

ARTHUR STUPKA

THE AMERICAN MUSEUM OF NATURAL HISTORY

OUR COMMON BUTTERFLIES



By F. E. WATSON and F. E. LUTZ

GUIDE LEAFLET SERIES No. 38
FIFTH, REVISED EDITION, 1926

Our Common Butterflies

by

F. E. WATSON & F. E. LUTZ




GUIDE LEAFLET No. 38

FIFTH AND REVISED EDITION

The American Museum of Natural History

NEW YORK, 1926





Digitized by the Internet Archive
in 2012 with funding from
LYRASIS Members and Sloan Foundation

<http://archive.org/details/ourcommonbutterf00wats>



SWALLOWTAILS

and (above) their less ornate relative, the Clouded Sulphur (*Colias philodice*, under side on the right). Just below are the male (left) and female Asterias Swallowtail (*Papilio polyxenes*). Finally, we show the male (left) and female Spicebush Swallowtail (*P. troilus*)

Our Common Butterflies

By F. E. WATSON AND F. E. LUTZ

IN THIS case "our" refers to the vicinity of New York City, although most of these species are widely distributed. Haunts, food-habits, and life histories are given in tabular form following the text.—THE EDITOR.

THE graceful flight and beauty of adult butterflies have made them the most popular insects, but in their youth they have in the eyes of many people little beauty and can only crawl and eat. They are "horrid caterpillars," poisoned by gardeners and shunned by all except the few who see in them the possibilities of maturity. However, not all caterpillars develop into butterflies; the greater number become moths, and some creatures which strongly resemble caterpillars are really quite different from either butterflies or moths.

A useful distinguishing characteristic of insects is the possession of three pairs of true legs. Nothing else which the amateur is likely to notice has just this number. Spiders have four pairs and centipedes have many; they are not insects. Now a caterpillar *appears* to have more than three pairs of legs, but it will be seen upon close examination that the three front pairs are the only ones which are jointed. The other "legs" are not true legs but merely fleshy prolegs. Young leaf-feeding beetles do not have these prolegs and young saw-flies (relatives of wasps) have five or more pairs in the middle of the body, whereas young butterflies have four pairs and a pair of claspers at the hind end of the body.

When young Lepidoptera have eaten their fill once they cast off the skin they have been wearing and get a larger one. This process is repeated three or four times, and finally they are full-grown caterpillars. Then, if they

are young moths, they seek a suitable place and usually spin a cocoon of silk threads. Inside of this they molt once more, but instead of becoming a larger caterpillar each turns into a mummy-like pupa. If they are young butterflies, the fundamental process is



An Asterias Swallowtail caterpillar. Note the two kinds of legs

the same but no cocoon is made. The pupa, which is also called a chrysalis, hangs naked. Perhaps the single thread around the body of some of them and the silk which fastens the tail to the supporting surface represent the moth's cocoon.

The distinction between adult moths and adult butterflies is largely a matter of habits and "feelers." The antennæ are a pair of appendages on an insect's head which are popularly called "feelers," although, as a matter of fact, insects smell and possibly hear with their antennæ as well as feel. The antennæ of butterflies are threadlike and have a knob or swelling at the tip. The antennæ of many moths are clearly feather-like. In others the plumules are not visible to the naked eye and the antennæ look like threads but they

almost never have a swelling at the end large enough to be confused with the knob of butterflies. Then, too, all our butterflies fly only in the daytime, while all but a very few of our moths fly only at night.

SWALLOWTAILS

These are the giants of our northern day-fliers and belong to the genus *Papilio*. The conspicuous resemblance of their hind wings to the "swallow-tails" of the sartorial art and their large size distinguish them from all of our other Lepidoptera except the pale-green night-flying Luna. The *Papilio* which is largely yellow and has, among other black markings, three or four short black bands on the front half of each front wing is the Tiger Swallowtail. Sometimes the female of this species has the yellow replaced by sooty brown except for the marginal spots. This form is rare with us but is quite common in the South.

The Asterias Swallowtail is about as common as the Tiger. Its young feed on parsley, carrot, celery, and parsnip leaves. The adult male may be recognized by the row of yellow spots across the middle of the wings. These spots are sometimes much reduced in the female. The row of blue spots, inside the marginal yellow ones, is more distinct in the female than in the male.

The Spicebush Swallowtail, our commonest species, has a single or at most an incomplete second row of greenish-white spots on the front wings. The hind wings are usually suffused with greenish in the male and bluish in the female. Its larvæ feed on sassafras and spicebush leaves.

