

**Lepidoptera of North America 16**  
**Butterflies of the Sierra Nevada**



**By Ken Davenport**

**Contributions of the C.P. Gillette Museum  
of Arthropod Diversity  
Colorado State University**



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by

**Ken Davenport**  
**8417 Rosewood Avenue**  
**Bakersfield, California 93306-6151**

**Museum Associate**  
**C.P. Gillette Museum of Arthropod Diversity**  
**Department of Agricultural Biology**  
**Colorado State University**  
**Fort Collins, Colorado 80523-1177**

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**Front cover: Indra Swallowtail, *Papilio indra* Reakirt**

**Image courtesy of Paul A. Opler,  
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# **BUTTERFLIES OF THE SIERRA NEVADA IN CALIFORNIA AND NEVADA.**

**By Ken Davenport**

**Museum Associate, C. P. Gillette Museum of Arthropod Diversity, Colorado State University.**

**Abstract:** This publication covers the butterfly fauna of the Sierra Nevada mountain range in eastern California and a small area of the Carson Spur in western Nevada. At present (2019), 192 species, 104 subspecies and 15 segregates are known to have occurred within the range at least twice. Five additional species have been recorded at least once in the Sierra Nevada. This publication covers distributions of these butterflies within the Sierra Nevada and three National Parks, their habitats, flight periods and taxonomic issues based on current knowledge.

## **THE SIERRA NEVADA**

The Sierra Nevada occupies 28,000 square miles and runs 400 miles from north to south and varies from 50 to 80 miles wide at different locations. The range was primarily formed by block faulting and volcanic activity that raised granitic and other volcanic rocks to elevations along the Sierran Crest (Hill, 1975; Huber, 1989 and Matthes, 1930) that has thousands of summits over 10,000' elevation and ten peaks that exceed 14,000' and several others over 13,000'. Rivers and glaciers have cut deep canyons on both the west and east slopes and there are many volcanic domes and monoliths, with Half Dome a favorite of those visiting Yosemite Valley. Water has washed sedimentary soil down the slopes to form valley foothills and glacial moraines. The range is filled with scenic mountains, impressive waterfalls and a wide range of plant communities and scenic wonders.

There are about 20 rivers that drain the west slope of the Sierra Nevada and provide water to the San Joaquin Valley and California. Some major rivers include the American, San Joaquin, Feather, Kings, Sacramento, Tuolumne, Merced, Kern, Stanislaus and Kaweah Rivers. The Little Walker and Owens Rivers drain the east slope of the Sierra Nevada but those streams end up in lakes in the Great Basin or their water is diverted to Los Angeles.

There are three National Parks that draw millions of visitors every year which include Yosemite, Sequoia and Kings Canyon National Parks covered with trails, impressive waterfalls, forests, rivers and sheer granite cliffs thousands of feet high, Giant Sequoia Groves and a wide variety of plants and animals, including a rich butterfly fauna inside and outside the Parks.

The highest peaks in the Sierra Nevada include Mt. Whitney 14,505', the highest peak in the lower 48 states, Mt. Williamson 14,379', North Palisade 14,252', Mt. Sill 14,248', Mt. Russell 14,094', Split Mountain 14,064', Mt. Langely 14,032' right next to Mt. Whitney, Mt. Tyndall 14,025', Mt. Muir 14,018', Middle Palisade, 14,018', Mt. Lyell 13,114' and Mt. Dana 13,057',

the latter two the highest mountains in Yosemite National Park with Mt. Whitney located in Sequoia National Park. There are some glaciers in the range, including the Palisades Glacier west of Big Pine by North Palisade and Middle Palisade. The formation of this mountain range has resulted in a gradual increase in elevation on the Sierra Nevada west slope to the Sierran Crest composed of very high mountain peaks, subalpine meadows and cold clear water streams and a great many high elevation lakes. Then there is an abrupt steep drop downwards on the east side of the Sierra Nevada. This situation limits where mountain passes can go. Walker Pass near the south end of the Sierra Nevada is only 5250' and the highest elevations in Kern County are less than 9000', so there is very little Canadian Life Zone and no Hudsonian or Arctic Alpine Life Zones in Kern County, so the high elevation Sierra Nevada fauna is absent in that area. The south end of the Sierra Nevada in Kern County is seen from Highway 14 in the Cantil area and that area north to Highway 178 (the Walker Pass Road to Weldon and south along the east slope of the Piute Mountains, a subrange of the Sierra Nevada, is dominated by the Mojave Desert plant community and a mix of Sierra Nevada montane butterflies and Mojave Desert butterfly species. The Mojave Desert ranges north along the eastern side of the Sierra Nevada to about Whitney Portal east of Mt. Whitney and west of Lone Pine in Inyo County, then replaced by Great Basin Desert north of there.

The Sherman Pass Road travels east from the Kern River near the bridge south of Johnsondale has a scenic turnout at Sherman Pass summit at 9200' where one can see the Mineral King area in Sequoia National Park to the north, Olancha Peak and Mt. Whitney to the east and northeastern, and Kennedy Meadows to the southeast. From Sherman Pass, the road then goes eastward, then southward through Kennedy Meadows to the Chimney Peak Road, then east down the very dry barren looking Nine Mile Canyon to the Mojave Desert at Hwy. 395. Some species of the High Sierra begin to appear above 8000' in the Sherman Pass area and over 120 species of butterflies occur in the Sherman Pass area. Several Mojave Desert species including *Megathymus yuccae martini*, *Anthocharis cethura hadromarmorata*, *Euphilotes mojave* and *Apodemia mejicanus deserti* occur in lower Nine Mile Canyon along that road in April.

No paved roads access Sequoia or Kings Canyon National Parks from the east side of the range and no paved roads reach the west slopes of the very high country either. The only access to the really high peaks in those Parks is by trail and back packing. Conversely, many roads access the west side of the Sierra Nevada but few of those reach the Sierran Crest.

The first Sierra Nevada Pass with a paved road north of Walker Pass on the east side of the Sierra Nevada to completely cross the range is Tioga Pass at 9943' which enters Yosemite National Park from Lee Vining and scenic Mono Lake. This area is readily accessible to lepidopterists (unless the road is closed because of snow, ice or rockslides) as many square miles of National Forest are outside of the Park. The next Pass to the north is Sonora Pass at 9,624' which readily accesses the Arctic-Alpine Zone with relatively easy hikes short distances from a parking lot and trailhead at the Pass.

Other east slope accessible Passes with paved roads further north include Carson Pass at 8574' and Ebbetts Pass at 8736' but Donner Pass 7056' has a well-known butterfly fauna based on

published reports by Thomas and John Emmel and Arthur Shapiro and his University of California, Davis students.

A small part of the Sierra Nevada, the Carson Spur, is important because many Sierra Nevada species enter Nevada only in Carson City, Douglas and Washoe counties. Mt. Rose at 8911' is the highest peak there, but being further north and with a wetter and colder climate, several boreal butterfly species are found there.

The northern part of the range in Sierra and Plumas counties lacks the tall peaks found in the High Country of the Sierran Crest with the highest peaks at about 9000' elevation, so many species of butterflies found on mountains above 11,000' do not occur in those counties, but are replaced with other desirable species not found to the south. Paul Opler conducts regular butterfly counts in the Yuba Pass area and kindly shared those records in the species accounts butterfly records section.

## **METHODS OF ASSEMBLING THIS INFORMATION AND REPORT.**

The author has been actively collecting and observing butterflies in the Sierra Nevada since 1962. On a 1963 trip as a young boy to Yosemite National Park I was impressed with the butterfly faunal collection on display at the Yosemite Museum and on a return trip to Yosemite Valley in 1970, I would see Garth & Tilden's 1963 Yosemite Butterflies book in a book and gift store which I bought; this book really ignited my interest in butterfly faunal papers and butterfly taxonomy which included subspecies.

I would later do a similar study of the butterflies of Kern County after meeting Jim Brock in Bakersfield where we both lived in 1975 (and where I still live); Jim taught me a lot about the butterflies of that region, which included many butterflies of the Sierra Nevada fauna. Then in 1983, the Lepidopterists' Society published my scientific paper on the butterflies of Kern County, later writing a much more detailed report about the butterflies of Kern and Tulare Counties (174 species occurred in those two counties) which included many Sierra Nevada species published in several editions in 2003, 2008 and 2014 by Colorado State University. The author also wrote a lengthy publication on Yosemite Butterflies, an area which I visited frequently inside National Forests outside the Park. That work was published by The International Lepidopterist's Survey in two editions in 2004 and 2007 which covered the text of 171 butterflies known to occur in the Yosemite region, and a Color Plates issue in 2007 with Norbert Kondla, C. Howard Grisham and Howard Grisham that illustrated all known butterfly species and subspecies life size and in color.

In the 1980's and 1990's the author worked with Ray Stanford and Robert Langston in putting together county lists of distributions of Western North American Butterflies, published by Stanford & Opler in 1993, work that would be used later in range maps in many field guides and other publications. We also co-authored a publication keeping track of early and late flight records for all species in the state, some of those used herein for the Sierra Nevada. In 2000, I became the butterfly Lepidopterists' Society Season Summary Coordinator for California,

Arizona and Nevada, responsible for keeping county lists up-to-date and putting together important records to publish in the yearly report (with help from Kelly Richers who does the moth report and also lives in Bakersfield), I presently live very near Kern Canyon and Hwy. 178 in the Sierra Nevada, 15 minutes away from my home, Kern Canyon Rd.(Old Hwy. 178) is three blocks away.

This project could not have been done without help from many others, listed in acknowledgements and how they contributed. Paul A. Opler at Colorado State University at the C. P. Gillette Museum of Arthropod Diversity assisted immensely in my past and current work and helped provide many records that helped cover Sierra and Plumas counties, as well as providing additional records for Sierran east slope localities. Both of us provided many records for Inyo County, a county with relatively few published records for Butterflies. Derham Giuliani was a notable entomologist getting to difficult locations, accessible only by 4-wheel drive vehicles (his work is mentioned in many butterfly descriptions in the Systematics of Western North American Butterflies, some named after him (Emmel, T., 1998)). He collected hard to find or newly discovered butterflies for John F. Emmel, Derham lived in Big Pine 15 miles south of Bishop in Inyo County who made many amazing discoveries in that county and elsewhere, but unfortunately passed away without seeing those records published in the hoped for California butterfly book planned by Thomas and John Emmel and Sterling Mattoon.. He did get to see photographs of *Hesperia miriamae* he collected in Sequoia National Park in the Yosemite Color Plates, which coincidentally were in my car before that work was completed. Those specimens were at the McGuire Center in Florida, Andrew D. Warren provided the photographs. I ran into his neighbor while in the nearby White Mountains looking for butterflies and accepted an invitation to visit him later that day.

I have used much information provided by those many individuals, including personal letters, collection and observational records and emails. The Yosemite Butterflies book by Garth & Tilden was work I built on in my Yosemite Butterflies publication, but Garth & Tilden published many records from inside Park boundaries while I focused on areas outside the Park, mostly in National Forests. In the present publication I re-share many of Garth & Tilden's records from inside Yosemite National Park (a publication still available from BioQuip), this time adding what county those locality records were from, finding that impossible at times, for example, there are at least four Eagle Peaks in the Yosemite area.

In choosing what records to use, I reviewed past Season Summaries going back to 1963 which later from 1975 on became much more important detailed reports under Robert L. Langston for many years through 1999. I also examined all literature covering the Sierra Nevada that I could find in scientific journals, field guides, faunal and regional reports and books, names Catalogues and the hardest of all, the huge Systematics of Western North American Butterflies (T. C. Emmel, editor, 1998) and Pelham's Names Catalogues of 2008 and 2019 and many others including the NABA common names Catalogue. Not everyone uses the same names lists and few people REALLY know subspecies so accepting reports meant evaluating the credibility of the reporters and converting what names they reported with what is actually there at those localities or to Pelham's names list with a few exceptions.



I am also the Butterflies and Moths of North America (=BAMONA) website Coordinator for California and Nevada (and Arizona) so some very usable records come from that source but the use of nick-names for some submitters is a matter of concern and in my experience, a very high percentage of butterflies are misidentified by submitters. This is also an issue with other websites and I did not have time or access to navigate all of those for records, that is primarily the responsibility for those who had significant records to report them to those who actually keep such records. Nor are butterfly counts in themselves a good source of records, unless an observer who is credible can provide specific localities, dates, a good quality photograph or a specimen. I like butterfly counts and have participated in the various Southern Sierra Nevada counts in the Piutes, Greenhorn and Sherman Pass/Sequoia National Monument Counts where collecting is permitted. I have also shared in the Yosemite Count several times where I have considerable experience east of Tioga Pass outside the Park, but counting on work from John S. Garth, Robert L. Langston, Allan Oakley Shields and J. W. Tilden for records inside the Parks.

A disturbing trend that I see at present (2019) is that many submitters put a dot on a map but fail to give a locality or county. Such a record is of little real scientific value. But there are several very capable butterfly watchers, butterfly count participants and submitters who do give their real names and have provided many outstanding records. Kristie Nelson is one such person, she lives near Lee Vining east of Yosemite near Mono Lake and has filled in the early and later in the season observations needed from that area. Fred Heath (NABA Director) and Mary Klinkel have done a lot to report important butterfly counts with needed specific information, confirmation photos and other important records of NABA members. Such records were often used in this publication and in the annual Season Summaries.

A number of private collectors have made photo or collection data available to the author and I have used many such records from butterflies in my private collection. I have collected butterflies extensively in the Sierra Nevada from southwest of Yosemite National Park and the Sonora Pass Road north of Yosemite with a few trips north of the Sonora Pass Road to Carson Pass and Auburn east of Sacramento.

Much information about Donner Pass butterflies came from Thomas and John Emmel and Arthur Shapiro and his students. The high country in Fresno County was covered in an old report by Lloyd Martin and Charles Ingham (1930). The author collected inside Sequoia and Kings Canyon National Parks between 1985 and 1993 (two years I failed to get a permit in time to collect before the season was over), but did not cover the extensive high peaks accessible only by lengthy backpacking trips, but records were provided by those that did hike those trails. John H. Masters wrote an informal report on butterflies of the Mineral King Area, before it was added to Sequoia National Park with specific localities but sadly, lacking specific exact locations or dates. The Yosemite Butterfly Counts are organized by Sarah Stock and Karen Amstutz, Yosemite National Park Biologists and several very knowledgeable group leaders including James R. Mori. Count localities included Tuolumne and Dana Meadows, Gaylor Lakes and other localities inside and outside the Park.

