishes in August, but on that occasion the individuals were flying fast and high above the ground, and none were caught.

The single record is: *Lafayette*: Lafayette, XI-12-28, 1 ♂ (SLI).

PHOEBIS SENNAE EUBULE (LINNÉ).—The Cloudless Sulphur is very abundant during most of the year throughout Louisiana. Earliest and latest dates are March 4, 1934 (1 ♀) and November 1, 1949 (1 ♂). It is an exceptionally strong flier, and is migratory. Great swarms of them have been observed far out at sea, flying just above the waves (Williams, 1937). During courtship when the male and female "pinwheel" high above the ground they are especially hard to capture, yet when feeding they are so occupied that the writer has taken many by hand. The larvae feed on *Cassia* spp.

Forty-six specimens (25 ♂♂, 21 ♀♀) have been examined from 32 localities in the following parishes: Allen, Assumption, Bossier, Claiborne, Concordia, East Baton Rouge, Evangeline, Franklin, Jefferson, Lafayette (SLI), Orleans, Ouachita, Pointe Coupee, Rapides, Red River, Richland, Sabine, St. Bernard, St. Helena, St. Tammany, Tangipahoa (SLI, TU) and Washington. Previously it had been recorded from Madison (Montgomery, 1932) and Orleans parishes

(von Reizenstein, 1863; Jung, 1939, 1950).

PHOEBIS SENNAE SENNAE (LINNÉ).—This subspecies is included on the basis of Klots' (1951) mention that "in southern Florida and Louisiana many very *sennae*-like specimens occur." He describes the color as being a warmer yellow than that of *eubule*. Indeed, in the Tulane and Southwestern Louisiana Institute collections there are specimens of *P. sennae* that fit this description, particularly those from the Lafayette area. Since the subspecific classification is very complex and for the most part a matter of statistics the writer has chosen to include the "*sennae*-like" specimens in the records for *eubule*. One female taken at Lafayette on November 2, 1950 comes closest to fitting the description of warm yellow.

PHOEBIS PHILEA (LINNÉ), the Red-barred Sulphur.—The writer has never collected *P. philea* although several specimens from Louisiana have been available for examination. In addition to these the writer has information from Dr. Wm. T. M. Forbes (in personal communication) that he had taken this species in New Orleans on January 1, 1933. The species is known to be migratory.

P. philea has not been recorded from Louisiana previously. The few records are: *Allen*: Kinder, VI-12-41, (SLI); *Orleans*: New Orleans, X-11-32, 1 ♂ (TU P-978), and VII-15-32, 1 ♀ (TU P-982).

PHOEBIS AGARITHE MAXIMA (NEUMOEGEN), the Large Orange Sulphur.—As this butterfly is mainly tropical, only three specimens have been caught in Louisiana, and these are from the southern parishes. The species is migratory according to Williams (1937).

It has not been recorded from the state previously. The few records are: *Lafayette*: Lafayette, 1 ♀ (SLI); *Orleans*: New Orleans, VIII-24-26, 1 ♀ (TU P-965), IX-19-31, 1 ♀ (TU P-977), and X-2-31, 1 ♀ (TU P-978).

EUREMA DAIRA DAIRA (LATREILLE), the Fairy Yellow.—This is a very variable species; some have all, others only one-half the border of the hind wings black, and individuals of the latter type often have the undersides of the hind wings white. These two forms for a long time were held as two species, but Dr. R. L. Chermock (personal correspondence) considers them to be variations of one species.

In Louisiana the species apparently is not widespread, nor does it fly during as great a part of the year as does *E. lisa*. With the exception of one male from the southwest, all specimens were taken during the summer in the Florida parishes. Though the species apparently is not evenly distributed, the writer found a dense population of what appeared to be a southwesterly migration September 6-8, 1950, near Covington, La. All the butterflies were flying in one direction a few feet from the ground stopping only occasionally to feed at conspicuous flowers.

E. daira daira has not been recorded previously from Louisiana.

The records are: *Lafayette*: Lafayette, IX-25-36, 1 ♂ (SLI); *Livingston*: Springfield, IX-6-50, 2 ♂♂, 1 ♀ (TU 2183, 2184); *St.*

Helena: Liverpool, IX-7-50, 3 ♂♂, 1 ♀ (TU 2193); Greensburg, IX-7-50, 2 ♂♂ (TU 2194); *St. Tammany*: Folsom, IX-7-50, 1 ♂, 2 ♀♀ (TU 2187); Covington, IX-8-50, 2 ♂♂ (TU 2196); *Tangipahoa*: Lee Landing, IX-6-50, 1 ♂ (TU 2181); Robert, IX-6-50, 1 ♂, 1 ♀ (TU 2185); Tangipahoa, IX-7-50, 1 ♀ (TU 2191); Amite, IX-7-50, 2 ♀♀ (TU 2195); *Washington*: Angie, VI-5-50, 1 ♂, 1 ♀ (TU 2034); Richardson, IX-7-50, 1 ♂, 2 ♀♀ (TU 2188).