WHITES

A white butterfly is a common sight and a guess that it is *the* Cabbage

Butterfly (*Pieris rapæ*) will almost always hit the mark. There are really three kinds of white butterflies in the Northeast whose young feed on cabbage and allied plants. Two of them are natives, but the third was accidentally brought from Europe to the vicinity of Quebec about 1860. Since that time, aided doubtless by further importations, it has spread over the whole country and, like its compatriot the English sparrow, it has largely replaced its native relatives in the more densely populated regions. The European Cabbage Butterfly has the tips of the upper side of the front wings black; there are two black spots on each of the front wings of the female and one on those of the male; the under side of the hind wings is yellowish and without markings.

With us the Mustard White, or Immaculate Cabbage Butterfly, has practically no markings on the upper surface of the wings, although in other parts of the country it is subject to many interesting variations.

The Checkered White, or Southern Cabbage Butterfly, has no definite black tips to the front wings, but it has two or three distinct black spots on the upper surface of each in the male and many dusky spots in the female.

There is a pretty little White that may be recognized by the green marbling on the under side of the hind wings. It is called the Falcate Orange-tip from the shape and color of the front wings, although only the males are orange-tipped.

(See also the next section.)

YELLOWS

Several species of yellow butterflies are closely related to the Whites just described. They nearly all feed on clover and its allies. It should be re-



TIGER SWALLOWTAIL (*Papilio glaucus*)
Male, above; female, form *turnus*, below



WHITES AND YELLOWS

From above downward.—Cabbage Butterfly (*Pieris rapæ*); male, left, and female. Mustard White (*P. napi*). Checkered White (*P. protodice*); male, left, and female. Falcate Orange-tip (*Anthocharis genutia*); male, left, and under side. Little Sulphur (*Terias lisa*); male, left, and under side



Regal Fritillary (*Argynnis idalia*); male, above, and under side

marked parenthetically that when the food of a species is mentioned we mean the food of its young, for adult butterflies do not eat. At most they sip water from wayside pools or nectar from flowers through a coiled tubelike mouth which entirely lacks teeth or even jaws.

The most common Yellow in the Northeast is the Clouded Sulphur. It may be distinguished from the Little Sulphur by its size and by the presence of a silvery spot on the under surface of each hind wing. Occasionally the

normally yellow parts of the Clouded Sulphur are white but the silvery spots differentiate it from the Whites. This variation is confined to the female.

THE FRITILLARIES

Three of our Fritillaries have a wing expanse of at least two inches. They are tawny or tawny-red above, variously studded with silvery white spots below. The upper surface of the hind wings of the Regal Fritillary is nearly black but the base is tawny and there are two rows of light spots. The outer



Great Spangled Fritillary (*Argynnis cybele*); male, above, and under side

row of these spots is tawny in the male, both being whitish in the female. The Great Spangled and Smaller Spangled have no white markings on the upper surface and the wings are darker at the base than elsewhere although not at all black except for spots and irregular bands. It is difficult to distinguish between these two species, the chief difference being on the under side of the hind wings, which in the Great Spangled have a much wider and paler yellow band than in the Smaller Spangled. The latter is the smallest of the three. All of them feed upon violets, as do the Meadow and the Silver-bordered,

their smaller relatives. The last two species are very similar on the upper side but on the under side the Meadow does not have any silvery spots.

The Pearl Crescent, which feeds upon asters, should be considered with the last two mentioned, for each has the upper side tawny, closely checkered with black. The under side is yellowish mottled with brown, a whitish crescentic spot near the middle of the hind margin being usually present and frequently accompanied by other similar spots.

The Baltimore has the ground color of both wings black, bordered with



Smaller Spangled Fritillary (*Argynnis aphrodite*); male, above, and under side

orange-red spots within which are two or three rows of white spots. The under side is similar to the upper but with additional spotting. This butterfly is subject to great variation. During the season in which they are born the caterpillars are gregarious, living within a web with which they envelope their food-plant, the Turtle-head and, less commonly, allied plants. After molting three times, the whole colony hibernates within the web, made more dense for the purpose. In the following spring, they leave the web, disperse, and feed upon a great variety of plants.

ANGLE-WINGS

The Angle-wings "look as if Mother Nature had with her scissors snipped the edges of their wings, fashioning notches and points according to the vagaries of an idle mood." The wing expanse is about two inches and, while the upper surface is tawny, variously marked, the under surface is a combination of brown and gray which corresponds so closely with the color of dead leaves that an Angle-wing at rest on the forest floor is extremely well hidden.