The boundaries of the Sierra Nevada run from Kern County in the south excluding the Tehachapi Mountains north into Plumas County south of Lassen National Park as the Volcanic

Mt. Lassen is considered part of the Cascade Range. The western edge covered here includes the Sierra Nevada foothills which often include sedimentary soils and rock washed out of the Sierra Nevada over the ages and on the east side of the Sierra Nevada up Hwy. 14 and US 395 to the Lake Tahoe area and the Carson Spur then north up the east sides of Sierra and Plumas counties. Trying to identify exactly where the Sierra Nevada starts and where it ends can be very subjective and has been very problematic in placing records and some records may be technically pushing the limits beyond actual boundaries, an issue shared by Garth and Tilden in their survey of the Yosemite region.

Since the author's experience is primarily south of the Sonora Pass Road, this work's coverage has been supplemented by Paul Opler who has provided many additional records from Sierra and Plumas Counties and on the east slope of the Sierra Nevada. It was my hope that Emmel, Emmel & Mattoon would have completed their long-awaited California book, which Thomas Emmel told me in May 2019 just before his death that he planned to take the photographs for that work in the fall of 2019. We also awaited the completion of the late George T. Austin's Nevada book which undoubtedly had much information about the fauna of the Carson Spur. It is my understanding both works were written, but lacking color plates, so we may yet see their texts in print.

## **ACKNOWLEDGMENTS.**

Likely, over one hundred individuals have contributed records or assistance in putting together this publication and much of their work can be seen in their records in the species accounts or in the cited literature. Individuals who helped included Paul Opler who helped with providing records and reviewing (along with Boris Kondratieff) this publication, not an easy task with the names complexities and changes and reviewing such a lengthy publication for accuracy and errors. Individuals who I wish to acknowledge include:

**Amstutz, Karen.** Yosemite National Park Wildlife Biologist knows her butterflies and helps organize the Yosemite Butterfly Counts.

**Austin, George T.\*** Was a major contributor to the Yosemite Text publication who contributed many Sierra Nevada records from both California and Nevada and he also was a reviewer of the Yosemite Text publication. He was not limited to Nevada.

**Brock, Jim.** Introduced me to the scientific community, mentored me and helped me to appreciate the importance of plant communities and habitats.

**Burns, John M.** Smithsonian Institution. Helped with *Erynnis* and *Pyrgus* (now *Burnsius*) determinations.

**Donahue, Julian.** Was able to get me appointed as a Field Associate of the Natural History Museum at Los Angeles which allowed me to get collecting permits in Sequoia and Kings Canyon National Parks. I continued as an associate for that museum for nearly 20 years. Many of

my Sierra Nevada butterflies, including many from the National Parks are in that collection with NPS labels.

**Drier, Jim.** Provided many records for Nevada that are in or close to the Sierra Nevada.

**Emmel, John F.** Provided considerable information about the California butterfly fauna to me over more than 40 years through many letters and emails, and his published work.

John also reviewed my Yosemite Text publication.

**Emmel, Thomas C.\*.** Provided information and encouragement to me in my work on the states butterflies and contributed greatly to the literature cited herein.

**Garth, John S.\*** His work on Yosemite Butterflies contributed greatly to our knowledge of the Sierra Nevada and sparked my interest in faunal studies.

**Gatrelle, Ron.\*** The former Director of The International Lepidopterists' Survey who helped review my Yosemite Text publication and published that major work.

**Giuliani, Derham.\*** An incredible explorer and hiker able to access many hard to get to locations. We did trade emails (he used a computer at the local library). He did not keep a personal collection, but was intensely interested in knowing the significance of what he found and seeing his discoveries in print.

**Graber, David M.** Sequoia/Kings Canyon National Parks Research Biologist who I received encouraging letters from while doing scientific research and collecting inside those Parks, information now published in the Kern and Tulare counties, California publication and in this work.

**Grey, L. P.\*** Provided information and records (many by Tom Blevins and others) on fritillaries within Kings and Sequoia National Parks.

**Grisham, Charles and C. Howard Grisham.** This father and son team did much of the photographic work on the Yosemite Color Plates issue, accessible on-line.

**Heath, Fred.** NABA Director. Helped provide specific butterfly count data and other records that made those records scientifically valuable.

**Kondla, Norbert.** Did most of the work on the Yosemite Color Plates publication. Many genus names have changed, but most of the Sierra Nevada butterflies are well represented in color and at life size in that publication.

**Kondratieff, Boris.** A major reviewer for Colorado State University who has had to work hard with two (actually more if one counts editions) of my previous lengthy publications, setting the stage for this publication.

**Lane, John.** Provided information on Juniper and Cedar hairstreaks and provided several records of several species.

**Langston, Robert L.\*.** Worked as the previous Season Summary Coordinator and one of my mentors, also contributed many Yosemite and Sierran records and on state publications with me on California county lists and flight dates.

**Nordin, Phil.** Provided records for Sequoia National Parks.

**Masters, John H.** Provided information on the Butterflies of Mineral King before it was added to Sequoia National Park.

**Mattoon, Sterling O.:** Few of his countless records have been published, but he often stayed in the Kennedy Meadows area in Tulare County. In 1985 I referred him to Bald Mountain Lookout, an hour drive from there, while we were in the San Bernardino Mountains as a place for *P. indra phyllisae*. Two weeks later, I just happened to be in the Fire Lookout Tower there when he and his wife arrived! He was the first person to find *Strymon istapa* in the Sierra Nevada at Hanning Flat, inspiring me to look for those the past 18 years, with only limited success nearby at Weldon.

**McGuire, William:** Provided information and records on Hesperia.

**Meyer, Richard P.** Provided many butterfly records and personal observations.

**Mori, James R.** One of the leading contributors and information on my Yosemite research who is a major field worker on Sierra Nevada butterflies.

**Nelson, Kristie.** Lee Vining, California. Has helped considerably by observing and providing photographic records of butterflies for the Mono Lake region at earlier and later times of the year before collectors or other watchers arrive to that region.

**Opler, Paul A.:** provided considerable help in this and other Colorado State publications and as a reviewer on those and the Yosemite publication. He contributed considerable information and records used in this publication, and I especially appreciated those Sierra and Plumas County and east slope Sierran records needed to provide balanced coverage of the Sierra Nevada.

**Parsons, David.** Sequoia and Kings Canyon National Parks Wildlife Biologist for his help when under permit from NPS.

**Pasko, John.** A major contributor of records and observations, now getting some of his records published yet again!

**Pavlik, Gary\*.** Contributed records for Sequoia National Park while with Phil Nordin.

**Pelham, Jonathan P.** I wore out his printed 2008 Catalogue and then had to go online to make further adjustments and changes. We had many discussions about names and even took field trips into the Sierra Nevada and in Arizona.

**Pavulaan, Harry:** He became the TILS Director that made publishing the Yosemite Text 2<sup>nd</sup> edition and Yosemite Color Plates issue possible along with Norbert Kondla and the Grishams.

**Pratt, Gordon.** Contributed considerable information on the *Euphilotes* blues and *Apodemia* metalmark complexes.

**Ritter, J. Thomas.** Superintendent of Sequoia/Kings Canyon National Parks, help with collecting permits and facilitation of my research.

**Rubbert, Al.\*** Provided many records and conversations, the first to discover what choice butterflies occurred at Fish Camp, which led to explorations of the Fresno Dome area.

**Scott, James.** He made pertinent comments on names issues and some records in the Yosemite Text publication and provided good feedback on *Pholisora catullus crestar* which we described, the *Hesperia colorado* complex and recommended we treat *Plebejus fridayi* as a species which other reviewers did as well.

**Sekerman, Charles.** \* A day seeing his collection at his home and seeing the butterflies there from the east side of the Sierra Nevada in Inyo County was of great value.

**Seeley, Ellen.** Sequoia/Kings Canyon National Parks Curator at Ash Mountain. Many butterflies I collected in the Parks are in the Parks collection there or at the LACM (Natural History Museum of Los Angeles County).

**Shapiro, Arthur M.** Provided considerable information and records from the Sierra Nevada and Donner Pass and assisted with several scientific papers used in this study. It was Art who brought it to my attention that no one had really yet done a Sierra Nevada publication covering the whole mountain range. The information he provided on the *Satyrium fuliginosa* and *semiluna* issue was of vital importance.

**Shields, Oakley A.** Pioneered the study of *Philotes*, *Euphilotes* and *Philotiella* though using other genus names for the latter two. He contributed much to the Garth & Tilden Yosemite Butterflies book with his many important records. He also reviewed a publication I wrote on *Philotes sonorensis* in the southern Sierra Nevada.

**Smith, Michael.\*** Contributed several records for the Sierra Nevada.

**Stanford, Ray E.** Did considerable work on skippers, range maps and distribution lists and helped review the Yosemite Text publication, and contributed several records.

**Stock, Sarah.** Yosemite National Park Wildlife Biologist who organized the butterfly counts and is involved with a Park database for butterflies. Who else could recruit 65 volunteers for a butterfly count?

**Tilden, J. W.\*** Was co-author of the Yosemite Butterflies book, inspired me with his presentation of *Ochlodes agricola* at a Pacific Slope meeting at the LACM and inspired my interest in studying the butterfly faunas of many places, including the Sierra Nevada.

Many of his records along with John S. Garth are being published again with counties now added.

**Warren, Andrew** provided feedback on several difficult issues related to *Anthocharis cethura*, *Pontia sisymbrii elivata*, the *Hesperia comma* complex and other issues. Many issues discussed in his Oregon publication were also relevant to the California Sierra Nevada.

## **SCIENTIFIC NAMES USED IN THIS PUBLICATION.**

The scientific names used in this publication are in the on-line Catalogue of Butterflies of North America North of Mexico by Jonathan Pelham (2019) which includes both species and subspecies with only a few exceptions. Also used will be common English names including some that predate popular watcher organizations.

Just prior to the completion of this work, genomic DNA work was done by Zhang, Cong, Shen, Opler and Grishin (2019a & b) which when published online resulted in many generic names changes. Those are used herein, but with the more familiar well used names in parenthesis and noted under Taxonomic notes.

Butterflies have considerable variation within species and subspecies and that is why collectors and museums keep series of specimens, to determine ranges of variation, which may overlap other similar looking closely related species.

Many believe subspecies are always isolated from each other but in reality, many subspecies are clinal and populations in-between show mixed characters or blending.

Closely related species may hybridize but remain separate species. Such issues come up in the species accounts.

Some have expressed the belief that separate species should all have readily identifiable field marks that make identification possible with certainty in almost all cases. That would be wonderful if it were true but several butterflies that are blues, metalmarks, fritillaries and others have proven that can be difficult as many such marks are often not visible in living butterflies and some butterflies require actual collections to see all the field marks, genitalic examination or DNA work to be sure of their identity. Several of those occur in the Sierra Nevada.

Many people do not believe in or accept the idea of subspecies and some names lists do not use subspecies for but a few in cases of some well differentiated subspecies or entities that may be species-level taxa. In any case, I will acknowledge very few collectors or watchers are proficient in knowing many subspecies out there and some books that give that information are too big and heavy to take outdoors with you as a field guide or may be very costly to obtain.

Type localities are provided for each named species and subspecies. Those are used to document the locations from which butterflies are described from, important in describing other butterfly populations from other geographic areas and comparing the field marks and colorations of those possibly differing populations. Regional segregates are not named and have no type locality, at least not until they may be formally described and named. Was the Sierra Nevada Range important in recognizing new species and subspecies? Of the 297 taxonomic entities covered in the species accounts, 146 were described from in or very near the Sierra Nevada!

## **TAXONOMIC NOTES.**

It used to be claimed that common English names were constantly changing and that scientific names on the whole are very stable. But in the past 30 years or so scientific names are experiencing many name changes due to type locality issues (the location from which a butterfly is described), some names become synonyms (some other name was applied to something already given a name by someone else) or chemical studies, DNA work or field data or observations can affect our knowledge of butterfly relationships or status. Such issues are covered under each butterfly (species or subspecies) when such has been applied in recent years. References are often cited in these cases.

## **DESCRIPTIONS:**

One publication about the butterflies of the Sierra Nevada provided extensive lengthy information about descriptions for species, which often did not match what those species look like in the Sierra Nevada, hence the benefit of having some knowledge of subspecies.

I usually included some brief comments on how subspecies differ from each other in cases where those are well defined and the formal original descriptions are reasonably simple to understand. Some are very complex and some subspecies are not all that different from each other. In those cases, it may be best to consult the references provided.

Most readers are probably already familiar with most species found in the Sierra Nevada and use regional publications or field guides to identify different species. Field guides usually don't cover many subspecies, so comments about those are made in the species accounts, often under taxonomic notes.

## **COLLECTION, PHOTOGRAPH and SIGHT RECORDS.**

Many such records used in this publication are published records taken from the annual Season Summaries, regional books, scientific papers, museum collections, information submitted to the author, personal collections or sight records (the latter often necessary inside National Parks). Not all reported records are credible (not identified by a competent observer, or a damaged specimen or photograph lacking enough field marks to identify with assurance) and because our knowledge of butterflies is progressive, even experts (including me) reported some "species" that may not have been what they believed they were. Garth & Tilden (1963) knew nothing about Friday's Blues, Heather Blues or California Crescents in the Yosemite area. In our day, a report of a Square-spotted Blue (*Euphilotes battoides*) in California could be one of many species recognized in the Pelham names list, but not recognized in what is allowed in their butterfly count names list.

The purpose of listing records in this publication is to support the inclusion of species or subspecies into the Sierra Nevada faunal list and to identify where in the range these occur for those with a scientific interest or those wanting to find butterflies of interest on their visits to the

Sierra Nevada. This is not always done for common widely distributed species. In other cases, more records are given for very rare or endemic species or for butterflies not commonly known to stray or occur in the range.

It should be added that some records used were incomplete, lacking specific localities (2 miles south of Hwy. 108.(one hundred miles long in the Sierra) is not acceptable (an accidental error of omission?) and I chose not to use that Tuolumne County record for *Anthocharis lanceolata* even though published in a Season Summary) specific dates or years, even in some Season Summaries or scientific papers that just used Roman numerals to indicate a month and some collectors or photographers may not be known, an organization or museum credited for it. Some such records provided important localities, at least and were kept in the report. We are living in times when many people want to keep their names confidential or to keep productive localities for rare butterflies secret, for conservation purposes, those requests honored here. Many people are using GPS Coordinates and that is fine, but I believe specific locality information that provides the names of cities, mountains and other places remains important. Location is about 50% of making identifications for many butterflies.

Having actual records in this publication may be what many will consider to be the most important source of information for them. Records in this publication includes collected butterflies, photograph documented sightings and at times, sightings without scientific documentation, often based on the credibility of the one reporting it or whether the sighting is in a Preserve or a National Park where collecting is not allowed.