EUREMA NICIPPE NICIPPE (CRAMER).—The Nicippe Sulphur is common throughout Louisiana during most of the summer months. However, it has a relatively long flying season; earliest and latest dates are April 8, 1950 (1 ♀) and December 8, 1949 (1 ♀).

This butterfly is not usually common everywhere throughout the summer, but occurs in small swarms in sunny places in the pinelands. When it is flying it is rare to see only one at a time, as usually several are in flight short distances from each other.

Forty-eight specimens (30 ♂♂, 18 ♀♀) have been examined from 26 localities in the following parishes: Avoyelles (SLI), Catahoula, Claiborne, Concordia, Evangeline, Lafayette (SLI), Livingston, Morehouse, Ouachita, Plaquemines, Pointe Coupee, Rapides, Richland, Sabine, St. Helena, St. Landry (SLI), St. Tammany, Tangipahoa, Vermilion (SLI) and Washington. Previously it had been recorded from Madison (Montgomery, 1932) and Orleans parishes (von Reizenstein, 1863).

EUREMA LISA (BOISDUVAL AND LECONTE).—The Little Sulphur is the most abundant pierid in the state. In Louisiana it is most abundant in mid-summer, although it flies from early spring well into the autumn. Earliest and latest dates are January 2, 1950 (2 ♀♀) and October 16, 1949 (4 ♂♂, 4 ♀♀). Scudder (1889) stated that the butterfly will fly in heavily clouded weather, but the writer believes this to be unlikely as it has always been observed to take cover when clouds hide the sunlight.

E. lisa is not a strong flier and is easy to capture. Usually they fly close to the ground in open places, and congregations of them are often seen sucking water from moist ground. However, in spite of its frailness and weak flight, it has been known to migrate in great clouds for remarkable distances (Scudder, 1889). The larvae feed on *Cassia* spp.

One hundred and eleven specimens (73 ♂♂, 38 ♀♀) have been examined from 56 localities in the following parishes: Allen, Assumption, Bienville, Catahoula, Claiborne, Concordia, DeSoto, Evangeline, Franklin, Lafayette (SLI), Lafourche, Livingston, Morehouse, Natchitoches, Orleans, Pointe Coupee, Rapides, Richland, Sabine, St. Bernard, St. Charles, St. Helena, St. Landry, St. Tammany, Tangipahoa, Washington, Webster and West Feliciana. Previously it had been recorded from Cameron (Hine, 1906), Madison (Montgomery, 1932) and Orleans parishes (Jung, 1950).

NATHALIS IOLE (BOISDUVAL), the Dwarf Yellow.—Jung (1950) reported this species as very common about fields in New Orleans,

but I have not found it in great numbers at any one time as it is very local and easily overlooked. It flies in sunny, grassy places along the sides of roads, and in open fields. It is most abundant in the warmer months, but stragglers have been taken as late as October in Louisiana.

The few records are: *Claiborne*: 8 miles east of Lisbon, VIII-6-49, 1 ♂, 1 ♀ (TU 1457); *Lafayette*: Lafayette, X-2-36, 1 ♀ (SLI); *Pointe Coupee*: McCrea, X-14-49, 1 ♂ (TU 1568); *Sabine*: Negreet, VII-7-50, 1 ♀ (TU 2101); 10 miles west of Negreet, VII-8-50, 1 ♀ (TU 2106).

PIERIS RAPAE (LINNÉ).—The Cabbage Butterfly was not originally a member of the North American fauna, but was introduced on this continent at Quebec in 1860 from Europe. From there the species has spread throughout the continent inflicting damage to crops totalling hundreds of thousands of dollars annually. Scudder (1889) gave an excellent account of its spread, but gave no definite date for its introduction into Louisiana. However, it had reached Bastrop, Texas by 1881.

In Louisiana the species is abundant during the spring and early summer months, but may be seen flying during late fall and winter. Earliest and latest dates are January 2, 1950 (5 ♂♂, 1 ♀) and November 30, 1950 (1 ♂). The writer has seen many adults feeding on the blossoms of clover (*Trifolium repens*).

Twenty-one specimens (13 ♂♂, 8 ♀♀) have been examined from nine localities in the following parishes: Catahoula, Lafayette (SLI), Ouachita, St. Charles, Washington and West Feliciana. Previously it had been recorded from Orleans and St. Bernard parishes by Jung (1939, 1950).

