

# SULPHURS



Members of the family **Pieridae** are divided into two aptly named groups: the "sulphurs" and the "whites," collectively comprising over 1100 species world wide, but relatively few in the Mojave region. These small- to medium-sized butterflies are easily identified in general by their rounded wings, usually simple black markings, and respective overall colors (yellow to orange, and white). However, they can be difficult to distinguish more specifically due to the many similarities between like species, and the fact that they engage in considerable interbreeding and hybridization.

They are swift and erratic flyers, often staying low to the ground in search of nectar from various flowers where they usually pause only momentarily before heading off to visit another source. Their antennae have prominent clubs at the apices, and the fore legs are fully developed for walking, unlike those of the brushfoot family. As with all butterflies, the pierids 1) undergo a four-stage complete metamorphosis life cycle from egg to larva (caterpillar) to pupa to adult, 2) lack a frenulum that their cousins, the moths, employ to connect fore- and hindwings, which allows both sets to act in unison during flight, and 3) are diurnal.

The tiny, smooth, tubular caterpillars are generally various shades of green, usually with lengthwise stripes, and pupate in a chrysalis attached by silk to a plant, and secured by abdominal hooks.



# Family PIERIDAE (whites)

## Checkered White (*Pontia protodice*)

### Measurements:

Average: Length: ~1" Wing Span: 1.5"

### Distinguishing Field Characteristics:

small size; furry, bluish-gray body; dorsal wings white with dark markings (variable by gender); **(m)** several dark spots on dorsal forewings (none on hindwings); pale checkered pattern on ventral hindwings; **(f)** larger size, more extensive markings (brownier); ventral hindwings white with brownish-yellow veins; short-day form (spring and fall) with gray-green veins

### Notes:

common; colonial (female emigration to new areas driven by male population density); found in grasslands, fields, disturbed areas, deserts, etc., in urban and rural locations mostly in southern US (CA to FL) and MEX, migrating north to central CAN (notably scarcer in Pacific nw and New England); female lays singular eggs primarily on wild members of the mustard family (**Brassicaceae**); finely hairy caterpillar (green with 3 broken, longitudinal, yellow lines; dark dots) feeds on leaves of host plant, absorbing mustard oil that makes them distasteful to most predators; adults, on nectar of various flowers (composites, mustards, etc.); aka **Southern Cabbage Butterfly**; 2-3 generations per year; adult lifespan ~10 days; seen flying spring to fall

Mojave presence: native/migratory

### Comments:

I found this individual enjoying a tasty rabbitbrush on a fine September afternoon at the entrance to **Pipe Spring National Monument** near Fredonia, Arizona, in 2021. While observed at various locations in the Mojave region, such as Las Vegas, Mojave National Preserve, and Death Valley NP, the only one I have photographed so far in the area is the one pictured above near the Hoover Dam Lodge in the

**Lake Mead NRA.**

male



minimal markings

Hoover Dam Lodge; LMNRA

Photo: Alan Schmieger



caterpillar

female



bolder markings

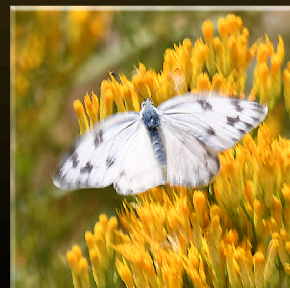


Hoover Dam Lodge; LMNRA



inspecting a thistle

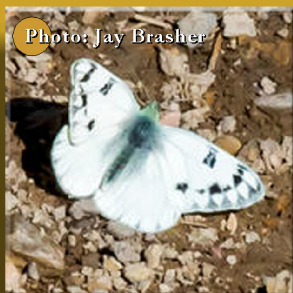
N. Timp Point; GCNP





# Family **PIERIDAE** (whites)

## Western White (*Pontia occidentalis*)



### Measurements:

Average: Length: ~.75" Wing Span: 1.75"

### Distinguishing Field Characteristics:

small size; furry, bluish-gray body, whitish abdomen; dorsal wings white with black markings (usually paler towards the margins, though darker overall in fall); ventral hindwings with yellowish to greenish veins (more pronounced in females) and small central **yellow bar**; dark antennae knobs tipped with white; pale eyes;

### Notes:

common locally; found in grassland to mountain habitats in western NA from Pacific coast east to the Great Plains, southern CAN south to northern AZ/NM/TX (isolated populations in AK, MI, MO, CAN, etc.); female lays singular eggs on plants of the mustard family (**Brassicaceae**); caterpillar feeds on flowers, buds, fruit of host plant; adults, on nectar of various flowers; 1-2 generations per year; adult lifespan ~10 days; low, erratic flight seen June to July in north of range, May to August in south

Mojave presence: native

### Comments:

It is notoriously difficult to identify the various "whites" in the field with any certainty, as they are fast, erratic fliers that don't usually pause at flowers for any significant time to make positive identification easily ascertained--or even to get good photos of! Therefore, it is completely understandable for an observer to have the tendency is to assume all are **Cabbage Whites**, the most common of the group. Considering sexual dimorphism and the numerous pattern variations within each species, one needs to take many photos of specimens from varying angles, poses, and lighting, then examine them closely on a computer screen at home. However, many species are somewhat restricted by range, so that detail can eliminate potential contenders.