### **NATIONAL PARK RECORDS:**

Yosemite, Sequoia and Kings Canyon National Parks are in the Sierra Nevada and lists for these National Parks were provided in Davenport (2007) and Davenport (2014). However, Garth & Tilden (1963) did not provide county information in their records section and this author used few of their records, instead focusing on new information from surrounding National Forests and the Great Basin. In this publication, I focus more on those older records and add records from my work in and around Sequoia and Kings Canyon National Parks while under permit by the National Park Service (NPS) as an associate of the Natural History Museum of Los Angeles County.

Those collected specimens are deposited at that museum (LACM) or at the NPS collection at Ash Mountain, and I have examined all the butterflies in that NPS collection. I should note that I did very little work on King Canyon National Park and that fauna is poorly known. My research at the time was obtaining data for Tulare County for a Kern-Tulare County publication and not on Fresno County, in which Kings Canyon National Park mostly is located.

Yosemite National Park is currently using an annual butterfly count and accepting records of butterflies seen inside their Park and putting that information into a database.

This is a good opportunity for watchers and photographers to add to the knowledge of what is in the Parks and where, since butterfly collecting is not allowed inside the Parks without special



permits from both the Parks and the State of California (in 2019, at least). Personal collecting (Scientific research requires permits) is generally allowed in National Forests outside the Parks.

## **DISTRIBUTION.**

This includes a list of what counties each species or subspecies is known to occur within the Sierra Nevada and which slope that butterfly may be found and discussions of any unusual status or occurrence issues. The county lists that were given to me for handling my job as Season Summary Coordinator for California only means that species (as understood 20 years ago) is known to occur in that county. My cautionary comment here is that such records may not necessarily occur within the Sierra Nevada, especially in Sierra, Plumas and Yuba counties in California, Douglas and Washoe counties in Nevada. I tried to select localities I knew were Sierran, but some may question the Scossa Ranch in Douglas County as being close enough to the Carson Spur and so on. Most of Washoe County is not near the region covered here and such known records were excluded. I heavily used records by Austin (2008) identified as being in the Carson Range. While the purpose of Austin's book was identifying larval hosts, most records were linked to adult female oviposition or plant association, so adults were flying on dates given unless otherwise noted.

I should add that many new subspecies described in the Systematics of Western Butterflies had poorly known distributions that needed more field work to resolve when they were described and named. That work is not yet completed and there are few people out there very knowledgeable about subspecies to actually do such work. It is also questionable if some subspecies are actually valid and there are several such controversies within the Sierra Nevada fauna considered in this work. Not all subspecies were created equal and you may find that out when trying to figure out similarities and differences. I tried to point out differences between subspecies but some are quite lengthy in the original descriptions and such cases are cited. Such cases make distribution mapping very difficult.

## **HABITAT:**

As noted already, the west slope of the Sierra Nevada tilts upward gradually populated by various plant communities that make up several life zones from Lower Sonoran Life Zone in the San Joaquin or Central Valley to the Arctic-Alpine Life Zone above timberline. Then on the east slope of the Sierra Nevada there is a sharp drop in elevations, life zones are compressed and occur haphazardly depending on localized conditions and not as well developed as on the west slope. Garth & Tilden (1963) discussed the Biotic Province concept which is evident in Yosemite and in the Sierra Nevada. West slope species of the California Biotic Province are often replaced by similar but different species in the Artemisian Province on the east slope of the Sierra Nevada in the Great Basin. Such changes of plants, animals and butterflies are very visible in the Sierra Nevada.

Garth & Tilden also noted plant communities that are visible in the Sierra Nevada which support their own sets of butterfly species found within those plant communities.

Going from west to the east side of the Sierra Nevada one would encounter these plant communities:

1. Valley Grasslands
2. Foothill Woodland
3. Chaparral
4. Coastal Sage Scrub
5. Oak Woodland
6. Mixed evergreen forest, called mixed coniferous forest in this publication
7. Yellow Pine Forest
8. Mixed forest, (non-pure Douglas Fir, Yellow Pine and broadleaf trees below pure conifers
9. White Fir-Cedar Forest
10. Red Fir Forest
11. Lodgepole Pine Forest
12. Subalpine Forest with Mountain Hemlock and White Bark Pine
13. Alpine-Fell Fields - “rock gardens” above timberline.
14. Juniper Woodland (east slope of the Sierra Nevada)
15. Pinyon-Juniper Woodland.
16. Sagebrush Scrub
17. Shadscale Scrub
18. Alkali Sink

Not included in the Yosemite region by Garth & Tilden, plant communities that can be added would be Joshua Tree Forest and the Mojave Desert Plant communities that occur further south in the ranges eastern and southern slopes.

Life Zones found in the Sierra Nevada include the Lower Sonoran Zone found in the San Joaquin Valley up into the Arctic-Alpine Life Zones. I don't include elevations assigned to the Yosemite area by Garth & Tilden because these elevations become higher going southward, lower going further north of Yosemite.

**Lower Sonoran Zone:** Valley Grasslands and the western foothills. Some butterflies found in such areas are *Erynnis tristis*, *Hesperopsis libya joaquina*, *Battus philenor hirsuta*, *Brephidium exilis* and *Cupido comyntas sissona*.

**Upper Sonoran Zone:** This zone includes the Chaparral, Coastal Sage Shrub and Oak Woodland, Digger Pine, California Buckeye, Poison Oak, Chamise and Live Oak. Some butterflies that characterize this life zone are *Erynnis tristis*, *Euphydryas chalcedona*, *Cercyonis sthenele* and *Coenonympha tullia californica*.

**Transition Zone:** This zone transitions the Sonoran Zones and the Boreal Life Zones (Canadian, Hudsonian and Arctic-Alpine Life Zones). Trees include Giant Sequoia, Yellow Pine, Jeffrey Pine, Sugar Pine, Incense-Cedar, White Fir and Douglas-Fir. Azalea, Nuttall Dogwood. Black Cottonwoods occur along streams and Black Oak and Golden Cup Oak occur on valley floors and mountainsides. Butterflies characteristic of this life zone include *Speyeria cybele leto*, *Speyeria hydaspe* and *Speyeria zerene*.

**Canadian Zone:** Red Fir replaces White Fir in the open forest and Quaking Aspen replaces Azalea and Black Cottonwood along the streams. A secondary chaparral of matted Snow Brush, Chinquapin and Huckleberry Oak covers the steeper slopes with Lodgepole Pine invading from its upper margins. Butterflies characteristic of this zone include *Callophrys eryphon*, *Boloria epithore sierra*, *Chlosyne hoffmanni*, *Euphydryas chalcedona sierra* and *Polygonia faunus*.

**Hudsonian Zone:** This zone has forests comprised of Lodgepole Pine and Mountain Hemlock in areas disturbed by tremendous rockslides and glacial cirques. This zone seems characterized by a very short growing season and an abundance of streams and subalpine meadows framed by towering peaks of rock above timberline. Butterflies of this life zone in the Sierra Nevada include *Colias behrii*, *Lycaena mariposa* and in the Tioga Pass area, *Phyciodes orseis herlani*, which may occur lower down in the Canadian Zone elsewhere.

**Arctic-Alpine Zone.** This seemingly barren area above timberline is made up of alpine willows, herbs, heathers and alpine sorrel growing in alpine-fell fields, boulders, talus slides and grassy areas on thin layers of soil among the granite is rich in special butterflies rarely seen at lower elevations. *Hesperia miriamae*, *Chlosyne whitneyi*, *Oeneis chryxus* and the recently recognized *Agriades glandon cassiope* can be found in these habitats. *Parnassius behrii* also inhabits this habitat but can occur lower down in Canadian and Hudsonian Zones in the range as well.

## **FLIGHT PERIODS:**

To be successful in finding butterflies, one must know when they take flight. Some species fly in multiple broods spring to fall. Others can overwinter as adults. Some may have a single brood in the spring, summer or fall. Yearly weather patterns, precipitation, temperature and snowmelt affect when butterflies fly, which can vary dramatically from year to year with some butterflies. During the yearly Yosemite butterfly counts in late July in the major drought year 2018 participants found many species in the Hudsonian and Arctic-Alpine Life Zones had flown a month earlier than normal and were nearing the end of their flights. A year later in 2019, snow

had not melted until early July and the season was running behind normal on the July 29 count date which allowed for species to be seen that were not previously seen on that count during normal years. Those late snowmelt conditions allowed late flights into at least the second week in September witnessed that year by Mark Walker backpacking into the Yosemite back country.

Flights given here are usually the normal flight periods, but in a few cases extreme or actual early and late dates for those butterflies are given. Such dates for California butterflies were compiled by Ken Davenport, Ray Stanford and the late Robert L. Langston in a self-published electronic publication of California Flight Periods regularly updated by the author to the year 2018. But such dates could only be used and applied if based on actual Sierra Nevada records so I used them in relatively few cases in this publication.

### **COLOR PHOTOGRAPHS OR PLATES OF SIERRA NEVADA BUTTERFLIES.**

The cost of providing color plates is prohibitive. But, one can see what most Sierra Nevada butterflies look like and see all the field marks of males and females in several ways. The Butterflies of America website (BOA) available online has photographs of almost every butterfly species or subspecies found in the Sierra Nevada, including both live and collected specimens. A second alternative is to obtain or download a copy of *The Yosemite Butterflies: Color Plates* (Kenneth E. Davenport, Norbert G. Kondla, Charles Grisham and C. Howard Grisham (2007) in the Taxonomic Report of the International Lepidoptera Survey with over a thousand photos of nearly all known Yosemite region butterfly species (171) and subspecies (50) then known in color and life size. To access, go to <http://lepsurvey.com> and browse on TTR to Volume 5, also downloadable.

A few additional butterfly species have been found in the Yosemite region since then: *Hemiargus ceraunus*, *Euphilotes glaucon intermedia*, *Abaeis nicippe* and *Agraulis vanillae*. It was anticipated that *Hemiargus ceraunus* and *Agraulis vanillae* would be found in the Yosemite region so photos of those were included in the Color Plates publication.

Since the Yosemite Color Plates issue appeared, a few errors and many names change issues should be noted: Many generic name changes not noted below have also taken place, those are covered in the text in the species accounts. The errors or updates are noted below:

1. *Hylephila phyleus*: James Scott has since clarified that subspecies *muertovalle* occurs only in a small area of the eastern Mojave Desert including Death Valley and the subspecies in the Sierra Nevada is nominotypical *phyleus*, which is the subspecies actually illustrated in the color plates.
2. The skipper illustrating *Hesperia uncas giuliani* is actually a female *Hesperia colorado idaho*.
3. The photos illustrating *Pieris marginalis microstriata* are fine, but the subspecies name now recognized is *castoria*.
4. The subspecies name for the *American Copper* in the Sierra Nevada was changed from *alpestris* to *shields* because of nomenclatural rules.

5. What was called *Callophrys perplexa* in the color plates has since been returned to the previous name *Callophrys dumetorum* by a decision of the ICZN.
6. Both *Callophrys lemberti* and *Callophrys comstocki* are now considered subspecies of *Callophrys sheridanii*.
7. The *Deciduphagus augustinus* Eastern Sierra segregate is now generally placed in *Callophrys* and an examination of more collected individuals show they appear close to subspecies *concava*.
8. *Euphilotes enoptes langstoni* now appears to be a distinct species: *Euphilotes langstoni*.
- 9: The blues illustrating *Euphilotes ancilla pseudointermedia* may be *ancilla* but more probably represent *gilvatunica* or an undescribed population. These were not checked genitally by someone qualified to do so, or they may be *glaucon* which looks very much like *ancilla*.
10. The blues called *Plebejus melissa paradoxa* would be *inyoensis* unless that entity turns out to be a synonym of *paradoxa*.
11. **The Heather Blue** (*Agriades cassiope*) is now considered to be a subspecies of *Agriades glandon*.
12. **The Snout** (*Libytheana carinenta*) representing a female is actually another male.

**Note:** There were no photos to represent *Hesperia lindseyi eldorado* or *Pseudocopaeodes eunus obscurus*, that latter subspecies not really known to be represented in the Mono Lake area, thought to be a blend zone locality in 2007, and it still may be that. The latter is now not legal to collect because of its threatened status but photos are available at the BOA website.

Garth & Tilden in their Yosemite Butterflies publication had four color plates representing butterflies from the western foothills, the western mid-elevations, the high country and the Mono Basin below the east slope of the Sierra Nevada. There were four additional black and white plates of butterflies. These all had localities and collector initials, but no dates. Butterfly scientific names have changed considerably since 1963. Our knowledge of butterflies has grown and there are certain scientific names rules set by the International Commission of Zoological Nomenclature that have to be followed. There are no such rules for common names, which can vary by authors and country.

A publication entitled Butterflies of the Sierra Nevada by Ray S. Vizgirdas (2007) has some nice color photographs but many are misidentified or do not represent subspecies found in the Sierra Nevada and some species listed in that work are not known in the Sierra Nevada at all and misinformation was frequently given. Those butterflies not in the Sierra Nevada are covered under questionable or doubtful records after the species accounts of those butterflies that are in the Sierra Nevada. Misidentified photos:

26. California Dogface (*Colias eurydice*)-is actually *Zerene cesonia*.
53. Siva Juniper Hairstreak (*Callophrys gryneus siva*)- appears to be *Callophrys gryneus*.
86. Callippe Fritillary (*Speyeria callippe*)-this is either *Speyeria zerene* or *coronis*.

87. Great Basin Fritillary: If *egleis*, it does not appear to be what is in the Sierra Nevada.
90. Mormon Fritillary (*Speyeria mormonia*). This appears to be a *Speyeria hydaspe*.
105. Green Comma (*Polygonia faunus*): These are *Polygonia gracilis zephyrus*.
129. Persius Duskywing (*Erynnis persius*): I can't tell for sure what this is but the wings appear too boxy in wing shape and the duskywing has questionable field marks.
130. Sleepy Duskywing (*Erynnis brizo*)-This is a Funereal Duskywing (*Erynnis funeralis*)
133. Pacuvius Duskywing (*Erynnis pacuvius*)-This is a Sleepy Duskywing (*Erynnis brizo*)
134. Funereal Duskywing (*Erynnis funeralis*)-This is a Propertius Duskywing.
- The Common Branded Skipper (*Hesperia comma*) and Juba Skippers (*Hesperia juba*)-one is right and one is wrong. It's the same skipper in both photos.
152. Woodland Skipper (*Ochlodes sylvanoides*) - A lower side view is needed; this appears to be another *Ochlodes* species.

A problem with the photos is there is no collection data for the specimens illustrated and the butterflies used to illustrate often (not just the ones listed above) represent taxa that do not occur in the Sierra Nevada. Descriptions given in the book seem to be based on the species in general and not on how these species appear in the Sierra Nevada.