PIERIS PROTODICE PROTODICE (BOISDUVAL AND LECONTE).—The Common White has a wide range over the continent and it is not scarce in Louisiana where it flies during the hot summer months. Earliest and latest dates are June 16, 1950 (5 ♂♂, 1 ♀) and September 5, 1938 (1 ♀). The flight is easy and rather methodical, and adults are easily collected.

Twelve specimens (8 ♂♂, 4 ♀♀) have been examined from seven localities in the following parishes: Catahoula, Concordia, Lafayette (SLI), Morehouse, Orleans and Ouachita. Previously it had been recorded from Cameron (Hine, 1906), Madison (Montgomery, 1932) and Orleans parishes (von Reizenstein, 1863; Jung, 1939, 1950).

ASCIA MONUSTE PHILETA (FABRICIUS), the Great Southern White.—Much has been written concerning the migration and immature stages of this butterfly by Nielsen and Nielsen (1950) who found eggs deposited on saltwort (*Batis maritima*), nasturtium (*Tropaeolum majus*), spider-wisp (*Cleome* spp.) and other plants. In spite of its wide range and abundance in the Gulf states only two males and one female have been caught in the state. However, the writer saw many of them flying along the shore and over the water of Lake Pontchartrain at New Orleans (May 10, 1950), but speci-

mens were not obtained.

The few records are: *Lafayette*: Lafayette, VI-25-28, 1 ♀ (SLI) and VII-8-50, 1 ♂ (SLI); *Orleans*: New Orleans, VI-30-31, 1 ♂ (TU P-974). Previously it had been recorded from Orleans parish by von Reizenstein (1863) and Jung (1939, 1950).

Superfamily HESPEROIDEA, the Skippers

Family HESPERIIDAE

EPARGYREUS CLARUS (CRAMER), the Silverspotted Skipper.—The flight of this species is very fast, and although it is common it is not easily caught. All specimens were captured while they fed on flowers, particularly blossoms of the buttonball bush (*Cephalanthus occidentalis*). Caterpillars feed on *Robina*, *Wisteria*, *Pueraria* and other leguminous plants.

Jung (1950) reported it common within residential New Orleans, but the writer has taken specimens only in sunny fields and bordering areas of woods.

The few Louisiana records are: *Caldwell*: Columbia, VIII-3-48, 1 ♂ (TU 429); *Sabine*: Negreet, VII-7-50, 1 ♂ (TU 2101); *St. Tammany*: Folsom, IX-7-50, 1 ♂ (TU 2187); Covington, IX-8-50, 1 ♂, 1 ♀ (TU 2196). Previously it had been recorded from Madison (Glick, 1939) and Orleans parishes (von Reizenstein, 1863; Jung, 1950).

URBANUS PROTEUS (LINNÉ), the Longtailed Skipper.—In Louisiana this species is seen almost throughout the year flying from flower to flower in open sunny places. Earliest and latest dates are February 23, 1949 (1 ♂) and November 6, 1949 (1 ♂). This skipper often picks a resting place and returns to the same spot time and time again after being disturbed. One such individual, whose tails were broken in such a way as to make it easily recognizable, favored a lead pipe in the writer's garden. Day after day for almost a month the same skipper headquartered around the pipe, occasionally flying a few feet away to feed on lantana flowers. The larvae feed on certain species of the Leguminosae, particularly *Wisteria* and *Clitoria*.

Twelve specimens (10 ♂♂, 2 ♀♀) have been examined from eight localities in the following parishes: Allen, Assumption, Orleans, Pointe Coupee, St. Bernard, St. Charles, St. Tammany and Tangipahoa. Previously it had been recorded from Orleans parish by Shufeldt (1884) and Jung (1950).

ACHALARUS LYCIADES (GEYER), the Hoary-edge.—Only three individuals have been taken in Louisiana, and these during the summer. One was captured while it was feeding on flowers of the buttonball bush (*Cephalanthus occidentalis*). The larvae feed on various leguminous plants.

The species has not been recorded from Louisiana previously. The few records are: *Sabine*: Negreet, VII-7-50, 1 ♂ (TU 2102); 10 miles west of Negreet, VII-8-50, 1 ♂ (TU 2106); *Union*: Marion, VI-24-50, 1 ♂ (TU 2075).

THORYBES BATHYLLUS (J. E. SMITH).—The Southern Dusky-wing is more abundant in Louisiana than its ally, *T. confusus*, and flies from early spring throughout the summer. Earliest and latest dates are February 24, 1950 (1 ♂) and September 8, 1950 (2 ♂♂, 1 ♀). The larvae feed on various species of the family Fabaceae.