The Violet-tip has a tail suggestive



From above downward (under sides on the right).—Silver-bordered Fritillary (*Brenthis myrina*); Meadow Fritillary (*B. bellona*); Pearl Crescent (*Phyciodes tharòs*); and the Baltimore (*Melitæa phaëton*)

of the Swallowtails. The upper surface of this tail and the adjacent marginal portions of the hind wing are tinged with violet. On the under side of each hind wing there is a pair of silvery

markings which are somewhat like an interrogation point. The young feed on elm leaves.

The Hop Merchant or Comma has a silvery comma or parenthesis on the



From above downward (under sides on the right).—Violet Tip (*Polygonia interrogationis*); Hop Merchant (*P. comma*); and Gray Comma (*P. progne*)

under side of each hind wing and there is considerable yellowish color on the under surface of both pairs of wings. The first name given here refers to the feeding habits of the young but

wood-nettle is the preferred food-plant.

The Gray Comma or Progne has a silvery marking similar to that of the Comma but smaller, and the under



Mourning Cloak (*Aglais antiopa*); upper, above, and under side

surface lacks yellow. Its young prefer the leaves of currant and gooseberry.

The Angle-wings hibernate as adults.

VANESSAS

The Red Admiral has "eye-spots" (circular spots surrounded by one or more rings of a different color) on the under side of the hind wings but they are usually very indistinct. This species can best be recognized by the brilliant red band crossing each black front wing.

Eye-spots are very distinct on the

under surface of the hind wings of Hunter's and the Thistle Butterflies. For some strange reason, these, but more particularly the latter, are also called the Painted Lady or Painted Beauty. The Thistle is one of the most widely distributed of butterflies—as widely as the thistles on which it feeds. There are usually four eye-spots on each hind wing, below, these spots being smaller than the two of Hunter's.

The Mourning Cloak, or, as the English call it, the Camberwell Beauty, is blackish with a lighter margin



THREE COMMON VANESSAS

The upper sides are shown on the left; the under sides on the right. From above down they are the Red Admiral (*Vanessa atalanta*), Hunter's Butterfly (*V. huntera*), and the Thistle Butterfly (*V. cardui*). Each of these has also been put in the genus *Pyrameis*, instead of *Vanessa*

underneath, and blue-black-brownish edged with yellow above. Its spiny young feed on willow, poplar, elm, and the like.

The Buckeye has a narrow orange band near the border of its brown wings. Each front wing is ornamented with a whitish transverse band and a large eye-spot. The hind wing has two of these eye-spots. Beneath, the front

any rate, none of us has ever found the Monarch in the North during the winter, although its black and yellow banded larvæ with their long flexible "horns," and its gold-dotted delicate bluish-green chrysalis are as easily recognized as the adult.

The Viceroy resembles to an astonishing degree the common and wide-spread but not closely related Milkweed or



Buckeye (*Junonia cænia*); upper, left, and under sides

wings are similar but duller in color. The hind wings are grayish, brownish, or reddish, with the eye-spots represented by mere spots or dots.

The Vanessa, like the Angle-wings, hibernate as adults hidden away under a pile of fence rails, in a hollow log or in some such nook.

THE RULERS

The Monarch, or Milkweed Butterfly, during early autumn assembles in great swarms in the northeastern United States, large numbers hanging quietly from the leaves and branches of trees and shrubs. These flocks then move southward, suggesting the migration of birds. It is believed, but not positively established, that there are return migrants in the spring. At

Monarch Butterfly. Its general color is a tawny red; the wing veins are outlined in black, and there is a white-spotted black margin to the wings. So far, the description will fit either species, but the Viceroy has a narrow black band across the middle of the hind wings which the Monarch lacks. Like other members of its genus (*Basilarchia*), it hibernates as a larva in a silken-lined tube formed of part of a leaf of the food-plant and attached to a twig by silk.