Contributor Codes to collection or photo records.

EDB- Ed Ballard

DB-David Bartholomew

WB-William Bouton

BSD-William Bouton, Mike Stangeland & Kim Davis

BRB: Bruce & Bret Boyd

JB-Jim Brock

BAMONA-(Butterflies and moths of North America) website, used when real names of submitters are not known.

BOA-Butterflies of America website

JAC: John A. Comstock

KD-Ken Davenport

JD-Jim Dreier

JFE-John F. Emmel

E/P-John Emmel & Gordon Pratt

RE-Randy Emmitt

JSG- John S. Garth

BG-Bill Gendron

FH-Fred Heath

KCH-Keith Hughes

RK-Richard Kelson

JL-John Lane  
RLL-Robert L. Langston  
L/S- Robert L. Langston & Ray Stanford  
LACM-Los Angeles County Museum.  
LMI-Lloyd Martin & Charles Ingham  
JHM- John H. Masters  
ESM-Eileen & Sterling Mattoon  
SOM-Sterling Mattoon  
JRM: James R. Mori  
KN-Kristie Nelson  
NC: No collector name  
PN: Phil Nordin  
PAO-Paul Opler  
PO-EBO – Paul Opler & Evi Buckner-Opler  
SFSU-BSNC – Paul Opler, Evi Buckner-Opler and San Francisco State University’s  
Butterflies of the Sierra Nevada class  
DP- D. Parkinson  
JGP-John G. Pasko  
GP-Gordon Pratt  
KR-Kilian Roever  
AR-Al Rubbert  
CS-Charles Sekerman  
AMS-Arthur M. Shapiro  
AOS-Allen Oakley Shields  
MS-Michael J. Smith  
DS-Dennis Sorg  
RES-Ray E. Stanford  
RKS-Ray & Kit Stanford  
MSD-Mike Stangeland & Kim Davis  
SS-Susan Steele  
PMT- Paul M. Thompson  
JWT-J. W. Tilden  
V/L-John Vernon & Langston  
MW-Mark Walker  
REW-Ralph Wells  
YBC-Yosemite Butterfly Count Group

Other abbreviations:

NF-North Fork  
SF-South Fork  
NP- National Park  
W-west  
E-east  
N-north  
S-south

## Species Treatment

### Skippers—Family HesperIIDae.

#### 1. Silver-spotted Skipper—*Epargyreus clarus californicus* MacNeill, 1975.

This is one of the most popular and among the largest skippers in the state, as are Hammock Skippers and Giant Skippers.

**Sierra Nevada Type Locality:** While not stated in Howe (1975), the designated lectotype is from China Flat near the American River, El Dorado County, California.

**Records: California: Amador County:** White Azalea Camp, 3 mi W of Salt Springs Dam 14 June 1977 (REW). **Fresno County:** 4 mi NE Pinehurst 4250' 25 June 1995 (L/S). **Madera County:** Sugar Pine 23 May & 8 June 1992 (KD); 3 mi E of Chilkoot Camp 13 June 2002 (KD). **Kern County:** Greenhorn Mountains, 1.1 to 1.4 mi S of Tiger Flat 15 July 2000; 11 & 17 June 2001 (KD); lower end Greenhorn Mountain Park on Old State Rd 2 July 2005 (KD); Shirley Meadows near top of ski slope 11 June 2006 (KD). **Mariposa County:** Fish Camp 16 June & 4 Aug 1990; 23 May 1992 (KD). **Nevada County:** Lang Crossing 5000' 18 July 1981 (AMS); Washington 2650' 5 June 1999 (EDB). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 19 June 2006 (SFSU-BSNC); Wild Plum Lane, Sierra City, 22 June 2016 (SFSU-BSNC). **Tulare County:** Balch Park 26 June 1972 (KD); Boulder Creek E of Big Meadow near Kings Canyon NP 28 June 2003 (KD); Sherman Pass Rd E above Kern River, Alder Creek 6800', colonized the area after 2002 forest fire 3 & 9 July 2005 and 22 May 2012 (KD); Trail to 100 Giants (Giant Sequoia Grove) 23 June 2002 (SS). **Tuolumne County:** Mather June-July (no specific dates given, AOS).

**National Park Records: Kings Canyon NP: Fresno County:** Near Zumwalt Meadow, larvae on *Lotus crassifolius*, mid-Aug 1988 (JFE). **Sequoia NP: Tulare County:** 2 mi W of Cabin Cove near Mineral King 5 July 1985 (KD). **Yosemite NP: Mariposa County:** Near Camp Curry, Happy Isles Trail, Yosemite Valley 31 May 1964 & 30 May 1970 (KD, several seen).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. A Mono County report for this species is questionable. There are no records for east slope Sierran counties: Alpine and Inyo counties. **Nevada:** No records.

**Habitat:** This butterfly occurs mostly in the Transition and lower Canadian Zones, but is occasionally found in the Upper Sonoran Zone, often along wooded areas along a small stream. Adults frequent mud and will repeatedly return to stream vegetation after being disturbed.

**Flight:** Late May to early August.



## 2. Hammock Skipper—*Polygonus leo arizonensis* (Skinner, 1911).

This is a large impressive stray skipper from SE Arizona or Mexico that has no hostplants growing in California and only occurs in the Sierra Nevada or nearby as a very rare stray.

**Type Locality:** Florence, Pima County, Arizona.

**Records:** **California:** **Inyo County:** Round Valley 4500' Rock Creek Road 2 mi N of Pine Creek Rd (1 mi S Mono County line) 26 Aug 1983 (ESM); Camp Inyo, 2 mi SW of Big Pine 27 Aug 1983 (RK). **Kern County:** Near South Fork of the Kern River at Weldon on heliotrope flowers 22 Aug 2006; another was seen in early September (2006) in Jawbone Canyon near the south edge of the Sierra Nevada (KD). **Mariposa County:** Jerseydale 11 Aug 1984 (AOS).

**Distribution:** **California.** Records are from Inyo, Kern and Mariposa counties.

**Habitat:** There is really no proper habitat for this tropical skipper in the state. In 1983, this species moved into the Cantil-Cinco area in Kern County in the Mojave Desert in some numbers, just south of the Sierra Nevada. Adults seemed to be traveling together in groups and conspicuously hanging on alfalfa blossoms. Adults also visit heliotrope, baccharis, and lantana

**Flight:** August-September depending on rainfall and favorable conditions.

**Notes on skipper names changes:** Many species formerly placed in the genus *Thorybes* or *Pyrgus* in the Sierra Nevada have been placed in newly named genera following the work of Li et al (2019) and explained further by Grishin (2019).

## 3. Northern Cloudywing—*Cecropterus (Thorybes) pylades indistinctus* (Austin & J. Emmel), 1998.

**Taxonomic note:** This species was placed in the genus *Thorybes* prior to 2019.

**Type Locality:** Boiling Springs, Laguna Mts., San Diego County, California.

**Records:** **California:** **Kern County:** Greenhorn Mts.: 1.1 to 1.3 mi S of Tiger Flat 15 & 22 July 2000 (KD); Piute Mountains: many locations along Piute Mountain Rd between Bodfish-Havilah Summit Rd between milepost 7, 20 and 28 May 2001 (KD); Breckenridge Mountain 10 June 1985 & 30 June 1989 (KD). **Madera County:** Sugar Pine 8 June 1992 (KD), sympatric with *C. diversus*; Fresno Dome Camp 1-2 July 1992 (KD). **Mono County:** Little Antelope Canyon 14 June 1996 (BRB) and Summers Canyon 7 July 1996 (BRB). **Mariposa County:** Signal Peak Lookout 7100' 17 June 1987 (AOS); Fish Camp 16 June 1990 & 23 May 1992 (KD). **Tulare County:** Balch Park 26 June 1972 (KD); Sherman Pass Rd at Alder Creek 6800' 18 June 1983 & 9 July 2005 (KD); Bald Mountain Lookout 9400' 20 June 1999 (KD). **Nevada:** **Washoe County:** Jones-White Creek Loop Trail, Galena Park 2 June 2012 (JD).

**Distribution:** **California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. There are no records for Inyo County. **Nevada:** All counties in the Sierra Nevada.

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones. Adults often occur in west slope areas where there are riparian waterways and abundant *Lotus crassifolius*, a larval host in the southern Sierra Nevada. This butterfly is uncommon on the east slope of the Sierra Nevada, absent there in Inyo and Kern counties.

**Flight:** May to mid-July.

#### 4. Western Cloudywing—*Cecropterus (Thorybes) diversus* (Bell, 1927)

This is one of the rarest skippers and butterflies, occupying a very limited range in California and extreme southwestern Oregon.

**Taxonomic notes:** Placed in the genus *Thorybes* before 2019. This skipper was known as Bell's or the Diverse Cloudywing in older literature.

**Sierra Nevada Type Locality:** Plumas County, California.

**Records: California: Madera County:** Sugar Pine common 23 May 1992 & 11 June 1993 (KD); common on roads between Sugar Pine and Sivels Mtn. 8 June 1992 (KR) and 11 June 1993 (KD); E of Redwood Camp to 3 mi W of Fresno Dome Camp 23 May 1992, 11 June 1993 (KD); Miami Rd just N of Hwy. 41 at seep near or on Mariposa Co. line 21 June 2011 (KD); one along Big Creek below Fresno Dome Camp 19 June 2014 (KD). **Mariposa County:** Fish Camp 5000' 23 May 1992 & 2 June 1993 (KD); a few at Summerdale Camp just E of Fish Camp off Hwy 41 in swampy area along Big Creek 23 May 2007 (KD). **Nevada County:** Solomon Peak 7400' and Last Camp Trail 7200' 18 June 1989 (AMS). **Plumas County:** N Butterfly Valley Botanical Area, Plumas National Forest 3 July 2019 (PAO-EBO); Deanes Valley Road, SW Quincy, Plumas National Forest (PAO); Meadow on Mt. Hough Road, Plumas National Forest (PAO). **Sierra County:** Haypress Falls, 2.5 mi E of Sierra City 4620' 6 June 1997 (RES). **Tuolumne County:** NE Tuolumne River near Longbarn 31 May 2000 (RK); Mather 10 June 1961 & 30 June 1962 (JWT).

**Distribution: California:** El Dorado, Madera, Mariposa, Nevada, Plumas, Sierra and Tuolumne counties. This species should turn up in Yosemite National Park because it occurs commonly at Fish Camp and Summerdale Camp very near the Park boundary near the Wawona Grove of Giant Sequoias.

**Habitat:** This species occurs in upper Transition and lower Canadian Life Zones in wet forested areas along streams and in small damp forest glades. Adults visit mud at seeps and along road drainages and patrol on stream benches.

**Flight:** Mid-May to early July.

#### 5. Nevada Mexican Cloudywing—*Cecropterus (Thorybes) mexicana nevada* (Scudder), 1872.

**Taxonomic notes:** Placed in the genus *Thorybes* until 2019.

**Sierra Nevada Type Locality:** Sierra Nevada, California.

**Records: California: Amador County:** Near Tragedy Springs Camp 12 & 15 July 1986 (KD). **Fresno County:** Upper Little Line Creek Meadow 7200' 13 June to 2 July 1930 (LMI); Mono Pass 2 Aug 1961 (RES). **Inyo County:** Mosquito Flat, end of Rock Creek Road 19 July 2019 (PO-EBO); Mulky Meadows 9400' W Lone Pine 8 & 23 June 1994 (EDB), reported as ssp. *blanco* in 1994 Season Summary); SF Bishop Creek, North Lake Camp 13 July 2009 & SF Bishop Creek at fisherman's flat near Table Mtn. Camp 12 June 2014 (KD). **Mono County:** Saddlebag Lake & vicinity 13-14 Aug 1970 (KD); slopes south side of Sonora Pass 8 July 1987 (KD); W side of Mono Lake 3 May 2015 (EARLY, KN). **Plumas County:** Round Lake, Plumas National Forest, June 24, 2016 (SFSU, BSNC). **Sierra County:** Sierra Nevada Field Campus, E Bassetts, Hwy 49, 28 June 2017 (SFSU-BSNC); Yuba Pass meadow, Hwy 49, Tahoe National Forest 10 July 2012 (SFSU-BSNC). **Tulare County:** Big Meadow 14 mi S of Sherman Pass Rd 15 June 1976 & 12 July 1978 (KD), the southern limit in the Sierra Nevada; W of Sherman Pass, rocky outcrops and ravine 8700-9100' 25 June 1985; 5 July 1986 & 22 May 2012 (KD). **Tuolumne County:** Niagara Creek S SR 108, 8 July 1987 (KD). **Nevada: Douglas County:** Carson Range, Clear Creek Canyon, 4.7 mi W of US 395, 17 May 1982 (GTA). **Washoe County:** Carson Range, Nv 431, Tahoe Meadows 21 July 1980 (GTA); Carson Range, 2 mi. E of Mt. Rose Summit 30 June 1987 (GTA).

**National Park Records: Sequoia NP: Tulare County:** Mineral King at Timber Gap Trail 9000', 22 July 1991 (KD); White Chief Trail 9000' 23 July 1992 (KD); Farewell Gap Trail 19 July 1993 (KD); Mineral King Valley 19 July 1993 (KD); Tokopah Falls Trail 17 July 1980 (PN); E of Timberline Lake 11,100' 5 July 2012 (EL). **Yosemite NP: Mariposa County:** Tamarack Flat 3 July 1954 (JWT.); Crane Flat 16 June 1968 (KCH). **Tuolumne County:** Tioga Pass 16 Aug 1952 & 18 July 1957; Mt. Dana, W slope 17 Aug 1957 (JWT); Gaylor Lakes Trail 9 July 1958 (all JWT).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Canadian, Hudsonian and Arctic-Alpine Zones: Rocky terrain in canyons, rocky slopes, drainages, hilltops ridges and alpine-fell fields.

**Flight:** Late May to August.

## 6. Common Sootywing—*Pholisora catullus* (Fabricius).

There appear to be two subspecies in the Sierra Nevada, one newly described with unknown range limits.

### a. Common Sootywing—*Pholisora catullus* (Fabricius), 1793.

**Type Locality:** "in Indiis. Dom. Jones."

**Records: California: Mono County:** Mill Creek Canyon 15 June 1996; 15 July & 9 Aug 1996 (BRB); Mill Creek Canyon Rd at wet meadow 2-3 mi W of US 395, 29 July 2018 (KD); Swall Meadow 20 May 1997 (Kevin Davenport); 30 May 1999 (KD/Jack Levy) and 26 May 2001 (JGP); Lower Rock Creek 9 Apr 2007 (KD). **Nevada: Carson City County:** Carson City, Carriage Crest Drive 8 Sep 1984 (GTA).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mono, Nevada, Placer, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City and Douglas counties. Records from Washoe County may or may not be in the Sierra Nevada.