T. bathyllus has not been recorded from Louisiana previously. The ten specimens examined (6 ♂♂, 4 ♀♀) are from the following localities: *Bienville*: Bienville (TU 1459); *Sabine*: Negreet (TU 2101); *St. Tammany*: Hickory (TU 1800); Covington (TU 2196); *Tangipahoa*: Ponchatoula (TU 2182); Robert (TU 2185); *Union*: 7 miles east of Farmerville (TU 1863); *Washington*: Richardson (TU 2188).

THORYBES CONFUSIS BELL.—The Northern Dusky-wing is found occasionally in Louisiana during the summer months but records of it are not numerous. According to Scudder (1889) it frequents open fields and sunny places visiting flowers, often clovers. Little is known of the immature stages.

T. confusus has not been recorded from Louisiana previously. The few records are: *Catahoula*: 5 miles southwest of Lee Bayou, VI-11-50, 1 ♀, (TU 2044); *Claiborne*: Scottsville, VI-29-50, 1 ♂ (TU 2086); *Sabine*: Belmont, VIII-2-49, 1 ♂ (TU 1379); Negreet, VII-10-50, 1 ♂ (TU 2103).

PYRGUS COMMUNIS COMMUNIS (GROTE).—The Common Checkerspot Skipper is one of the commonest skippers of Louisiana, often seen flying a few inches from the ground on hot, dusty roads. Earliest and latest dates are January 24, 1950 (1 ♂) and October 16, 1949 (3 ♂♂). Most specimens have been taken during flight, which is very rapid and elusive. The collector must not lose sight of the insect for a second if he wishes to catch it, for its checkerboard pattern blends very well with the background.

There is no apparent localization in the state, the species having been collected in all the major areas. The larvae feed on various species of the family Malvaceae.

Twenty-one specimens (18 ♂♂, 3 ♀♀) have been examined from 18 localities in the following parishes: Catahoula, East Feliciana, Evangeline, Jefferson, Lafayette (SLI), Natchitoches, Orleans, Ouachita, Pointe Coupee, Rapides, Sabine, St. Bernard, St. Charles, St. Landry, St. Tammany, Washington and West Feliciana. Previously it had been recorded from Orleans parish by Jung (1950).

CELOTES NESSUS (EDWARDS), the Streaky Skipper.—The writer has not seen this species in Louisiana but it was reported from Madison parish by Glick (1939) who did extensive work with traps carried by airplanes. A single specimen was taken during the day at an altitude of twenty feet.

PHOLISORA HAYHURSTII (EDWARDS), Hayhurst's Skipper.—A single specimen of this species has been taken in Louisiana, flying near the ground in a dense oak-hardwood stand on the front lands of the

Mississippi river. Little is known concerning the immature stages.

The species has not been recorded from Louisiana previously. The single record is: *Jefferson*: Kenner, III-9-51, 1 ♂ (TU 2298).

ERYNNIS HORATIUS (SCUDDER AND BURGESS), Horace's Dusky-wing.—Most of the individuals were captured in hot, sunny spots in and along dense forests, but none were seen feeding. The flight is rapid and fleeting, the insect staying about ten feet away from the collector, alighting on the ground, and darting to a new resting place if disturbed. Three males collected on June 4th, and 5th were sitting on the hot, dry surface of a sand bar along the Pearl river. Earliest and latest dates are June 1, 1950 (1 ♂) and September 7, 1950 (1 ♂). Little is known about the immature stages.

Eleven specimens (9 ♂♂, 2 ♀♀) were examined from nine localities in the following parishes: Assumption, DeSoto, East Feliciana, LaSalle, St. Tammany, Union and Washington. Previously it had been recorded from Orleans parish by Jung (1950).

ERYNNIS JUVENALIS (FABRICIUS).—Only three specimens of this skipper have been taken in Louisiana. The larvae feed on oaks and various legumes according to Scudder (1889).

This species has not been recorded from Louisiana previously. The records are: *Orleans*: New Orleans, II-4-50, 1 ♀ (TU 1782); *St. Tammany*: Covington, IX-8-50, 2 ♀♀ (TU 2196).

ANCYLOXYPHA NUMITOR (FABRICIUS).—The Numitor Skipperling apparently is never abundant in Louisiana. According to Scudder (1889) the flight is slow and feeble and it is one of the easiest skippers to capture in flight. The larvae feed on grasses (Klots, 1951). Earliest and latest dates are February 18, 1950 (1 ♂) and October 19, 1949 (1 ♀).

Eight specimens (3 ♂♂, 5 ♀♀) have been examined from seven localities in the following parishes: Allen, Evangeline, Jefferson, St. Bernard, St. Charles, St. Tammany and Washington. Previously it had been recorded from Jefferson parish by Jung (1950).

