

Colorado Butterfly Subfamily Dichotomous Key

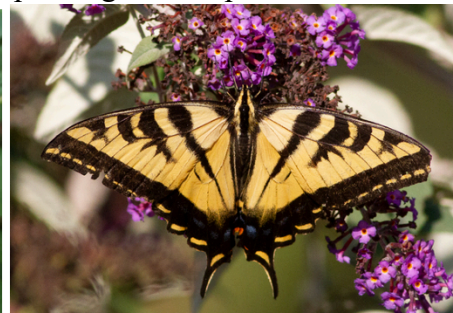
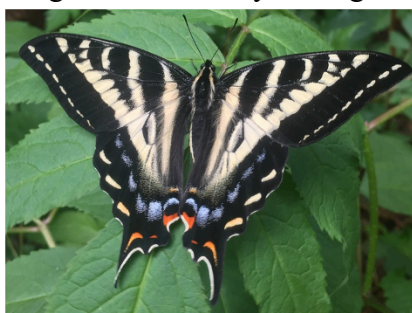
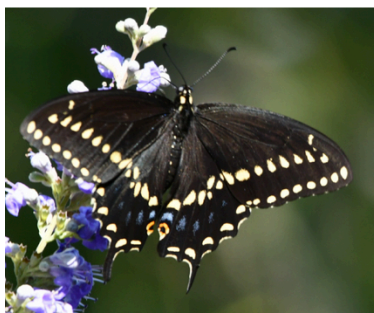
I. How large is the butterfly?

- a. If the wingspan is between 2 – 5 inches, continue to section II
- b. If the wingspan is between $\frac{3}{4}$ of an inch – 2 inches, go to section V.

II. Does the butterfly have “tails” on the hindwings like below?



- a. If yes, congratulations, you have found a swallowtail (Papilioninae) butterfly!
Swallowtails are the largest butterflies and are often yellow, black, or blue. They have “tails” on the hindwings. The tails vary in length depending on the species.



- b. If no, continue to section III.

III. Is the butterfly white with black and red spots?

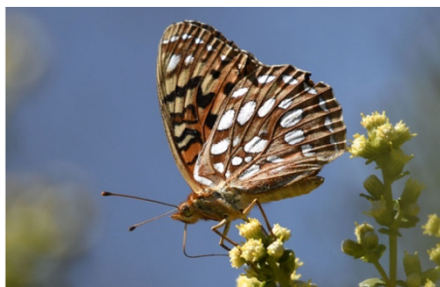
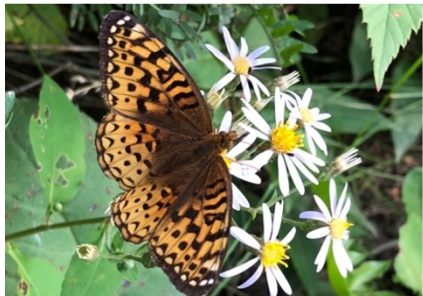
- a. If yes, congratulations, you have found a parnassian (Parnassiinae) butterfly!



- b. If no, continue to section IV

IV. Is the butterfly orange-brown with dark markings and large silvery spots on the hindwing (underneath)?

- a. If yes, congratulations, you have found a fritillary (*Speyeria* or *Boloria* species) butterfly! Fritillaries are orange-brown with lots of thick, dark markings above and often have silvery spots below on the hindwing. See note 1.



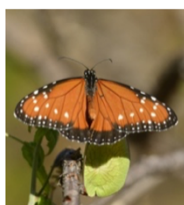
- b. If no, you have likely found a different large butterfly in the brush-footed (Nymphalidae) butterfly family. Check your guide to see if the butterfly is a monarch, viceroy, queen, painted lady, or mourning cloak.



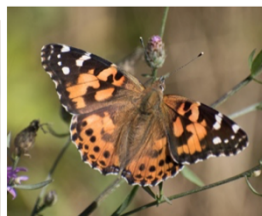
Monarch



Viceroy



Queen



Painted Lady



Mourning cloak

V. Are the antennae hooked like in the diagram below?



- a. If yes, congratulations, you have found a skipper (Hesperiidae) butterfly! Skippers are small, have short, stout bodies, and their antennae are hooked.



- b. If no, continue to section VI.

VI. Are all 6 legs visible (three legs are visible on each side)?

- a. If yes, continue to section VII.
- b. If no, congratulations, you have found a small butterfly in the brush-foot (Nymphalidae) family! Go to section XII for further identification.

NOTE: If it is hard to tell if all six legs are visible on the butterfly, try going through each pathway (go to both sections VII and XII) to try and identify your butterfly.

VII. Is the butterfly mostly solid white, yellow, or orange?

- a. If yes, congratulations, you have found a butterfly in the whites and sulphurs family (Pieridae)! Continue to section VIII for further identification.
- b. If no, congratulations, you have found a butterfly in the gossamer-wing family (Lycaenidae)! Go to section IX for further identification.