The Blue Emperor is also called the Red-spotted Purple, the red spots being at the apex of the front wings on the upper side but more scattered on the lower side. This is, perhaps, our most beautiful butterfly and is subject to great color variation. Some indi-

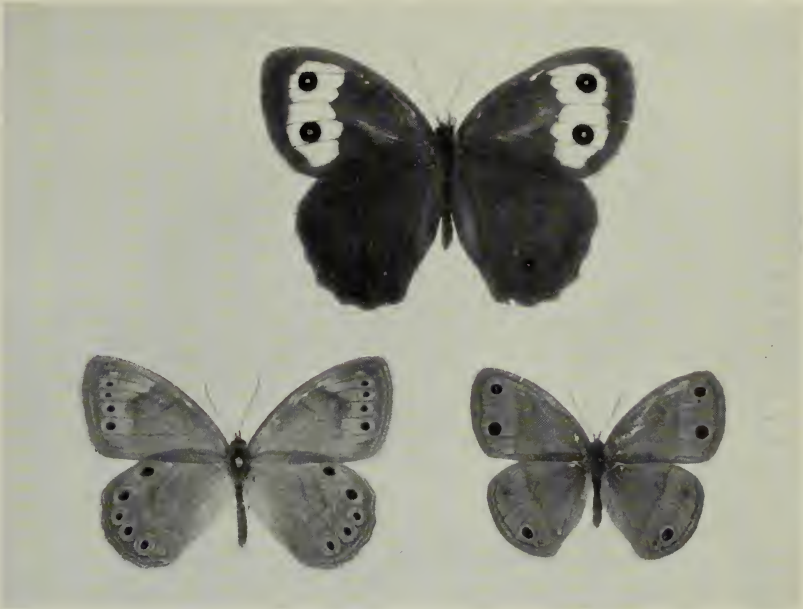


RULERS

From above downward.—Monarch (*Danus archippus*); Viceroy (*Basilarchia archippus*) and Blue Emperor (*B. astyanax*)

viduals have the red spots on the upper side entirely wanting. In others there is a distinct greenish cast, especially distinct on the hind wings. It has also a very rare form, *albofasciata*, so called because of the white band on

row of four small spots on the upper surface of each front wing and the Little Wood-satyr has but two. The brown of both is rather pale and both have the spots on the upper surface of the hind wings "eyed."



Common Wood-nymph (*Satyrus alope*), above; Common Grass-nymph (*Satyroides canthus*), left; and Little Wood-satyr (*Neonympha eurytus*)

both fore and hind wing. This form closely resembles the White Admiral of the Catskills and northward, but white-banded specimens taken in the vicinity of New York City are *albofasciata*.

THE EYED BROWNS

The common Nymphs have eye-spots on the upper side of the front wings. The general color is brownish. That of the Common Wood-nymph is dark but the eye-spots of the front wings are set in a yellowish band. There are not usually more than two, if any, spots on the upper surface of each hind wing.

The Common Grass-nymph has a

HAIR-STREAKS, COPPERS, AND BLUES

We can give only a few examples of this large family of small and often brilliant butterflies. The legs of the slug-shaped caterpillars are so shortened that these creatures seem to glide rather than crawl. The larvæ of many species secrete a sweetish fluid which is eagerly gathered by ants and the larvæ will usually be found with one or more ants in attendance. Of the species mentioned below, the larvæ of the Coral Hair-streak feed at night, and during the day remain beneath the surface of the ground in ants nests at the foot of the food-plant. Their chrysalis is also formed there.



From above downward (under sides on the right).—Gray Hair-streak (*Strymon melinus*). Coral Hair-streak (*S. titus*). Banded Hair-streak (*S. calanus*)

The Gray Hair-streak has the upper side of both wings brownish-gray, with an orange patch on each hind wing. Beneath, the wings are light gray with two dark, white-edged lines in addition to the orange patches. Each hind wing is also provided with a long threadlike tail.

The Coral and Banded Hair-streaks are brown on the upper and under sides of their wings and without markings above. Below, the Banded has two narrow blue bands, and, on each hind wing, one or two orange patches, a blue patch, and a threadlike tail; the Coral has a row of black dots near the center, and a band of coral-red spots

(sometimes absent on the front pair) along the margin of each wing.

The American Copper has its front wings coppery-red with some black spots. Its hind wings are brownish with a coppery-red border. The under side is similar but much paler.

The Tailed Blue is a delicate little blue creature which has tails that may be seen by looking closely, but it is apt to be confused with the Common Blue—its extremely variable relative. Each of them has several generations a year, although the latter is frequently called the Spring Azure on account of its abundance when other butterflies are scarce.



From above downward.—American Copper (*Heodes hypophlæas*); male, left, and under side. Tailed Blue (*Everes comyntas*); male, left, and under side. Common Blue (*Lycaenopsis pseudargiolus*); male, left, and female; below them three showing variations of under side.

THE SKIPPERS

These butterflies, belonging to the family Hesperiidæ, get their common name from their rapid, darting flight. They are, for the most part, small and dull-colored. The sexes of some species differ in the markings on the upper side.