COPAEODES MINIMA (EDWARDS), the Tiny Skipperling.—This is probably the smallest skipper in North America. It is very common but its size and ability to blend into its surroundings make it difficult to see. The majority were taken while feeding on daisies in open, sunny fields throughout the state. Earliest and latest dates are March 2, 1949 and October 18, 1949. Nothing is known of the early stages.

C. minima has not been recorded from Louisiana previously. Twenty-four specimens (13 ♂♂, 11 ♀♀) have been examined from 14 localities in the following parishes: Claiborne, Evangeline, Jefferson, Livingston, Morehouse, Orleans, Ouachita, Pointe Coupee, Rapides, Richland, St. Bernard and Tangipahoa.

HESPERIA LEONARDUS STALLINGSI H. A. FREEMAN.—A single specimen of the Leonardus Skipper was taken in Madison parish by Glick (1939) in an airplane trap at an altitude of twenty feet. The

writer has no other information concerning the occurrence of this species in Louisiana.

HYLEPHILA PHYLEUS (DRURY).—The Fiery Skipper is often taken while it frequents flowers along the borders of woods, and in open places in dense forests. The flight is not rapid, hence the species is easily captured. Earliest and latest dates are March 2, 1949 (1 ♀) and October 16, 1949 (1 ♂, 1 ♀). The larvae supposedly feed on crab grass (Scudder, 1889).

Twenty-one specimens (13 ♂♂, 8 ♀♀) have been examined from 15 localities in the following parishes: Catahoula, East Feliciana, Evangeline, Jefferson, Morehouse, Orleans, Richland, Sabine, St. Landry, Tangipahoa, Union and Washington. Previously it had been recorded from Cameron parish by Hine (1904).

ATALOPEDES CAMPESTRIS (BOISDUVAL), the Sachem.—The few Louisiana specimens are all from the eastern parishes near the Mississippi river. From what the writer has observed the flight is rather rapid and jerky, the skipper flitting from flower to flower; however, when it is feeding it may be caught easily. The larvae feed on Bermuda grass.

The species has not been recorded from Louisiana previously. The records are: *East Feliciana*: Felixville, VI-8-50, 2 ♀♀ (TU 2039); *LaSalle*: Summerville, VI-12-50, 1 ♂ (TU 2048); *Morehouse*: 10 miles west of Twin Oaks, VI-26-50, 1 ♂, 1 ♀ (TU 2079); *Ouachita*: Perryville, VI-23-50, 1 ♂ (TU 2071); *Sterlington*, VI-18-50, 1 ♂ (TU 2060) and VI-23-50, 1 ♀ (TU 2072); *Union*: Marion, VI-24-50, 1 ♂, 1 ♀ (TU 2075).

POLITES MANATAAQUA MANATAAQUA (SCUDDER), the Manataaqua Skipper.—Lindsey, Bell and Williams (1931) stated that this subspecies occurs from the northeastern United States to Alabama, and westward to South Dakota and Nebraska. Klots (1951) described its range as above, but included Arkansas and Georgia. The species is rare in Louisiana, but nevertheless the six specimens taken constitute what appears to be a southern range extension. All were captured in moist, grassy openings in the pine flats of the Florida parishes north of Lake Pontchartrain. The larvae feed on common grasses.

The subspecies has not been recorded from Louisiana previously. The records are: *St. Tammany*: Hickory, IX-13-50, 1 ♂ (TU 2198); *Tangipahoa*: Ponchatoula, IX-6-50, 4 ♂♂, 1 ♀ (TU 2182).

POLITES THEMISTOCLES (LATREILLE).—The Tawny-edged Skipper is well distributed throughout Louisiana. All specimens thus far have been collected during the summer months in open sunny spots in fields and woods, especially where there are flowers in bloom. The caterpillars feed on grass.

The species has not been recorded from Louisiana previously. The records are: *East Feliciana*: Felixville, VI-8-50, 1 ♂ (TU 2039); *Sabine*: Negreet, VII-7-50, 1 ♀ (TU 2101); *St. Tammany*: Hickory,

VII-15-50, 1 ♀ (TU 2001); *Tangipahoa*: Lee Landing, IX-6-50, 1 ♂, 1 ♀ (TU 2181); Ponchatoula, IX-6-50, 1 ♂ (TU 2182); *Union*: Haile, VI-20-50, 1 ♂ (TU 2067).

POLITES VIBEX BRETTUS (BOISDUVAL AND LECONTE), the Whirlabout.—There is no apparent localization of this species in Louisiana, and although it is not common, it has been taken often in the pine flats of the Florida parishes and in other parts of the state. All specimens were collected while they were feeding on wild flowers. The larvae feed on grasses.