The one above from **China Ranch** near Tecopa Hot Springs, CA, in May of 2017, is the only example that I know I've witnessed and photographed. Though it's quite likely I've seen others, by default I've assumed they were all the forementioned cabbages, having not studied butterflies in general--or the whites more specifically--until later in life. It's always a bit of a thrill to discover that what you thought you had seen, turned out to be something else entirely, such as this Western White.



China Ranch; Tecopa Hot Spgs, CA



China Ranch; Tecopa Hot Spgs, CA



# Family PIERIDAE (Sulphurs)

## Dainty Sulphur (*Nathalis iole*)

### Measurements:

Average: Length: ~.5" Wing Span: 1"

### Distinguishing Field Characteristics:

small size; furry olive-green body; lt green eyes; antennae tipped with black clubs; **elongated forewings**; ventral wings yellow to olive green (depending on season); dorsal wings: 2 **black spots** on **ventral forewings**; **(m)** yellow with blackish markings; orange oval scent glands (**androconial spot**); **(f)** orange-yellow with more prominent markings

### Notes:

common; widespread; found in fields, meadows, disturbed areas, etc., from SA north to southern US (CA east to FL), migrating annually as far north as CAN in warmer months; female lays singular eggs on leaves of plants mainly in the sunflower family (**Asteraceae**); caterpillar (hairy, green, yellow or purple stripes) feeds on leaves of host plant; adults, on nectar of variety of flowers, mainly of the sunflower family; smallest of the family in NA; aka **Dwarf Yellow**; 2-3 generations per year; adult lifespan ~10 days; seen flying low to ground April to October in the northern part of its range, year-round in southern areas

Mojave presence: migratory

### Comments:

While widespread and common locally, this small butterfly is a rather rare visitor to the Mojave Desert. Sightings have been recorded in such places as near **Death Valley NP**, Kingman, the **Mojave National Preserve**, and various wetlands areas around Las Vegas, including the **Henderson Bird Viewing Preserve** (center right), **Clark County Wetlands Park**, and Corn Creek in the **Desert NWR**. The unexpected visitor to Dolan Springs (bottom right) was photographed in October of 2022.



South Rim; Grand Canyon NP

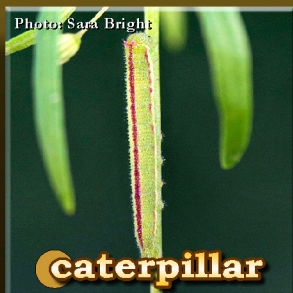


Photo: Sara Bright



county rd 1572; Cline, TX



HBVP; Henderson, AZ



Dolan Springs, AZ



# Family PIERIDAE (Sulphurs)

## Orange Sulphur (*Colias eurytheme*)

Measurements:

Average: Length: .75" Wing Span: 2"

Distinguishing Field Characteristics:

medium-small size; furry gray-green body; green eyes; **white spot** on **ventral hindwing** surrounded by dark red inner ring and orange outer ring; dorsal wings: **(m)** yellow, blended with **orange**, wide dark border, single black ring; **(f)** yellow, blended with **white**, irregular dark border with dark spots

Notes:

very common; widespread; ranges throughout NA in fields, meadows, roadsides, lots, etc.; female lays singular eggs on top of leaves primarily on plants of the pea family (**Fabaceae**), especially alfalfa, clover; caterpillar feeds at night on leaves of host plant (sometimes considered a pest in alfalfa fields); adults, on nectar from variety of flowers; aka **Alfalfa Butterfly**; up to 3 generations per year in northern part of range, 4-5 in the southern; adult lifespan 1-2 weeks; flies March to November depending on region; one of the most common butterflies in NA

Mojave presence: native; uncommon

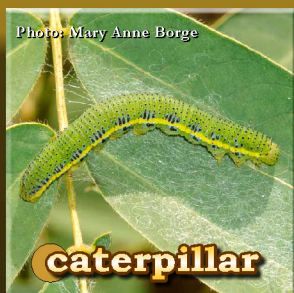
Comments:

While very common and widespread nationally, these butterflies are much less common in the Mojave region. For the most part, they are restricted to limited areas in Las Vegas, the Spring Mountains and **Red Rock Canyon NCA** to the west of the city, plus scattered sightings in **Death Valley NP**, the **Mojave National Preserve**, and elsewhere.

I encountered this little beauty while on a camping trip with some friends from **Vegas Overland Group** to North Timp Point on the north rim of **Grand Canyon National Park** in September of 2021. The one on the left is inspecting a rabbitbrush, while the one on the right enjoys a thistle. Both plants are very common in the fall at this location.