**Habitat:** Weedy areas, wastelands, canyons and ravines along roads.

**Flight:** One or two broods, depending on locality. March to September.

**b. Common Sootywing—*Pholisora catullus crestar*** Scott & Davenport, 2017.

**Taxonomic notes:** This newly described subspecies is distinguished by nearly always having a well-defined band of crescent-shaped spots on the upperside hindwings. This character turns up in many areas away from Kern and Tulare counties and it could turn out that higher elevation *catullus* in Inyo County is closer to the nominate subspecies, or that *crestar* may be better viewed as a synonym of *catullus*.

**Sierra Nevada Type Locality:** Dry Creek Canyon, off Sherman Pass Rd. 4300', Tulare County, California.

**Records: Inyo County:** Big Trees Camp, SF Bishop Creek 18 May 1993 (KD); Lower Pine Creek Canyon 17 June 2004; 26 May 2009 & 12 May 2016 (KD), in series many have or do not have the white crescent spots on the hindwing; grade below Whitney Portal 27 July 2018 (KD); SF Bishop Creek 8300' 17 June 2004 (KD). **Kern County:** 0.7 mi SW of Sageland N of Kelso Valley in ravine 15 May 1976 (JB & KD), 29 Apr 1992 (KD) and many other dates; Breckenridge Mountain W of Havilah 6 June 1979 and 5 to 12 Sep 1976 (KD); Piute Mountains 2-3 mi S of Bodfish 8 to 30 May 1976 (KD). **Tulare County:** 2-3 mi S of Johnsondale 6 June 1983 and 21 Apr 1997 (KD); Dry Creek Canyon 17 May 1984 and 17 Mar-28 Apr 2016 (KD); E of Ant Canyon and Kern River 6 and 21 Apr 2006 (KD).

**Distribution:** Inyo, Kern and Tulare counties.

**Habitat:** Upper Sonoran Life Zone. This skipper occurs in Mojave Desert and Pinyon-Juniper plant associations in washes, ravines and roadsides in the Kelso Valley area. Elsewhere, this skipper occurs in foothill woodland and chaparral in canyons along small streams and at the bases of canyon walls and hills and in roadside ravines.

**Flight:** Late March to early June in Kern & Tulare counties, July or August in Inyo County. A second brood sometimes occurs in September.

**7. Mojave Sootywing—*Hesperopsis libya*** (Scudder, 1878).

**Taxonomic notes:** Formerly placed in the genus *Pholisora*. There is a segregate and one subspecies that occur in areas with Mojave Desert influence or in the arid southern San Joaquin Valley that marginally reach the Sierran foothills.

**a. Mojave Sootywing—*Hesperopsis libya***-Owens Valley segregate.

**Taxonomic notes:** This species was placed in the genus *Pholisora* prior to the genus *Hesperopsis* being applied.

**Records:** **Inyo County:** Nine Mile Canyon 8 June 1975 (JB); Lubken Canyon Rd SW of Lone Pine and 0.3 mi W of US 395, 25 Aug 1998 (KD); 1 July 2005 (MSD). **Kern County:** upper Jawbone Canyon 6 & 26 May 1978; 21 Aug 1979; 6 Sep 2006 (KD); E of Walker Pass 30 Aug 1976 (KD).

**Distribution:** **California:** El Dorado, Inyo and Kern counties. **Nevada:** Douglas and Washoe counties but may or may not occur within the Sierra Nevada there.

**Habitat:** Lower Sonoran Life Zone in canyons, wastelands, Mojave Desert plant communities on the southern and eastern slope areas where such habitats meet the Sierra Nevada.

**Flight:** May to September in one or two broods, varying from year to year based on timing of adequate rainfall

**b. San Joaquin Valley Mojave Sootywing—*Hesperopsis libya joaquina*** Emmel, Emmel & Mattoon, 1998.

**Type Locality:** McKittrick, Kern County, California.

**Records:** **California:** **Kern County:** Kern River at Hart Park near Bakersfield 28 May, 10 June and common 21 June 1983 (KD); 8 mi N of Oildale, Glennville/Woody Rd at Poso Creek 18 May 1981 (KD); west side of Kern River across from Hart Park on Round Mountain Rd 11 May 1987 and 15 May 1992 (KD).

**Distribution:** **California:** Kern County.

**Habitat:** Saltbush covered Sierra Nevada foothills. This butterfly seems to have disappeared and has not been seen in this region in several years. Long term drought and a falling water table are suspected.

**Flight:** Late April to early June.

**8. Saltbush Sootywing—*Hesperopsis alpheus oricus*** (W. H. Edwards, 1879).

**Taxonomic notes:** This species was previously placed in the genus *Pholisora*.

**Sierra Nevada Type Locality:** Carson Valley, Douglas County, Nevada.

**Records: California: Kern County:** Kelso Valley 15 June 1975 (JB); Tom's Hill SW of Butterbrecht Peak 15 May 1976 (KD); Butterbrecht Peak 21 May 1988 & 23 May 2005 (KD); canyon 1.5 mi SE of Butterbrecht Peak 26 May 1978; 9 May 1986; 21 & 27 May 1988 (KD). Bird Spring Pass and nearby Microwave Hill 13 May 2000 (KD). **Mono County:** Hills east of scenic turnout US 395, south of Sherwin Summit 6400-6600' 15 May 1988 (RPM); dry area east of Swall Meadow above Rock Creek Gorge 20 May 1987 & 12 May 1989 (KD).

**Distribution: California:** Kern and Mono counties. This species occurs in Inyo County, but is possibly unknown for the Sierra Nevada there. **Nevada:** This species is recorded in Douglas and Washoe counties but may not occur in the Sierra Nevada there.

**Habitat:** Dry east slope of the Sierra Nevada in association with *Atriplex canescens*, often above 5000'. This small black skipper is a quick and elusive flier on the steep and sandy soils where it occurs, in rattlesnake-infested areas.

**Flight:** May-early June.

### 9. Dreamy Duskywing—*Erynnis icelus* (Scudder & Burgess, 1870).

**Type Locality:** "New England", several specific localities have been suggested, a syntype is from "Center", Karner, Albany County, New York."

**Records: California: El Dorado County:** E side Jenkinson Reservoir 3500' 22 May 1982 (RK). **Mono County:** Little Antelope Canyon 14 June 1996 (BRB) and Mill Canyon 15 June 1996 (BRB). **Plumas County:** Twain, Feather River 31 May 2019 (MW).

**Distribution: California:** Amador, El Dorado, Mariposa, Mono, Nevada, Placer, Plumas, Sierra and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties. The records for Washoe County may or may not be in the Sierra Nevada. There are very few published records for the Sierra Nevada.

**Habitat:** Transition and Canadian Life Zones, often associated with aspens and coniferous forest, a species of the northern Sierra Nevada.

**Flight:** May-June, probably into mid- July. This is an early flier.

### 10. Sleepy Duskywing—*Erynnis brizo lacustra* (W. G. Wright, 1905).

This is one of the more prized species of duskywings, perhaps because they have a distinctive pattern and limited range in the Sierra Nevada. This duskywing is more common in the California Coast Ranges.

**Type Locality:** "Central California", Blue Lakes, Lake County, California.

**Records: California: El Dorado County:** NF Consumnes River on hilltop, vicinity of Mt. Aukum 2000' 1 May 1976 (AOS); Pine Hill summit NE of Bass Lake 2050', 23 Apr 1972 & 14 Apr 1974 (all AOS). **Kern County:** Ridge S of Lamont Peak, Chimney Peak Rd summit 29 Apr 2001 (KD); Piute Mountains: Hooper Hill 25 Apr 1980 (KD). **Mariposa County:** Footman Ridge summit SE of Jerseydale 4600' 1 & 23 May 1974 & 15 May 1976 (AOS); 5 mi W Briceburg 2750' 9 Apr 1981 (AOS). **Nevada County:** Lake Spaulding 5000' 7 June 1972 (AMS); Washington 2650' 2 Apr 1992 (AMS). **Placer County:** 6.5 road mi NE Foresthill 26 May 1975 & 24 Apr 1976, commonly hilltopping on exposed serpentine ridge (S. R. Sims); summit of limestone outcrop above Murderer's Bar, 1 ½ E of confluence of No. & Middle Fork American River, E of Auburn 19 Mar 1977 (AOS), hilltopping on serpentine terrain. **Tulare County:** Chimney Peak Rd ridge S of Lamont Peak 30 Apr 1987 (E/P) and a great number of records along the Kern River from Goldledge Creek N to Durrwood Creek off the Sierra Hwy and at wet spots and hilltops up the Sherman Pass Rd from the Kern River to 5860' at Alder Creek crossing of Cherry Hill Rd. 9 May 2007 (KD), but a high elevation record at Bald Mountain Lookout at 9400' 20 June 1992, E of the Sierra Crest (KD).

**Distribution: California:** Amador, El Dorado, Fresno, Kern, Mariposa, Nevada, Placer and Tulare counties. It has become obvious that over the past 40 years, *Erynnis brizo* is much more widely distributed on the west slope of the Sierra Nevada than previously known (Shields, 1978). Adults are associated with the host scrub oaks and hilltops and ridges at relatively low elevations, excepting the record for Bald Mountain at 9400' where scrub oaks actually occur! **Nevada:** No records.

**Habitat:** Upper Sonoran Life Zone, occasionally straying up into the Transition Zone. This species occurs on hills, ridges and in riparian canyons, often males are on hilltops, ridges or at mud.

**Flight:** Late February-June.

### **11. Propertius Duskywing—*Gesta (Erynnis) propertius* (Scudder & Burgess, 1870).**

**Taxonomic notes:** This species was formerly placed in the genus *Erynnis* until 2019, see Zhang, Cong, Shen, Opler & Grishin (2019a & b). This is the most common duskywing in the Sierra Nevada. Small individuals of this species are often misidentified as *E. persius* or *E. pacuvius*.

**Type Locality:** "California."

**Records: California: Mono County:** Sonora Pass 8 July 1987 (KD) and Swall Meadow 9 and 20 May 1997 (KD). These records are in a county where this species might not be expected. More general records are not given as this is a very common species on the west slope of the Sierra Nevada but not on the east slope.

**National Park Records: Kings Canyon NP: Tulare County:** Buena Vista Peak 28 June 1987 (KD). **Sequoia NP: Tulare County:** Mineral King Valley 5 July 1985 (KD); Silver City and Cabin Cove 5 July 1985 (both KD); Potwisha Camp and Buckeye Flat 17 May 1985 and 28 Feb

1986 (KD); Halstead Meadow 24 July 1987 (KD); Tokopah Falls Trail at Lodgepole 12 June 1990 and 2 Aug 1993 (KD); Ash Mountain 16 July 1992 (KD). **Yosemite NP: Mariposa County:** Trail from Camp Curry to Glacier Point 16 July 1933 (JSG); Yosemite Creek Trail S of Tioga Pass Rd. 16 July 1933 (JSG); Crane Flat 3 July 1954 (JWT); Badger Pass 23 June 1959 (JSG); Yosemite Valley 19 Apr 1961 (Keith Trexler).

**Habitat:** Upper Sonoran, Transition and lower Canadian Life Zones: Foothill woodland and mixed coniferous forest.

**Distribution:** All counties in the Sierra Nevada.

**Flight:** Late March to early August.

## 12. Mournful Duskywing—*Gesta (Erynnis) tristis* (Boisduval, 1852).

**Taxonomic notes:** This species was placed in the genus *Erynnis* prior to 2019, see Zhang, Cong, Shen, Opler & Grishin (2019a & b).

**Type Locality:** California: San Francisco, San Francisco County.

**Records:** **California: Fresno County:** SR 168, 14 mi NW of Shaver Lake 12 Sep 2003 & 11 June 2004 (KD); Buckeye Helipad (SR 168) 11 June 2004 (KD). **Madera County:** Chowchilla River at Santa Fe Rd and 8 mi SE of Raymond 15 June 1984 (PAO) ridge NE of San Joaquin River at Powerhouse 11 Apr 2004 (KD). **Mariposa County:** Briceburg 28 Mar 1981 & 20 Apr 1984 (KD). **Nevada County:** 2 mi N Cisco 6270' 19 June 1936 (S. G. Jewett); Donner Pass 7200', unusual for this elevation 18 June 1989 (AMS); Wolf Mountain 2631' 8 mi SSW Grass Valley 15 June 1998 (RES). **Tulare County:** Upper Kern River, Limestone Camp 14 & 28 Aug 2018 (KD) and Sherman Pass Rd E of Kern River just below 7000' marker 17 Aug 2018 (KD). **Tuolumne County:** Jacksonville 850' 15 Sep 1954 (C. D. MacNeill) and Tuolumne 2000' 31 Aug 1959 (M. Lundgren).

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 17 May 1985 (KD).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Nevada, Placer, Sierra, Tulare, Tuolumne and Yuba counties. There are no records from the Sierra Nevada in Nevada. This species tends to be very local in occurrence, occurring in the San Joaquin Valley and in the Sierra Nevada foothills where it can be hard to find.

Garth & Tilden (1963) included this species in their Yosemite faunal book but wrote “The Sad Duskywing (= *Erynnis tristis*) may be expected to occur in the oak woodlands and foothills, although it has not yet been found in the Yosemite region.” That continued to be true until 2004, when Ray Stanford and the author made a trip and search to the San Joaquin River in the Madera and Fresno County foothills to find both this species and the Funereal Duskywing (not yet recorded for Fresno County) to authenticate Garth and Tilden’s decision to include a species put on their faunal list not proven to be in the Yosemite region. The records for both *tristis* and *funeralis* are given above.



**Habitat:** Lower and Upper Sonoran Life Zones, in valley grasslands with oaks, foothill woodland and oak woodland.

**Flight:** Late March to early October. Two broods: Spring and late summer and early fall.

**General:** This species is frequently confused with the Funereal Duskywing, but fresh individuals can usually be identified (see comments under *Gesta funeralis*).

### 13. Dyar's Pacuvius Duskywing—*Gesta (Erynnis) pacuvius lilius* Dyar, 1904.

**Taxonomic notes:** This species was placed in the genus *Erynnis* prior to 2019, see Zhang, Cong, Shen, Opler & Grishin (2019a & b).

This duskywing is easily misidentified and confused with *Gesta persius* in areas where the two occur together, especially in old worn and faded individuals.