P. vibex brettus has not been recorded from Louisiana previously. The records are: *Evangeline*: 12 miles west of Mamou, X-16-49, 1 ♀ (TU 1576); *Sabine*: Negreet, VI-7-50, 2 ♂♂, 2 ♀♀ (TU 2101); 8 miles west of Negreet, VII-8-50, 1 ♂ (TU 2107); *St. Tammany*: Covington, IX-8-50, 1 ♂ (TU 2180) and IX-8-50, 3 ♂♂ (TU 2196); *Tangipahoa*: Robert, IX-6-50, 2 ♂♂ (TU 2185); *Union*: Haile, VI-20-50, 1 ♀ (TU 2067).

WALLENGRENIA OTHO OTHO (J. E. SMITH), Otho's Skipper.—Thus far in Louisiana this species has been collected mostly in the Florida parishes. The larvae feed on crab grass (*Panicum sanguinale*) according to Klots (1951).

Otho's skipper has not been recorded from Louisiana previously. The records are: *Orleans*: New Orleans, III-22-50, 1 ♂ (TU 1821); *St. Tammany*: Covington, 4 ♂♂, 2 ♀♀ (TU 2196); *Tangipahoa*: Ponchatoula, IX-6-50, 1 ♂ (TU 2182).

POANES VIATOR (EDWARDS), the Broadwinged Skipper.—Although this species apparently is locally very common in Louisiana during the spring and early summer months, only twelve specimens have been collected thus far. All of these were taken together while they were feeding on a roadside strip of daisies. The flight is exceptionally fast. Lindsey, Bell and Williams (1931) stated that the species flies from June to August. Nothing is known of the early stages.

The Louisiana record is: *St. Charles*: Norco, III-10-51, 6 ♂♂, 6 ♀♀ (TU 2301). Previously it had been recorded from Orleans parish by Scudder (1889).

ATRYTONE AROGOS AROGOS (BOISDUVAL AND LECONTE), the Iowa Skipper.—A single specimen has been collected in Louisiana while it was feeding on daisies growing in a garbage dump. Little information is available on the immature stages.

The species has not been recorded from Louisiana previously. The lone record is: *St. Tammany*: Covington, IX-8-50, 1 ♂ (TU 2197).

ATRYTONE DUKESI LINDSEY, Dukes' Skipper.—A single specimen has been taken in Louisiana. The species was described from Mobile, Alabama, and Holland (1931) predicted that it would occur over a wider area along the Gulf, although Klots (1951) made no mention of it west of Alabama. The Louisiana record constitutes a possible westward range extension. Information is lacking concerning the early stages.

The species has not been recorded from Louisiana previously. The lone record is: *West Carroll*: 11½ miles west of Oak Grove, VI-19-50, 1 ♂ (TU 2064).

ATRYTONE RURICOLA METACOMET (HARRIS).—The Dun Skipper apparently is not common in Louisiana, as only two specimens have been taken, and those were in the western and northern part of the state. Almost nothing is known about the immature stages of this skipper.

A. ruricola metacomet has not been recorded from Louisiana previously. The records are: *Sabine*: Negreet, VII-7-50, 1 ♂ (TU 2101); *Union*: Marion, VI-24-50, 1 ♂ (TU 2075).

OLIGORIA MACULATA (EDWARDS), the Twin Spot.—Edwards (1865) described this species from New Orleans, but both Holland (1931) and Lindsey, Bell and Williams (1931) considered it to be most abundant toward the Carolinas. Klots (1951) stated that it strays west to Texas. Indeed, the few specimens collected in Louisiana have all been taken from the eastern part of the state, particularly in the pine flats of the Florida parishes. Very little is known concerning the immature stages, although the larvae presumably feed on grass (Klots, 1951).

The records are: *St. Tammany*: St. Tammany, IV-13-50, 1 ♀ (TU 1903); Covington, IX-8-50, 1 ♂ (TU 2196); Hickory, IX-13-50, 1 ♂ (TU 2198); *Tangipahoa*: Ponchatoula, IX-6-50, 2 ♂♂ (TU 2182).

LEREMA ACCIUS (J. E. SMITH).—The Accius Skipper apparently is not abundant in Louisiana. Thus far it has been taken during the late summer months only, although it has been reported to fly during all months of the year in the southernmost limits of its range (Lindsey, Bell and Williams, 1931). The larvae feed on grasses and Indian corn according to Klots (1951).

The records are: *Pointe Coupee*: McCrea, X-14-49, 1 ♂, 1 ♀ (TU 1567, 1568); *St. Tammany*: Covington, IX-5-50, 1 ♀ (TU 2180) and IX-8-50, 3 ♂♂, 1 ♀ (TU 2196); Folsom, IX-7-50, 1 ♂ (TU 2187); *Tangipahoa*: Ponchatoula, IX-6-50, 1 ♂ (TU 2182). Previously it had been recorded from Madison (Glick, 1939) and Orleans parishes (Edwards, 1865).