The Silver-spotted Skipper may be recognized by the large silvery spot on the under side of the hind wings. It is extremely pugnacious and will dash at any insect which flies near it.

The Sooty-wing has nearly black

wings, the front with some minute white dots; the female has additional indistinct white dots on the hind wing. The under side is similar but paler.

Numitor is called the Least Skipper because of its small size. Its wings are tawny and dark brown. The front wings are generally dark above but have a light front margin below.

The Tawny-edged Skipper has the front wings in the male tawny with a brown border and the hind wings brown. The female has brown wings



From above downward.—Silver-spotted Skipper (*Epargyreus tityrus*), upper and under sides. Left, Sooty-wing (*Pholisora catullus*); right, Least Skipper (*Ancyloxypha numitor*) Males, left; females, center; under sides, right: Tawny-edged Skipper (*Polites cernes*); Yellow-spotted Skipper (*P. peckius*); Volcanic Skipper (*Catia otho egeremet*)

with a few tawny spots on the front pair, which also have a tawny upper edge in some specimens. Beneath, the front wings are similar but paler; the

hind wings are dull greenish-yellow with an indistinct band of minute whitish dots across their centers.

The Yellow-spotted Skipper has



From above downward.—Mormon Skipper (*Atrytone hobomok*); male, left, and under side; female, left, and the variety *pocahontas*. Little Glass-wing (*Atrytonopsis verna*); male, left; female, center; and under side.

bright yellow spots, as shown in the figure, on a brown ground color. These are brighter and larger on the under side of the wings. Other species have similar colors but the pattern is different.

The Volcanic Skipper is dark brown with a few yellow spots on the front wing. The under side is similar to the Tawny-edged, but darker, with the band on the hind wings more distinct.

The Mormon Skipper has two female forms. The typical one is tawny orange with dark brown borders; the other (variety *pocahontas*) is dark brown with white markings. They are less common than the typical form.

The Little Glass-wing has dark brown wings with whitish-translucent spots on the front pair. The under side is

similar to the Volcanic, but the spots are whitish, not yellow.

In addition to those already mentioned, there are about twenty other species which are rather common in this vicinity, but longer and more technical descriptions than can be given here would be necessary for their identification. They are, for the most part, Hair-streaks and Skippers, small brownish or brown and yellow creatures which flit before our eyes and then, aided by their concealing colors, disappear.

Explanation of Following Table:

E = Egg. L = Larva (caterpillar). P = Pupa. A = Adult. The "calendar" will vary somewhat with locality and weather.

TABLE OF LIFE HISTORIES

NAME	Nov. to March	April	May	June	July	Aug.	Sept.	Oct.	Preferred Food-plant	HAUNTS		
Tiger Swallowtail	P	PA	AEL	LP	AEL	AELP	AELP	P	Wild Cherry	Open Fields and Woods		
Asterias Swallowtail	P	P	AEL	LP	AEL	AEL	AELP	LP	Wild Carrot	Open Fields, Meadows		
Spicebush Swallowtail	P	PAE	AEL	LP	AEL	ALP	AELP	LP	Sassafras	Open Fields, Woods, Meadows		
Cabbage Butterfly	P	PAE	AEL	PAEL	AELP	AELP	AELP	ALP	Cabbage	Gardens, Open Fields		
Mustard White	P	AE	AEL	LPA	AELP	LP	AE	LP	Two-leaved Toothwort	Open Woods, Wood Roads		
Checkered White	P	AE	AEL	PAEL	AELP	AELP	AELP	ALP	Wild Peppergrass	Open Fields, Waste Places		
Falcate Orange-tip	P	AE	AEL	LP	P	P	P	P	Lyre-leaved Rock-cress	Open Woods		
Clouded Sulphur	LP	PA	AEL	AELP	LP	AE	LP	AE	Clover	Open Fields, Meadows		
Little Sulphur	?	?	?	AELP	AELP	AELP	AELP	A	Sensitive Pea	Open Sandy Fields		
Regal Fritillary	L	L	L	LP	PA	AE	AEL	L	Violet	Wet Meadows		
Great Spangled Fritillary	L	L	L	LPA	PA	AE	AEL	L	Violet	Wet Meadows		
Smaller Spangled Fritillary	L	L	L	LPA	PA	AE	AEL	L	Violet	Wet Meadows		
Silver-bordered Fritillary	L	LP	PAE	AELP	LP	AE	LP	AEL	L	Violet	Wet Meadows	
Meadow Fritillary	L	LP	PAE	AELP	LP	AE	LP	AEL	L	Violet	Wet Meadows	
Pearl Crescent	L	LP	AEL	AELP	PAEL	AELP	AEL	AL	Aster	Open Fields, Meadows		
Baltimore	L	L	LPA	LP	AE	LP	L	L	L	Turtle-head	Wet Meadows & Marshes	
Violet-tip	A	A	AEL	AELP	AEL	AELP	LPA	PA	Elm	Open Woods, Lanes, Roads		
Hop Merchant	A	A	AEL	AELP	AEL	AELP	LPA	A	Wood Nettle	Open Woods, Lanes, Roads		
Gray Comma	A	A	AEL	AELP	AEL	AELP	LPA	A	Currant	Open Woods, Lanes, Roads		
Red Admiral	PA	A	AEL	AELP	PAEL	LPA	PA	PA	Nettle	Wood Roads, Lanes		
Hunter's Butterfly	PA	A	AEL	AELP	PAEL	LPA	LPA	PA	Sweet or White Balsam	Open Fields, Meadows		
Thistle	A	A	AEL	AELP	PAEL	LP	AE	LP	PAEL	PA	Burdock	Open Fields, Waste Places