**Type Locality:** Kaslo, British Columbia, Canada.

**Records:** **California:** **Alpine County:** Leviathan Peak, Monitor Pass, Humboldt-Toiyabe National Forest 15 July 2019 (PAO-EBO). **Amador County:** Panther Creek Rd 5500' 23 June 1999 (RK). **El Dorado County:** 2 mi. E of Myers, Hwy 50, 7 July 2019 (PAO-EBO). **Fresno County:** SR 168 near Huntington Lake 26 June 1966 (KCH & Jan Hughes); Shaver Lake 15 June 1968 (KCH & Jan Hughes). **Kern County:** Piute Mountain Lookout 19 June 1981 (KD). **Mono County:** Swall Meadow 9 & 20 May 1997 (KD); Little Antelope Cyn 14 June & 12 July 1996 (BRB). **Nevada County:** Washington 19 May 2000 (EDB). **Plumas County:** Round Lake loop, Plumas National Forest 10 July 2012 (SFSU-BSNC); **Sierra County:** Packer Saddle, Tahoe National Forest, 22 June 2016 (SFSU-BSNC).

**National Park Records:** **Sequoia NP:** **Tulare County:** Tokopah Falls Trail 12 June 1990 (KD); Silver City and 2 mi W of Cabin Cove 5 July 1985 (KD); Mineral King Valley 19 July 1993 (KD). **Yosemite NP:** **Mariposa County:** Tamarack Flat 3 July 1954 (JWT); Crane Flat 24 June 1959 (JSG)

**Distribution:** **California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** All counties.

**Habitat:** Transition and Canadian Zones in mixed coniferous and coniferous forests. Adults commonly go to hilltops and ridges and are closely associated with their *Ceanothus* hostplants.

**Flight:** Late March to July.

### 14. Funereal Duskywing—*Gesta (Erynnis) funeralis* (Scudder & Burgess, 1870).

**Taxonomic notes:** This species was placed in the genus *Erynnis* prior to 2019, see Zhang, Cong, Shen, Opler & Grishin (2019a & b).

**Type Locality:** “This Texas species”.

**Records: California: Calaveras County:** W of Arnold 6 Sep 1998 (JRM), **Inyo County:** Lubken Canyon S of Lone Pine 10 Sep 2005 (KD); SF Bishop Creek 8400’ 27 July 2019 (KD). **Madera County:** Road to Redinger Lake 20 Mar 2004 (KD); Road top of ridge 2-3 mi above Powerhouse 10 & 11 Apr 2004 (RES/KD) and 7 May 2004 (KD). **Mariposa County:** Coulterville Rd 26 June, year not given (D. MacLean). **Mono County:** Rock Creek 28 July 1952 (Jerry Powell).

**National Park Records: Sequoia NP: Tulare County:** Redwood Creek, Mineral King Rd 5 July 1985 (KD); Potwisha Camp 28 Feb & 18 Apr 1985 (KD); Hospital Rock 15 Aug 1986 (KD). **Nevada:** No records.

**Distribution: California:** Alpine, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Tulare, Tuolumne and Yuba counties. This species is lacking in Sierra, Placer and Plumas counties. *Erynnis funeralis* tends to be common to regular from the central Sierra Nevada south, but for some reason, the species was apparently rare in the Yosemite region (Garth & Tilden, 1963).

**Habitat:** Unrestricted in the Upper Sonoran, Transition and Canadian Life Zones, this species can turn up almost anywhere below 9000’.

**Flight:** Late February-October.

**General:** This is another duskywing identification problem. There are only two California duskywings with white fringes: *funeralis* and the Mournful Duskywing (*Gesta tristis*). These are frequently misidentified by photographers submitting records. Usually with fresh individuals of the Funereal Duskywing, the more blackish coloration, elongated wing shape and triangular shaped hindwings, a pale patch at the end of the cell on the forewings on the upperside and a different pattern than *tristis* should work. It often doesn’t. But collectors and authors struggled with duskywings for years before John Burns clarified their species limits and identification.

### **15. Persius Duskywing—*Gesta (Erynnis) persius* (Scudder, 1863).**

**Taxonomic notes:** Duskywing specialist John Burns did not assign subspecies names to this species. This duskywing was placed in the genus *Erynnis* prior to 2019, see Zhang, Cong, Shen, Opler & Grishin (2019a & b).

**Type Locality:** Not specifically stated; New England implied from the title of the paper, California populations have sometimes been referred to as “near *fredericki* H. A. Freeman, 1943 by some authors in their California state checklist (Emmel, Emmel & Mattoon, 1998g), if so they would have a type locality of “near Lead, Spearfish Canyon, South Dakota (Lawrence County)..”

**Records: California: Alpine/Amador County:** Carson Pass 9000’ 3 July 1981 (AMS). **Alpine County:** Iceberg Meadows 8000’ 8 July 1990 (Yves- Pascal Dion). **Fresno County:** Shaver Lake 3 to 8 July 2002 (RE). **Inyo County:** SF of Bishop Creek 8000-8400’ 8 July 1979; 23 June

1986 & 8 June 1992 (KD). **Kern County:** Greenhorn Mountains 1 mi S Tiger Flat Camp 20 July 2009 (KD). **Madera County:** Fresno River at Oakhurst 8 June 1992 & 31 Mar 1994 (KD); Fresno Dome Camp 26 July 1992 (KD); Big Sandy Camp near Big Creek 15 June 2016 (KD); Sugar Pine 4 Aug 1990 & 23 May 1992 (KD). **Mariposa County:** Briceburg 28 Mar 1981 (KD); W of Jerseydale 23 June 1987 & 9 Aug 1993 (KD). **Mono County:** Near Monitor Pass 23 & 25 June 1962 (C. D. MacNeill); Swall Meadow 9 & 20 May 1997 (KD). **Nevada County:** Donner Pass 13 July 1977 (REW). **Placer County:** Donner Pass 7000' 23 Aug 1981 (AMS). **Sierra County:** Packer Saddle, Tahoe National Forest, 22 June 2016 (SFSU-BSNC); 1 mi E of Yuba Pass, Hwy 49. 2 July 2007 (SEABA-C). **Tulare County:** Big Meadow 14 mi S Sherman Pass Rd 20 June 1980 (KD); Sherman Pass Rd E of Kern River, Alder Creek 6800' 3 July-27 Aug 2005, a classic locality (KD); Black Rock Ranger Station 23 June 1994 (KD); road summit near south end of Kern Plateau N of Cannell Meadow 10 June 2006 (KD & RPM), southern range limit in the Sierra Nevada. **Tuolumne County:** Mather 15 July 1956 (JSG). **Nevada: Douglas County:** Clear Creek Canyon 18 May 1986 (JD). **Washoe County:** Galena Regional Park, James Creek Loop Trail 23 June 2016 (JD).

**National Parks: Mariposa County:** Research Reserve (Yosemite Falls Trail S of Tioga Rd) 15 July 1933 (JSG); Badger Pass 23 June 1959 (JSG). **Tuolumne County:** Aspen Valley 14 July 1956 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern (very rare); Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** All counties in the Sierra.

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones in foothill woodland, mixed coniferous forest riparian areas and elevated sagebrush on both west and east slopes. Adults often occur along streams.

**Flight:** Mid-March to early September.

**General:** Looking at all the above records and all the counties this duskywing lives in, one would think that these are commonly seen butterflies. Actually, not many can find or identify a *Persius Duskywing* with assurance. Many who think they have this duskywing now on their life list are wrong. This species and *Pacuvius Duskywings* are often confused as are duskywings in general.

#### **16. Two-banded Checkered Skipper—*Pyrgus ruralis* (Boisduval, 1852).**

**Sierra Nevada Type Locality:** Hwy 70 at Murphy Creek, 2.5 road miles SW of Belden, North Fork Feather River Canyon at 1800', Plumas County, California.

**Records: California: Alpine County:** Trail from Woods Lake to Round Top Lake 8600' 10 July 1990 (Greg Kareofelas). **Amador County:** Meadow near Tragedy Springs about 1 mi W Silver Lake 12 July 1986 (KD). **Fresno County:** Tamarack Meadow, 2 mi E of Shaver Lake 3 July 1954 (JWT); near Dinky Creek 27 May 2002 (KD). **Madera County:** Sugar Pine 24 May 1991; 23 May 1992 and 11 Apr 2004 (KD); 1 mi W of Fresno Dome 13 June 2002 (KD); Big Sandy Camp 29-30 May 2007 (KD). **Mono County:** Stream bench near turnoff to Saddlebag

Lake at Jct. with Tioga Rd 25 June 1976; subalpine forest west below Saddlebag Lake 25 June 1976 (KD) and 29 July 2019 (YBC) trail SE side Saddlebag Lake 10 July 2004 (BG/KD); S of Sonora Pass along streambed 7 & 9 July 1987 (KD). **Plumas County:** Twain, Feather River 31 May 2019 (MW). **Sierra County:** Forest Road 54, S Bassetts, Tahoe National Forest, 26 June 2017 (SFSU-BSNC); Howard Creek Road, Tahoe National Forest 30 June 2018 (PAO). **Tulare County:** Big Meadow near Salmon Creek 15 June 1976; 12 July 1978 and 20 June 1980 (all KD) meadow about 1 mi. E Sherman Pass 3 July 1978; 4 July 2004 and many other dates (KD); Troy Meadow and Black Rock Ranger Station 23 June 1994 (KD). **Nevada: Douglas County:** Spooner Lake State Park 19 June 1988 (JD).

**National Park Records: Sequoia NP: Tulare County:** Halstead Meadow 7 July 1979 (PN); Tokopah Falls Trail 12 June 1990 (KD); Mineral King, Timber Gap Trail 22 July 1991 (KD). **Yosemite NP: Mariposa County** Research Reserve (Trail S to Yosemite Falls from Tioga Rd) 15 July 1933 & 10 July 1956 (JSG); Tamarack Flat 3 July 1954 (JWT); Tenaya Lake 11 July 1958 (AOS); trail from Vogelsang to Mt. Lyell (Tuolumne/Mariposa line area) 7 Aug 1958 (AOS).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** All counties.

**Habitat:** Canadian and Hudsonian Life Zones. Dry areas bordering or within a subalpine meadow, stream benches, the base of talus slides bordering subalpine meadows.

**Flight:** Late April to mid-August depending on elevation.

### 17. Common Checkered Skipper—*Burnsius (Pyrgus) communis* (Grote, 1872).

**Taxonomic notes:** See genus revision (Li et al., 2019) for explanation of the genus names change. This skipper was long placed in the genus *Pyrgus* prior to 2019. This species and *Burnsius albescens* are not reliably identified by field marks. Males are separable by examining male genitalia. Others can be separated by knowing their geographical ranges, habitat and elevation, but in some areas, both may be sympatric. Most records given for these two species were examined and determined by Paul Opler, John F. Emmel or Julian Donahue. In many cases, determinations can be determined by locality alone.

**Type Locality:** “Central Alabama”, suggested to be “vicinity of Demopolis.”

**Records: California: Inyo County:** Base of Sierra E of Whitney Portal 18 June 2006 (KD). **Kern County:** Lake Isabella, Hanning Flat 20 Sep 2008 (KD), sympatric with *B. albescens*; below Auxiliary Dam, Lake Isabella 7 June 2008 (KD). **Tulare County:** Three Rivers 4 Sep 1991 (KD). Regular County records are only used here that were determined genitally because it proves both *albescens* and *communis* can both occur together at a locality or in a county. Most identifications of this species in the Sierra Nevada can be done by locality alone,

not done here because this is a common species and *Burnsius albescens* very rarely occurs north of Tulare County.

**National Park Records: Sequoia NP:** Halstead Meadows 15 Sep 1987 (KD, det. JFE).

**Yosemite NP: Mariposa County:** Crane Flat 6200 16 Aug 1981 (RLL); **Tuolumne County:** Aspen Valley 14 July 1956 (JSG), determined by locality, these localities are N of *B. albescens*' normal range.

**Distribution: California:** All counties. **Nevada:** All counties.

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones. This skipper occurs in dry spots bordering meadows, weedy fields, areas in cities or agricultural fields or wastelands.

**Flight:** March to October.

### 18. White Checkered Skipper—*Burnsius (Pyrgus) albescens* (Plötz, 1884).

**Taxonomic notes:** Long placed in the genus *Pyrgus*, see generic revision (Li et al, 2019) for more information.

**Type locality:** “Mexico.”

**Records: California: Calaveras County:** Mokelumne Hill (no date, F. E. Blaisdell). **Kern County:** Lake Isabella, Hanning Flat 20 Sep 2008 (KD), sympatric with *B. communis*. **Tulare County:** Greenhorn Mountains, W of Poso and Linn’s Valley at Arrastre Creek 27 Apr 1998 (KD); Kern River along Whiskey Flat Trail at Fairview 12 June 2014 (KD). **Nevada Records: Carson City County:** Carson City (GTA). Records in this paper are limited to genitically confirmed records. The above records were determined by John F. Emmel, Julian Donahue or Paul Opler. Generally, *albescens* is replaced by *communis* north of the Kern/Tulare County line and north of Inyo County so individuals can usually be identified by locality alone, but in Kern, Tulare and Inyo Counties, both species can overlap at many of the same localities.

**Distribution: California:** Inyo, Kern and Tulare counties. **Nevada:** Carson City County. The Calaveras County record suggests this species might range further north.

**Habitat:** Weedy areas, wastelands, saltbush flats, agricultural areas, city yards.

**Flight:** March to early November.

### 19. Large White or Northern White Skipper—*Heliopetes ericetorum* (Boisduval, 1852).

**Near Sierran Type Locality:** Vicinity of Sawmill Peak at Griffin Gulch, rim of West Branch Feather River, 2 air miles E. of Magalia, Butte County, California.

**Records: California: Fresno County:** SR 168, 14 mi NW of Shaver Lake and Buckeye Helipad 11 June 2004 (KD); ridge above Redinger Lake 4 Sep 2004 (KD). **Inyo County:** Nine Mile

Canyon 30 Apr & 18 May 2019 (KD). **Madera County:** Oakhurst 23 May 1992 and NE of Oakhurst 11 June 1993 (KD); Sugar Pine 28 July 1989 & 4 Aug 1990 (KD). **Mariposa County:** Jerseydale 22 Apr to 25 May 1986 (AOS); Fish Camp 5000' 5 Sep 1995 (KD). **Mono County:** Mill Creek 15 Aug 1996 (BRB); Convict Lake terminal moraine, 1 mi W US 395, 16 June 2004 (PAO); ridge E of Green Canyon 21 June 2006 (KD); Lower Rock Creek 6 June 2019 (KD). **Nevada County:** Donner Pass 7000' 21 June 1981 (AMS) and Lang Crossing 5000' 20 June 1992, rare in region (AMS). **Plumas County:** NF Feather River at Caribou Rd 6 June 1997 (Greg Kareofelas). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 19 June 2006 (SFSU-BSNC). **Tuolumne County:** 1 mi. E Mather June-Sep (AOS). **Nevada: Carson City County:** Carson City 13 June 1986 (GTA). **Washoe County:** Carson Range, Truckee River 29-30 May 2019 (MW).