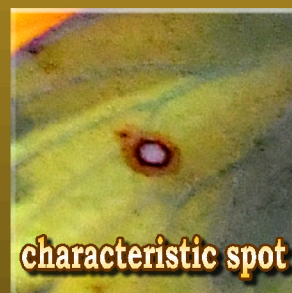
Hoover Dam; Lake Mead NRA



Kingman, AZ



N. Timp Point; Grand Cyn NP



Hoover Dam; Lake Mead NRA



Kingman, AZ





# Family PIERIDAE (Sulphurs)

## Desert Orangetip (*Anthocharis cethura*)

### Measurements:

Average: Length: .5" Wing Span: 1.25"

### Distinguishing Field Characteristics:

small size; furry black body; sexually monomorphic; dorsal wings white to light yellow, dark tips, large orange sub-marginal patches on forewings; ventral hindwings with scattered green patches

### Notes:

uncommon; encountered in desert lowlands of the sw US from CA east to w TX, and NV south to nw MEX in arid, rocky habitats (canyons, hills, washes, etc.); female lays singular eggs on buds of plants mainly in the mustard family (*Brassicaceae*); caterpillar feeds on flowers and seed pods of host plant, absorbing toxins that make them distasteful to most predators; adult, on nectar; 5 subspecies; 1 generation per year; adult lifespan about a week or so; may overwinter (diapause) for many years before emerging from chrysalis, awaiting right conditions in otherwise harsh desert environment; fast, erratic flight; flies May to June in northern tier of range, February to April in southern part

Mojave presence: native

### Comments:

While not a common butterfly anywhere in its range, this subspecies (*A. c. mojavenis*), though native to the Mojave Desert region, is even more uncommon. While sparse sightings have been recorded at such locations as [Death Valley NP](#), [Mojave National Preserve](#), [Desert NWR](#), and Las Vegas, Desert Orangetips do occur elsewhere. For instance, I spotted this specimen near Hoover Dam in the [Lake Mead National Recreation Area](#) in March, 2019. More recently, I saw a number of elusive individuals flitting around in February, 2022, in the mountains near Dolan Springs, AZ.

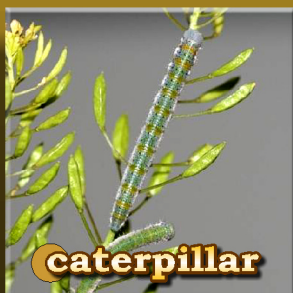
It can be quite a challenge to get good photos of these butterflies, because of their characteristic flight habit: fast and erratic, pausing only momentarily at any given spot. Like some swallowtails, hairstreaks, admirals, etc., male orangetips engage in "hilltopping" as a reproductive strategy. Knowing this, if you want to improve your chances of capturing good photos, research areas where the males are known to congregate while waiting for the girls to arrive.



Hoover Dam Lodge; LMNRA



Hoover Dam Lodge; LMNRA



Hoover Dam Lodge; LMNRA



# Family PIERIDAE (Sulphurs)

## Sleepy Orange (*Eurema/Abaeis nicippe*)

Measurements:

Average: Length: ~1" Wing Span: 2"

Distinguishing Field Characteristics:

medium-small size; furry, dark body with yellowish flanks; yellow eyes; dorsal wings yellow to orange with wide black borders (more sharply defined in males) and **small black bar** near costal (leading) margin of each forewing; ventral hindwings yellow orange in summer, darker in winter (no black margins), 2 spots ringed with orange, and various other small reddish markings

Notes:

common; somewhat gregarious, especially while puddling; prefers low-elevation fields, desert scrub, washes, roadsides, etc., from Central America north to central latitudes of US (occasionally wanders into CAN and elsewhere); female lays singular eggs on underside of leaves of host plant, mainly in the pea family (**Fabaceae**), especially cassia; furry, grayish-green caterpillar feeds on leaves of host plant; adult, on nectar of various flower; 2-5 generations per year; adult lifespan about 10 days; seen flying in summer months in north part of range, year-round in southern

Mojave presence: migratory; uncommon

Comments:

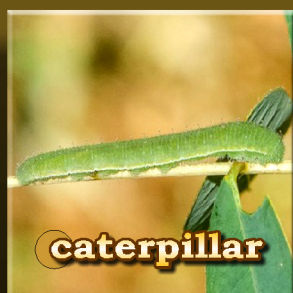
Sleepy Orange butterflies enjoy a variety of autumn flowers, such as the Desert Willow and Black-Banded Rabbitbrush pictured above. With less-abundant choices in the fall, just about any offering will do. These two flower-trotters at North Timp Point on the north rim of **Grand Canyon National Park** in September, 2021, were quite satisfied with thistles, the dominant flowers in the area that time of year.



Dolan Springs, Arizona



Dolan Springs, Arizona



Dolan Springs, Arizona



Dolan Springs, Arizona



Pipe Spring Nat'l Monument