VIII. Does the butterfly have a black border on the wings (either solid or with small spots in it) above?

- a. If yes, congratulations, you have found a sulphur (Coliadinae) butterfly! Sulphurs are usually orange or yellow in color (females can be white), have a black border on the forewings, and often have a single black dot on the forewing. See note 2.



- b. If no, congratulations, you have found a white (Pierinae) butterfly! Whites are mostly white, often with black or grey markings above. Whites may also have grey or black tips on the forewings. They can have visible yellow, black, or grey veins below, especially on the hindwing. See note 3.



IX. Is the underside of the butterfly light grey or grey-tan with rows of black or light brown spots (often white-ringed)?

- a. If yes, continue to section X.
- b. If no, go to section XI. See note 4.

X. Is the butterfly some shade of blue above/does it have a blue overlay (especially close to the body)?

- a. If yes, congratulations, you have found a blue (*Polyommata*) butterfly! Blues are usually some shade of blue (ranging from bright blue to blue-grey to blue-violet), with females being brown or grey with a blue overlay. Sometimes, only the basal area next to the body is blue. Some blues also have a row of submarginal orange spots underneath, like the Melissa blue. Many blues have black borders above (vary in thickness) and some can have little tails on the hindwings. See notes 4, 5 and 6.

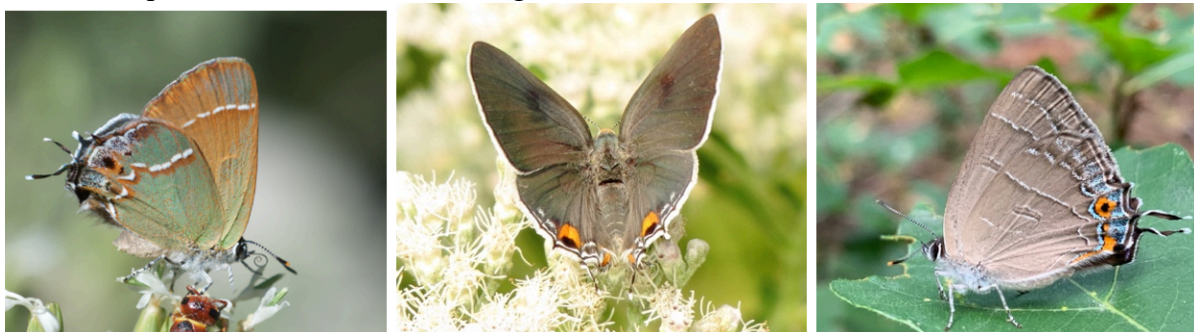


- b. If no, congratulations, you have found a copper (*Lycaeninae*) butterfly! Coppers are usually red/orange with black dots above and grey with black dots below. The black dots underneath may be very small. Coppers can also be purplish or brownish above and can have orange forewings below. Some coppers have little tails on the hindwings. See notes 5 and 6.



XI. Does the butterfly have one or more little tails on its hindwings?

- a. If yes, congratulations, you have found a hairstreak (*Theclinae*) butterfly! Hairstreaks are usually dark grey or brown above and green, grey, or green-brown below with small tails on the hindwings (can be very small in some species). Many have a white postmedian line on both wings below. See note 6.



- b. If no, congratulations, you have found an elfin (Theclinae) butterfly! Elfin are usually brown or dark grey above and are commonly reddish-brown or grey-brown below. They also often have a more patterned underside than hairstreaks (more lines, dots, and changes in color on both wings than hairstreaks). They do not have tails.



XII. Congratulations! You have found a small brush-footed (Nymphalidae) butterfly!

- a. For a more specific classification, continue to section XIII.
b. If the butterfly does not match any of the options below (wood-nymph, satyr, checkerspot, or crescent), you may have found another small brush-footed (Nymphalidae) butterfly. Check your guide to if it is a comma, red admiral, tortoiseshell, or hackberry emperor.



Hoary comma



Red admiral



California tortoiseshell



Hackberry emperor

XIII. Is the butterfly mostly brown with eyespots (often yellow-ringed and on one or both wings)?

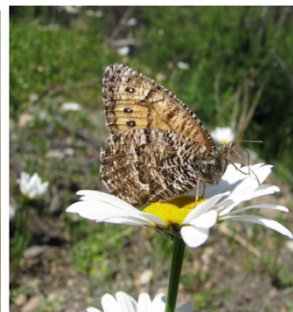
- a. If yes, congratulations! You have found either a wood-nymph or a satyr (Satyrinae) butterfly! Below are some common species in these groups, but check your guide for further classification.



Common wood-nymph



Small wood-nymph



Chryxus arctic



Canyonland satyr

- b. If no, continue to section XIV.