**National Park Records: Kings Canyon NP: Tulare County:** Wilsonia 18 Aug 1989 (KD). **Sequoia NP: Tulare County:** Ash Mountain 27 July 1985 (KD); Potwisha Camp 18 Apr; 17 May & 6 Sep 1985 (KD); Cabin Cove & Redwood Creek 27 July 1985 (KD); near Crescent Meadow 18 Aug 1989 (KD); Generals Hwy many locations 4 Sep 1991 (KD). **Yosemite NP: Tuolumne County:** Hetch-Hetchy Rd off SR 120, 14 May 1961 (JWT).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe Counties.

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones. This species occurs in a wide variety of plant associations but seems most abundant on drier slopes in weedy fields and montane areas.

**Flight:** Late March to early November.

## 20. Arctic Skipper—*Carterocephalus palaemon skada* (W. H. Edwards, 1870)

This is a rare skipper in California that reaches south as far as the northern end of the Sierra Nevada.

**Type Locality:** Kodiak, Alaska.

**Records: California: Nevada County:** Scotchman Falls, 1.5 mi. E of Washington 3050' 8 June 1997 (RES); Yuba Gap I-80 exit 161, near bog and railroad tracks 5630' 21 June 2016 (Glen Forister). **Plumas County:** Little Volcano Mountain 13 mi SE Quincy 3 June 1984 (AOS); Meadow Valley (Forestry Field Station) 4100' 1-3 June 1984 (RLL, SOM); 1 mi S Meadow Valley 4100' 6 & 8 June 1997 (RLL). **Sierra County:** Pack Saddle Campground, Tahoe National Forest, 22 June 2016 (SFSU-BSNC):.

**Distribution: California:** Nevada, Placer, Plumas and Sierra counties.

**Nevada:** No records in the Sierra Nevada.

**Habitat:** Undisturbed wet meadows and forest openings. Host plant: *Calamagrostis purpurascens* (Purple Reed Grass).

**Flight:** May-June.

**21. Yucca Giant Skipper**—*Megathymus yuccae martini* D Stallings & Turner, 1956.

This is a butterfly of the Mojave Desert that is a resident in areas of the southern Sierra Nevada and some east slope Sierran locations where the host Joshua Tree grow. Watching these large black and gold butterflies fly at very high speeds up and down desert canyons is a morning well spent, these butterflies usually disappear by early afternoon with a brief reappearance later in the afternoon. On a cloudy day Yucca Giant Skippers may fly most of the day.

Unlike some butterflies in which males go to hilltops to locate mates. I see the females of Yucca Giant Skippers go to hilltops and the males are down in the canyons near the Joshua Tree hosts. Near the summit of Butterbrecht Peak in May, one can observe these female Yucca Giant Skippers having aerial battles (or mate location behavior?) with *P. indra phyllisae* as high as 5900'

**Taxonomic notes:** The western populations were treated as a different species, *Megathymus coloradensis* Riley, 1878 for many years.

**Type Locality:** Little Rock, Los Angeles County, California.

**Records:** **California:** **Inyo County:** Lower Nine Mile Canyon 12 Apr 2005 & 5 Apr 2019 (both KD). **Kern County:** W of Walker Pass 10 May 1976 and E of Walker Pass 12 May 1976.; 13 mi S of Weldon in canyon and 0.7 mi. SW of Sageland 23 Apr 1979; 13 Apr 1984; 29 Mar 1986 (KD) and many other subsequent dates; 2 mi N below Bird Springs Pass in a side canyon 14 & 22 Apr 2000; E side of Piute Mountains near Sageland 14 Apr 2000; ridges SW of Butterbrecht Peak 25 May 1976; 23 Apr 1981; 14 Apr 1987 and 29 Apr 1992, and canyon 1.5 mi. SW of Butterbrecht Peak 11 Apr 1993 and other dates (all records KD).

**Distribution:** **California:** Inyo and Kern counties. There is one sight record near Lamont Peak in Tulare County. **Nevada:** No Sierra Nevada Records.

**Habitat:** This species occurs in Joshua Tree forests in elevated “Mojave Desert” canyons and washes within the Sierra Nevada.

**Flight:** Late March to late May.

**22. Orange Skipperling or Hewitson’s Skipper**—*Oarisma (Copaeodes) aurantiaca* (Hewitson, 1868). **Taxonomic notes:** This species was formerly placed in the genus *Copaeodes*, but see Zhang, Cong, Shen, Opler & Grishin, 2019a & b).

**Type Locality:** Not stated.

This is a Mojave Desert species that occasionally reaches the Sierra Nevada, establishing small breeding populations in the southern part of the range.

**Records: California: Inyo County:** Nine Mile Canyon 8 June 1985 (KD). **Kern County:** E of Walker Pass 8 Aug 1977; ridge above Walker Pass summit 21 May 1983 (SOM); 0.8 mi S of Sageland, common in ravine off Kelso Valley Rd 15 Aug 1978 & 30 Apr 1984 (both KD).

**Tulare County:** Sherman Pass Rd in Dry Creek Canyon 18 June 1983 (AR) and 25 June 1985 (KD); canyon NW of Lamont Peak near Lamont Meadows 20 June 1992 (KD).

**Distribution: California:** Inyo, Kern and Tulare counties. **Nevada:** No Sierra Nevada records.

**Habitat:** Mojave Desert plant communities in ravines, canyons and desert scrub in the Lower Sonoran Zone. Strays reach the Upper Sonoran Life Zones in foothill woodland and sometimes establish transient populations. This skipper appears to have totally disappeared in the southern Sierra Nevada the past 30 years, probably related to long term drought and major plant community die offs resulting in change of habitats.

**Flight:** 30 April to 22 October in the Sierra Nevada.

### 23. Common Roadside Skipper—*Amblyscirtes vialis* (W. H. Edwards, 1862).

This is a prized very small boreal species that is easily overlooked.

**Type Locality:** Rock Island, Illinois, Lake Winnipeg, neotype from “Peyton Twp.”, Mercer County, Illinois.

**Records: California: Amador County:** Pine Grove 12 May 1964 (N. LaDue). **Calaveras County:** Hunter Dam below Avery May-June (JRM). **Madera County:** Sugar Pine Lake 23 May 1992 (seen, KD) and Sugar Pine 3 July 1991 (KD); E of Redwood Camp on Fresno Dome Rd 28 May & 13 June 2002 (KD); small forest opening off Hwy. 41 across from 4000’ marker 23 & 29 May 2007 (KD, singletons). **Mariposa County:** Fish Camp along Big Creek 16 June 1990 & 23 May 1992 (KD). **Placer County:** Donner Pass 7000’ 7 Aug 1980 (scarce at this locality, AMS). **Plumas County:** Soda Creek 2500’ W of Paxton 29 May 1982 (ESM); Keddie 3140’ 6 June 1997 (V/L); Twain, Feather River 31 May 2019 (MW). **Sierra County:** Big Spring, W Bassetts, Hwy 49, 26 June 2017 (SFSU-BSNC). **Tuolumne County:** Twain Harte 3800’ (SR 108) 31 May 2000 (RK).

**National Park Records: Mariposa County:** Yosemite Valley, meadow near Ahwahnee Hotel 17 June 1932 (JWT).

**Distribution: California:** Amador, Calaveras, El Dorado, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tuolumne and Yuba counties: This is a west slope northern Sierra Nevada species that ranges down to the Yosemite region where it occurs in small numbers. **Nevada:** No Sierra Nevada records.

**Habitat:** Transition and Canadian Life Zones: Meadows, forest glades, often in well-watered areas.



**Flight:** Late May to early July.

**24. Eufala Skipper—*Lerodea eufala*** (W. H. Edwards, 1869).

This is a species found commonly in the San Joaquin Valley that rarely strays into the Sierra Nevada foothills. The most unbelievable experience I had with this species in the Sierra Nevada was finding three individuals in one day at Quaking Aspen at 7200' in the Canadian Life Zone.

**Type Locality:** Apalachicola, Florida, neotype from “Ind (ian) River” (Brevard and Volusia Counties).

**Records: California: Amador County:** 1 mi S Ione 9 Oct 1978 (REW). **Fresno County:** Lost Lake Park along San Joaquin River 12 Sep 2003 (KD). **Kern County:** Weldon 4 to 21 Aug 1981 (KD) & 3 Oct 2013 (KD). **Mariposa County:** Jerseydale “occasional” (AOS). **Nevada County:** I-80 at SR 20, 5000' 31 Aug 1972 (AMS); Lang Crossing 5000' 30 Aug 1985 (AMS). **Tulare County:** Three Rivers 4 & 13 Sep 1991 (KD); 1.5 mi W of Sequoia NP on SR 198: 12 Aug 1992 (KD); three individuals at Quaking Aspen 7200' 3 Sep 2007 (KD); Lake Success Park 5 Sep 1987 (KD).

**Distribution: California:** Amador, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Nevada, Placer, Sierra, Tulare and Yuba counties. Records from the Sierra Nevada for many listed counties need confirmation. Confirmed records I know of are given above, there are no Nevada records for the Sierra Nevada. Few records of common species get published.

**Habitat:** Cities and agricultural fields which are limited in the Sierra Nevada.

**Flight:** July to October with most records in August and September.

**25. Fiery Skipper—*Hylephila phyleus*** (Drury, 1773).

**Taxonomic notes:** The name *muertovalle* Scott, 1981 was applied to most California populations in error (Scott, 2008). The nominotypical subspecies is what is found in the Sierra Nevada. Subspecies *muertovalle*, not recognized as a valid subspecies in the Pelham Catalogue (but lighter and less well marked than nominotypical *phyleus*) gets as close to the Sierra Nevada as Ridgecrest in Kern County, about 7-10 miles east of the Sierra Nevada. Pelham (pers. comm.) believes the lightness of this species in the Death Valley region is related to the very hot and dry area in which it lives and is thus an environmental form, he may be right.

**Type Locality:** Antigua, St. Christopher's, Nevis suggested to be Antigua.

**Records: California: Fresno County:** SR 168, 14 mi NW of Shaver Lake 12 Sep 2003 (KD); Millerton Lake 8 July 2002 (RE). **Kern County:** Kernville 14 & 21 June 1998 & 2 July 2005 (KD), Weldon 4 to 21 Aug 1981 (KD); Greenhorn Mountains: Glennville 4 Aug 1997 (KD); Piute Mountains: Havilah Knolls 5 to 12 Sep 1975 (KD). **Mariposa County:** Fish Camp 4 Aug 1990 & 5 Sep 1995 (KD); occasional at Jerseydale (AOS). **Mono County:** Round Valley area

near southern base of Sherwin Grade just N Inyo County line 6 July 1976 (RES). **Sierra County:** Sierra Valley on E slope of the Sierra 5000' 13 Sep 1988 (AMS). **Tulare County:** Gateway to Sequoia Nat'l. Park E of Three Rivers 27 July; 6 Sep 1985 and 16 Aug 1986 (KD); upper Kern River at Calkin's Flat 5 Oct 2002 (KD); Sherman Pass Rd 7800' 21 Sep 2002 (KD). These records are given to document occurrences within the Sierra Nevada, even though this species is abundant in cities and lowlands.

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 16 July & 12 Aug 1992; 2 Aug 1993 (KD)

**Distribution: California:** All except Alpine County. **Nevada:** Carson City County, a Washoe County record may be outside the Sierra Nevada.

**Habitat:** This skipper is typically found in cities and pastures with Bermuda grass (the larval host), but does occasionally stray into unexpected places.

**Flight:** May into October.

## **26. Alkali Skipper—*Pseudocopaeodes eunus* (W. H. Edwards, 1881).**

There are three subspecies that occur along the east slope of the Sierra Nevada as far south as the south end of Kelso Valley.

### **a. Alkali Skipper—*Pseudocopaeodes eunus eunus* (W. H. Edwards, 1881).**

This skipper has a very small range in the Kern River Valley and an isolated colony in Kelso Valley.

**Type Locality:** Bottomlands of the Kern River near Bakersfield, Kern County, California.

**Records: California: Kern County:** Weldon 13 & 14 June 1981 (Ron Leushner) and 4 to 21 Aug 1981 (KD) and many subsequent records; Onyx 4 & 21 Aug 1981; 10 July 1984, 23 Apr 2005 and many other records; south end Kelso Valley along edge of meadow near Jct. of Kelso Valley and Jawbone Canyon Roads 1 Aug 1992 (JFE).

**Distribution: California:** Kern County only. The current status of this butterfly in the Kern River Valley is unknown, none have been seen or reported from Weldon or Onyx in several years. The decision by a conservation group managing their Preserve to keep it at climax state and ranching practices in that area appear to have changed the habitat in that area to one not conducive to this butterfly's survival. Many ranches at Weldon and Onyx are on private land that is fenced off.

**Habitat:** Saltgrass areas with heliotrope and pastures with Saltgrass along the South Fork of the Kern River. Meadow fed by drainage within Mojave Desert vegetation in Kelso Valley.

**Flight:** Two broods, mid-April to August, but mostly May to mid-August.

**b. Yellow Alkali Skipper**—*Pseudocopaeodes eunus flavus* Austin & J. Emmel, 1998.

**Taxonomic notes:** This subspecies is paler and more yellowish in color than nominotypical *eunus*.

**Type Locality:** Nevada: Churchill County, Stillwater National Wildlife Refuge, Loop Road, 1189 m.

**Records: California: Inyo County:** W side of Owens River near Bishop 7 Aug 1978 (KD); Lubken Canyon Rd 2 mi S of Lone Pine on heliotrope along road ¼ to ½ mi. W of US 395, 13 Aug 2001 and 1 Sep 2002 (KD); Olancho on edges of pasture along US 395, 29 Aug 1978 & 21 Aug 1981 (KD) and 21 June 1998 (JGP).

**Distribution: California: Inyo County.** A population on the west shore of Koehn Dry Lake at Cantil in Kern County lies just south of the Sierra Nevada in the Mojave Desert.

**Habitat:** Saltgrass areas along creeks draining the eastern Sierra Nevada and riparian grasslands and pastures in the Owens River drainage.

**Flight:** June to early September.

**c. Obscure Alkali Skipper**—*Pseudocopaeodes eunus* near *obscurus* Austin & J. Emmel, 1998.

**Taxonomic notes:** This subspecies differs from other *eunus* “by a combination of its browner, less intensely orange, dorsal surface and heavier black along the veins, outer margin and basally on both surfaces” (Austin & Emmel, 1998a).