AMBLYSCIRTES VIALIS (EDWARDS).—A single specimen of the Roadside Skipper has been taken in Louisiana. Klots (1951) stated that the range is from southern Canada to Florida, and westward to Texas, but Holland (1931) wrote that it was common in the Mississippi valley. Lindsey, Bell and Williams (1931) stated that *vialis* apparently is replaced by another species in the southeastern states. There can be no doubt, however, that *vialis* is an occasional visitor in Louisiana, particularly in the northern parishes. The caterpillars feed on grasses.

A. vialis has not been recorded from Louisiana previously. The record is: *Webster*: Leton, VIII-6-49, 1 ♂ (TU 1449).

AMBLYSIRTES TEXTOR (HUBNER).—The Wovenwinged Skipper is represented in Louisiana by a single specimen. This individual was taken while it was feeding on a blackberry flower. Nothing is known of the immature stages.

A. textor has not been recorded from Louisiana previously. The record is: *Jefferson*: Kenner, III-9-51, 1 ♂ (TU 2297).

LERODEA L'HERMINIERI (LATREILLE), the Fuscous Skipper.—Five specimens of this uncommon skipper have been taken in Louisiana during the summer months. Little is known about the immature stages.

L. l'herminieri has not been recorded from Louisiana previously. The records are: *St. Helena*: Liverpool, IX-7-50, 1 ♂ (TU 2193); *Tangipahoa*: Ponchatoula, IX-6-50, 3 ♂ ♂ (TU 2182); *Union*: Haile, VI-20-50, 1 ♂ (TU 2066).

LERODEA EUFALA (EDWARDS), the Eufala Skipper.—This species also is rare in Louisiana. Only four specimens have been taken in the state and these in late summer and early autumn. The larvae feed on grasses.

The records are: *St. Bernard*: Shell Beach, X-18-49, 2 ♂ ♂, 1 ♀ (TU 1595); *Tangipahoa*: Lee Landing, IX-6-50, 1 ♀ (TU 2182). Previously it had been recorded from Madison parish by Glick (1939).

CALPODES ETHLIUS (STOLL), the Brazilian Skipper.—Although this species apparently is common in Louisiana, only one specimen has been taken during the survey. The flight is very rapid, the skipper rising and falling in a very quick undulating manner.

Jung (1950) reported large numbers of the larvae on canna in New Orleans, and the single adult specimen in the Tulane collection was reared from a pupa found on canna leaves. Dr. Forbes informed the writer (in correspondence) that he observed numerous larvae and adults of *ethlius* in New Orleans on January 1, 1933.

The single record is: *Orleans*: New Orleans, X-17-50, 1 ♀ (TU 2224).

PANOQUINA PANOQUIN (SCUDDER).—The Salt-marsh Skipper has not been taken by the writer in Louisiana, but is included here on the basis of Scudder's (1889) report of it from New Orleans. Nothing is known about the early stages.

PANOQUINA OCOLA (EDWARDS).—The Ocola Skipper is fairly common in Louisiana during the late summer, frequenting the edges of forested areas. Nothing is known about the immature stages.

P. ocala has not been recorded from Louisiana previously. The records are: *Allen*: Oberlin, X-16-49, 1 ♀ (TU 1574); Hampton, X-16-49, 1 ♂ (TU 1579); *Evangeline*: St. Landry, X-14-49, 1 ♀ (TU 1569); Point Blue, X-16-49, 1 ♂ (TU 1579); *Pointe Coupee*: McCrea, X-14-49, 1 ♂, 1 ♀ (TU 1567, 1568); *St. Bernard*: Delacroix Island, X-18-49, 1 ♂ (TU 1592); *St. Charles*: Norco, I-24-50, 1 ♂ (TU 1763); *St. Tammany*: Folsom, IX-7-50, 1 ♀ (TU 2187); *Tangipahoa*: Ponchatoula, IX-6-50, 2 ♂ ♂, 1 ♀ (TU 2182).

SUMMARY

Butterflies and skippers were collected in Louisiana during three years (1948-1951) and these records are coupled with those of other institutional and published records to form a composite list for the state. Before the writer's survey was begun there had been 43 species recorded, and during its progress a local study by Jung (1950) added 17 new state records, bringing the total to 60 by July 1950. With the completion of the present study 38 previously unrecorded species are added, and the state list now totals 98.

An attempt was made to collect in many areas of the state, and during different times of the year. Fifty of the 64 parishes of Louisiana were sampled, and two additional ones are included in the literature. Best represented are the southeastern parishes, New Orleans and vicinity. A total of 1501 adult butterflies and skippers were examined in the course of the study.