TABLE OF LIFE HISTORIES

NAME	Nov. to March	April	May	June	July	Aug.	Sept.	Oct.	Preferred Food-plant	HAUNTS
Mourning Cloak	A	AE	AEL	LP	AEL	LPAE	AELP	LPA	Willow, Elm	Open Woods, Lanes
Buckeye	A?	A	AEL	AELP	PAEL	PAEL	AELP	LPA	Gerardia	Open Fields & Roads
Monarch	Absent	Absent	AEL	LP	AEL	AELP	LPAE	ALP	Milkweed	Open Fields, Meadows
Viceroy	L	L	LP	AELP	AEL	ELPA	AEL	L	Willow	Damp Places, Meadows
Blue Emperor	L	L	LP	LPAE	AEL	LPAE	AEL	L	Wild Cherry	Lanes, Orchards
Common Wood-nymph	L	L	L	LP	PA	AEL	AEL	L	Grasses	Grassy Meadows
Common Grass-nymph	L	L	L	LPA	PAE	AEL	L	L	Grasses	Wet Meadows, Swamps
Little Wood-satyr	L	L	PA	AEL	AEL	L	L	L	Grasses	Grassy Places, Edges of Woods,
Gray Hair-streak	P	P	PAEL	AELP	PAEL	PAEL	AELP	LP	Pea & Bean Family	Dry Fields
Coral Hair-streak	E	E	EL	LPA	PAE	AE	E	E	Wild Cherry	Open Fields
Banded Hair-streak	L	L	L	LPA	AE	AE	EL	L	Hickory	Wood Roads & Woods
American Copper	P	PA	AEL	AELP	PAEL	AELP	PAEL	AELP	Sorrel	Fields, Roads, Meadows
Tailed Blue	L	PA	AEL	AELP	LPAE	AELP	AEL	L	Round-headed Bush-clover	Open Fields, Meadows
Common Blue	P	AE	AEL	AELP	AELP	AELP	AELP	LP	Maple-leaved Arrow-wood	Open Woods
Silver-spotted Skipper	P	P	AEL	LPAE	PAEL	AEL	ALP	LP	Locust	Open Fields near Locust Trees
Sooty-wing	L	LP	PAEL	AELP	LPAE	PAEL	AEL	L	Pigweed, Amaranth	Waste Places, Roads
Least Skipper	P?	P	PA	AEL	PAEL	LPAE	AEL	P?	Grasses	Grassy Places, Fields & Meadows
Tawny-edged Skipper	P	P	PA	AEL	AELP	LPAE	AEL	LP	Grasses	Grassy Places, Fields & Meadows
Yellow-spotted Skipper	LP	LP	PA	PAE	AEL	LPAE	AEL	LP	Grasses	Grassy Places, Fields & Meadows
Volcanic Skipper	L	L(P?)	(LP?)	PAE	AEL	AEL	L	L	Grasses	Grassy Places, Fields & Meadows
Mormon Skipper	LP	LP	PA	PAE	AEL	L	LP	LP	Grasses	Grassy Places, Edges of Woods, Meadows
Little Glass-wing	L	L	LP	PAE	AEL	AEL	L	L	Grasses	Grassy Places, Fields, Meadows



FOR THE PEOPLE

FOR EDUCATION

FOR SCIENCE