XIV. Does the butterfly have defined orange, cream, or white bands on its hindwing (underneath)?

- a. If yes, congratulations, you have found a checkerspot (*Chlosyne*) butterfly! Checkerspots have light and dark markings (ranging from red-range to light yellow) that make a checkered pattern above and often have alternating orange and cream bands below on the hindwing (except the gorgone checkerspot, which does not have orange on the hindwing below; 3rd image). See notes 7 and 8.

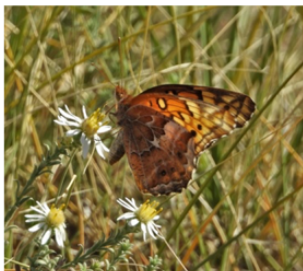


- b. If no, congratulations, you have found a crescent (*Phyciodes*) butterfly! Crescents are orange or yellowish with dark markings above and pale below with sometimes visible crescent shapes along the margin (usually lighter in color than the rest of the wing). See note 7.



Notes

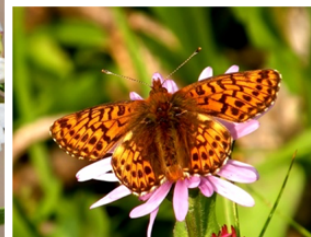
- 1) The variegated fritillary and arctic fritillary do not have silvery spots below. However, they look similar to other fritillaries from above.



Variegated fritillary



Arctic fritillary



- 2) Cloudless sulphurs do not have a black border, but they are still bright yellow like other sulphur butterflies.

- 3) Cabbage white (*Pieris rapae*) butterflies can sometimes look quite yellow on the underside rather than white. The distinct one or two dots and the black/grey tip on the forewing are good identifiers of this species if the individual you found is not white.



Yellowish cabbage whites

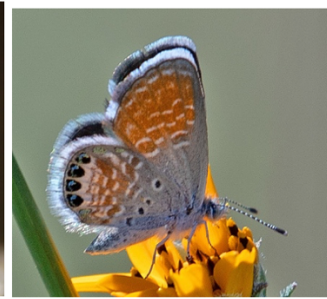
- 4) Some blues do not have the classic black or light brown dots underneath, or may have very small dots, like the hops azure, the marine blue, and the western pygmy-blue. However, these butterflies are still light grey and/or light brown underneath and have blue tints above (blue tint may only be at the basal area of the wings or on the body).



Hops azure



Marine blue



Western pygmy-blue

- 5) Watch out for the blue copper and the western pygmy-blue. The blue copper looks like a blue (Polyommata) species but is in fact a copper (Lycaeninae) species. Only the males are blue, and they have distinct thin black veins above. The western pygmy-blue could be confused with a copper as it has a brownish forewing underneath and appears mostly copper brown above. However, the basal area of the wings is a dark blue, which distinguishes it as a blue and not a copper.



Blue copper



Western pygmy-blue

- 6) Sometimes, hairstreaks do not have small tails on the hindwings (western green hairstreak (also called the canyon bramble hairstreak), Behr's hairstreak, and coral hairstreak, for example). Additionally, Behr's hairstreak and the coral hairstreak look like blues or coppers underneath as they are greyish below and have white-ringed black spots. Above, Behr's hairstreak is orange with dark margins and the coral hairstreak is dark brown. Underneath, both are often more brownish-grey (unlike most blues and coppers that are grey or white-grey underneath). See below for examples.



Western green hairstreak



Behr's hairstreak



Coral hairstreak

- 7) The gorgone checkerspot is commonly confused with crescents as it does not have orange bands on the hindwing underneath and its forewing is orange underneath, but it is in fact a checkerspot (*Chlosyne*) butterfly. The gorgone checkerspot has zigzag white lines below on the hindwing, like other checkerspots, while crescents have more plain hindwings below.



Gorgone checkerspot

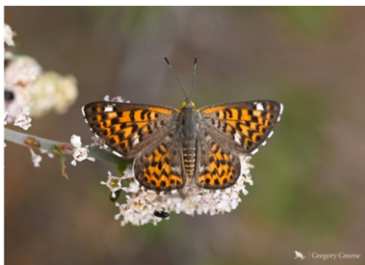


Northern crescent

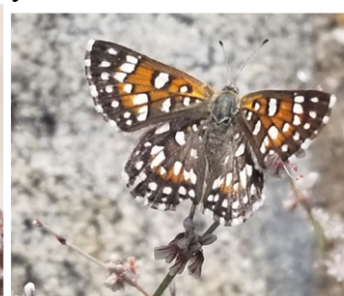


Pearl crescent

- 8) There is one more family of butterflies we rarely see in Colorado – Riodinidae (the metalmarks). There are two species we would see, the nais metalmark and the Mormon metalmark. Both are small butterflies that have dark orange and black/grey coloring above with brown, orange, and white coloring below. They could be confused with checkerspots.



Nais metalmark



Mormon metalmark



Sources

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