Each species on record is listed with observations by the writer and a summary of the collection data arranged by parishes.

From laboratory analyses of the records certain geographic patterns are noted. While most species are found distributed more-or-less evenly throughout the state, some are restricted to particular physiographic or vegetational regions. *Euptychia areolata areolata*, *E. gemma gemma*, *Celastrina argiolus pseudargiolus*, *Eurema daira daira*, *Wallengrenia otho otho* and *Oligoria maculata* appear to inhabit only the Florida Parish pine area, with *E. gemma gemma* occasionally visiting the Upland pine areas. *Euptychia cymela cymela*, *Anaea andria*, *Graphium marcellus marcellus* and *Anthocharis genutia* are more-or-less restricted to upland pine and hardwood areas. *Heliconius charitonius*, *Agraulis vanillae nigrior*, *Euptoieta claudia claudia* and *Papilio cressphontes cressphontes* are restricted almost entirely to the southern parishes.

An analysis of the flying dates leads to the general conclusion that most of the common species fly almost throughout the year in Louisiana, with their peaks of abundance in the hot summer months. Figure 3 summarizes the seasonal distribution of all of the commoner species.

On comparison with published distribution patterns it appears that the Louisiana specimens of *Melitaea nycteis nycteis* constitute a range extension of significance. Since the species is not abundant in Louisiana this must be the southern tip of its range. The collections of *Polites manataaquia manataaquia*, *Hemiargus isolus* and *Atrytone dukesi* assist in defining the ranges of these species.

The 98 species recorded here are not all of the butterflies and skippers expected from the state. More concentrated sampling over a longer period of the year, and a more intense consideration of the immature stages will undoubtedly reveal a greater number of species. Perhaps in due time the writer may be able to fill in the vacancies, however, it is hoped that this paper will stimulate entomologists to initiate further studies of the Lepidoptera of Louisiana.

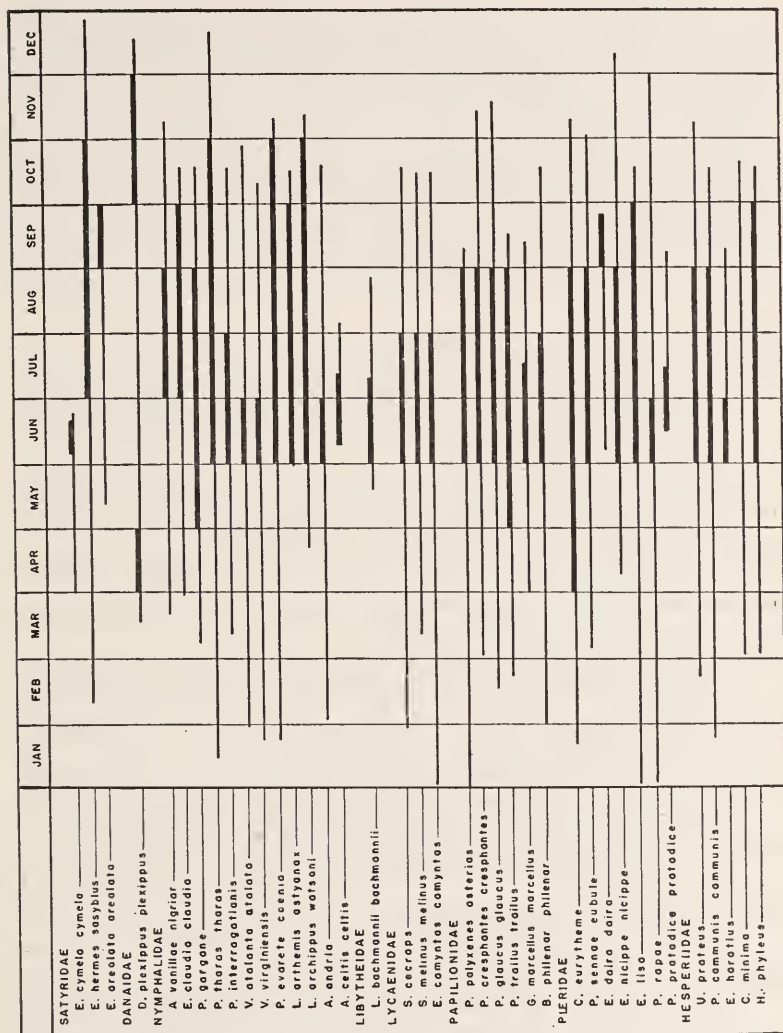


Figure 3. Summary of flying seasons of the commoner species in Louisiana; thickened parts of bars indicate months of greatest abundance.

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