**Sierra Nevada Type Locality:** Nevada, Carson City, Eagle Valley, Lompa Lane at Airport Road (the latter combines with Hot Springs Rd. and Graves Lane).

**Records: California: Mono County:** Hot Springs, Hot Creek 31 May 1979 (MS); Hot Creek (visitor day area) and river bridge below day area 10 June 2001 (GTA); Mammoth 9 July year (GTA). S of Cottonwood Rd, Mono Lake 27 June 1998 (GTA); Dechambeau Hot Springs, Mono Lake 5 July 1980 (GTA) and 6 June 2017 (KN), N shore of Mono Lake 10 June 2001 (GTA).

**Mono County:** McGee Bay NE arm Crowley Lake 15 June 2017 (KN). **Nevada: Carson City County:** Carson City, Eagle Valley, Lompa Lane at Airport Rd 13 June 1986 (GTA).

**Distribution: California:** Mono County. **Nevada:** Carson City and Washoe counties. There is a record from near Reno.

**Habitat:** Saltgrass areas along lakes and streams in the Great Basin at the eastern edge of the Sierra Nevada.

**Conservation:** This subspecies requires legal permits to be collected and has endangered status. The main concern is land development and a lowering water table in a growing community along with a limited distribution. It is possible some of the southern Mono County localities (including those outside the Sierra Nevada) for this species may be subspecies *flavus* or a blend zone between *obscurus* and *flavus*.

**Flight:** (31 May) June-July.

**27. Juba or Yuba Skipper—*Hesperia juba*** (Scudder, 1874).

This is a very common butterfly in much of the Sierra Nevada, but there are few records inside the National Parks. Conversely, there are many records just outside Park boundaries. Butterfly watchers, photographers and collectors probably don't look for Juba Skippers, a common skipper in much of the state. Possibly, this butterfly prefers areas that are not National Park worthy to live in, though both the west and east slopes outside Yosemite are quite scenic and *Hesperia juba* can be regularly seen in many of those places.

**Type Locality:** California...neighborhood of Salt Lake City, Utah.

**Distribution:** All Sierra Nevada counties in California and Nevada:

**National Park Records:** **Sequoia NP:** Huckleberry Meadow 14 Sep 1975 (PN); Tulare Co.: Potwisha 26 May 1929 (E.C. Van Dyke). **Yosemite NP:** **Mariposa County:** Yosemite Valley 17 June 1932 (McQueston), 16 June 1936 (JWT). **Tuolumne County:** Tuolumne Meadows July (California Academy of Sciences).

**Habitat:** Upper Sonoran, Transition, Canadian and Hudsonian Life Zones: This species seems more likely to be found in dry areas with sagebrush and is a common visitor to blooming rabbitbrush and yellow flowered composites.

**Flight:** Double brooded in many lower elevation localities; single brooded along the Sierran Crest and at high elevations. Records extend from late March to early November.

**28. Uncas Skipper *Hesperia uncas*** W. H. Edwards, 1863.

**Taxonomic notes:** The name near *macswaini* MacNeill has been applied to the rare captures of this species on the east side of the Sierra Nevada but the name *giuliani* McGuire, 1998 may also apply, especially at lower elevations near the eastern base of the range in Mono County. The LACM has few such specimens and I personally have collected only four specimens of this species in the Sierra Nevada, too few to assess to subspecies.

**Type Locality** for *macswaini* MacNeill: Blanco's Corral, White Mountains, Mono County, California. **Type Locality** for *giuliani*: Adobe Hills, Mono County, California.

**Records:** **California:** **Inyo County:** Near Bishop Creek Lodge, SF Bishop Creek above 8400' 8 July 1979 and along fishing trail above Table Mtn. Camp at about 8600' 12 July 2014 (both KD). **Mono County:** Green Canyon 10 June 1996 (BRB); Mill Creek Canyon 9 Aug 1996 (BRB); Wolf Canyon 11 Aug 1996 (BRB); ridge near Green Canyon SW of Bridgeport 1 Aug 2004 (KD); Lundy Lake below Dam 23 June 2012 (KD).

**Distribution:** **California:** Inyo and Mono counties. **Nevada:** Carson City, Douglas and Washoe? counties It is not clear what subspecies occur in those Nevada counties.

**Habitat:** Transition and Canadian Life Zones on the Sierra Nevada east slope in areas with pines and sagebrush, males are sometimes found at wet spots.

**Flight:** Mid-June to early August.

**29. *Hesperia colorado*** (Scudder, 1874).

**Taxonomic note:** Genomic research posted online (Cong et al, 2019) shows that the European *Hesperia comma* (Linnaeus) is only known to occur in North America in a small portion of Alaska and all other North America members of the complex are *Hesperia colorado*.

Four or more subspecies or segregates are found in the Sierra Nevada.

**a. Western Branded Skipper—*Hesperia colorado idaho*** (W. H. Edwards, 1883).

**Taxonomic notes:** This skipper had been previously been going under the name *harpalus* until James Scott (1998) revised the species, which has also gone under the name *Hesperia comma* in the belief it was conspecific with that European skipper.

**Sierra Nevada Type Locality:** Lake Tahoe, Placer County, California.

**Records: California: Alpine County:** Hope Valley 18 July 1948, 20 Aug 1949 (CDM). **El Dorado County:** Echo Lake 1 Aug 1937 (JWT); Fallen Leaf Lake 14 July 1925 (G.P. Engelhardt), 4 July 1958 (O.E. Sette); Mt. Tallac 15 July 1909, 20 July 1909 (F.X. Williams). **Inyo County:** Nine Mile Canyon, SF Bishop Creek; Whitney Portal 9 July 2009 (KD). **Kern County:** E of Walker Pass 4 June 2004 (KD); Kelso Valley SW of Sageland 15 June 1980 (KD), Lamont Peak area 31 May 1977 (MS); Piute Mountain Vista 4 July 2000 (KD); Bird Spring Pass 1 July 2000 (KD). **Mono County:** Conway Summit 4 July 1959 (PAO); Lee Vining 2-4 Aug 1975 (KD); Tom's Place 22 June 1986 (KD); Leavitt Meadows 14 Aug 1950 (JWT); Lower Rock Creek Gorge 9 & 20 May 1997 (KD); Lundy Lake VII-4-1959 (PAO, RES); Mt. Dana, 11,000' 1 Aug 1959 (RES); Saddlebag Lake 21 July 1952 (R. Mackie); Sherwin Summit, 7000' 31 July 1959 (RES). **Nevada County:** Sagehen Creek, Hobart Mills 9 July 1954 (JAP); Truckee 24 July 1909 (F.X. Williams). **Plumas County:** Graeagle 1 July 1961 (D. Dirks, AOS); Mohawk 10 July 1957 (D.C. Rentz). **Sierra County:** 1 mi. E of Calpine 5 July 2007 (SEWABA-C); 5 mi. W of Loyalton 1 Aug 1951 (CDM); Sierraville 26 Aug 1948 (J.W. MacSwain), 15 Sep 1950, 1 Aug 1951 (CDM); Smithneck Road, SE of Loyalton 4 July 2007 (SEABA-C). **Tulare County:** Big Pine Mountain area, 3 Aug 1981 (KD); Kennedy Meadows 10 July 1982 (KD), Lamont Peak area 22 May 1982 (KD), Bald Mountain 9400' 10 July 1982 & 21 June 1985 (KD). **Tuolumne Co.:** Gaylor Lakes 26 Aug 1956 (RLL); Sonora Pass 30 July 1954 (CDM); Sonora Peak 6 Aug 1959 (CDM).

**National Park Records: Yosemite NP: Tuolumne County:** Mt. Dana, west slope 16 Aug 1957 and 30 Aug 1958 (JWT); Crest W of Tioga Pass 18-20 Aug 1957 (AOS); Gaylor Lakes Trail 31 Aug 1958 (JWT). These records may represent an *idaho* X *harpalus* blend zone.

**Distribution: California:** Alpine, El Dorado, Inyo, Kern, Madera, Mono, Nevada, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe

counties. This is the subspecies that occurs on the east slope of the Sierra Nevada and meets the Great Basin, and then ranges east to Colorado.

**Habitat:** Unrestricted in all life zones. Drier slopes in sagebrush; adults frequent flowers and occur near water, males go to hilltops.

**Flight:** Mid-May to September, depending on locality and elevation.

**b. Yosemite Branded Skipper—*Hesperia colorado harpalus*** (W. H. Edwards, 1881).

**Taxonomic notes:** What was formerly called *harpalus* is now known as subspecies *idaho*. The name *harpalus* has now been applied to populations on the west side of the Sierra Nevada at higher elevations, the previous common name “Yosemite” is here retained. The scientific names *yosemite* Leussler, 1933 (TL “near Yosemite, Mariposa County, Calif.) and *cabelas* (W. H. Edwards) (TL: corrected to California, probably west of the Sierra Nevada by Austin) are currently viewed as synonyms of *harpalus*.

**Sierra Nevada Type Locality:** Sierra Nevada Mts., west of Carson City.

**Records: California: Calaveras County:** Camp Wolfeboro B.S.A., NF Stanislaus River, 20 June 1954 and 2 Aug 1954 (PAO); Murphy’s Sep (J.E. Cottle); **El Dorado County:** Chipmunk Ridge, El Dorado National Forest 17 July 1947 (RLL); Glen Alpine Creek 18 July 1909 (F.X. Williams); Pollock Pines 19 July 1953 (J.D. Lattin). **Fresno County:** 4 mi NE of Auberry 2 Aug 1956 (R.O. Schuster); Huntington Lake 21 July 1956 (O.E. Sette) -- several other dates and collectors. **Nevada County:** Truckee 17 July 1926 (CAS). **Placer County:** Auburn 11 Sep 1955 (R.D. Cuyler); Deer Park 4 Aug 1909 (E.J. Newcomer). **Sierra County:** 8 mi E of Downieville 30 June 1959 (O.E. Sette); 3 mi. S of Gold Lake 1 July 1961 (D. Dirks, AOS). **Tuolumne County:** Dardanelle 5 Aug 1961 (D.C. Rentz); Jacksonville 15 Sep 1954 (CDM).

**National Park Records: Sequoia NP: Tulare County:** Mineral King, Monarch Lakes Trail 8500’ 26 July 1985 (KD); Timber Gap 22 July 1991 (KD); White Chief Trail 9200’ 23 July 1992 (KD); Tokopah Falls Trail 12 June 1990 (KD). **Yosemite NP: Mariposa County:** Sentinel Dome 3 Aug 1946 (F.H. Rindge); Wawona 27 Aug 1946 (JWT). **Tuolumne County:** Grand Canyon of the Tuolumne River 20 Aug 1954 (PAO); Smoky Jack 4 July 1954 (JWT).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. Populations in Kern County reported as *harpalus* are actually part of a complex blend zone of several subspecies.

**Habitat:** This skipper occurs in Upper Sonoran, Transition and Canadian Life Zones, blending with subspecies *idaho* along the Sierra Crest and in the High Country. The most usual habitats are in drier areas along streams or in canyons, often in mixed coniferous forest or even in coniferous forest. Adults are highly attracted to dogbane.

**Flight:** June-early September. The actual late records are difficult to evaluate because a late summer and fall segregate occurs at many of the same localities. All populations of this species are reportedly single brooded, but at many locations both this subspecies and a later flying member of the complex occur, but at different times. See comments under the fall flying segregate.

**c. Leussler's Branded Skipper—*Hesperia colorado* near *leussleri* Lindsey, 1940.**

**Type Locality:** Warner Hot Springs, San Diego County, California.

**Records: California: Kern County:** Piute Mountain Rd from Bodfish-Havilah summit just below milepost 7 on 4 and 10 June 2004 (KD).

**Distribution: California:** The record above is the only locality where *leussleri* seems to occur in the Sierra Nevada, but populations in the Sherman Pass area and in the Greenhorn Mountains exhibit mixed characters that seem to be a blend of *harpalus*, *idaho* and *leussleri*.

**Habitat:** Upper Sonoran Zone foothill woodland and sagebrush in the Piute Mountains.

**Flight:** The records above are the only known records for this entity in the Sierra Nevada.

**d. Western Branded Skipper—*Hesperia colorado*-early summer flying segregate.**

This segregate has been called “yosemite”, now *harpalus* but differs by being a mix of characters from *harpalus*, *leussleri* and *idaho*. This segregate occurs on the Sherman Pass Rd. in Tulare County and in the Greenhorn Mountains in Kern County where a similar looking late summer/early fall segregate flies a few weeks later in the season. Since this species is known to be only single brooded, it seems that similar looking entities seem to be occurring as separate biological entities, especially since in some areas only one of the entities occur and not the other.

**Records: California: Kern County:** Greenhorn Mountain Park 5100' 13 Aug 1961 (C. W. O'Brien); **Tulare County:** 2-3 mi. S of Johnsondale 6 June 1983 (KD) and 31 May 1986 (KD); Sherman Pass Rd. at 4900' 12 June 99 (KD); Sherman Pass Rd. at Alder Creek 6800' 18 June 1983 (KD). These records have been reported as *yosemite*, *harpalus* and *idaho* but James Scott and others believe these names represent different populations.

**Distribution:** Kern and southern Tulare counties.

**Habitat:** Upper Sonoran and Transition Life Zones. This skipper occurs in foothill woodland and openings in forests, along roadsides and near streams.

**Flight:** June-July, possibly overlapping the late summer/fall segregate in August.

**e. Western Branded Skipper—*Hesperia colorado***, Sierra Nevada fall flying segregate.

**Taxonomic notes:** Shapiro & Forister (2005) reported this autumn flying race (left unnamed) occurs “on serpentine and gabbro soils in Nevada, Placer and El Dorado Counties on the west slope, as well as one on limestone in Calaveras County and one on an undetermined substrate in Mariposa County was reported by Oakley Shields. Shapiro & Forister also concluded that “These autumn “races” average a little darker than nearby *harpalus* but have no definite wing, genitalic, or molecular characters to allow them to be identified without collection dates...or support the hypothesis that the Sierran autumn “races” are actually the Inner Coast Range subspecies “*tildeni*.” The authors in their abstract stated that “Due to complete temporal isolation, the two “races” of *H. comma* are functioning as effective biological species.”

The above study did not include similarly late summer-early fall lighter colored populations of this species that occur on the west slope of the Sierra Nevada on similar poor-quality soils or rock that occur in Tulare and Kern counties in the southern Sierra Nevada, including the subrange Greenhorns and Piute Mountains. Some of the localities in that region also have early summer flying members of the *Hesperia comma* complex that occur in many (but not all) of the same areas. It is possible that some southern Sierra Nevada populations might be subspecies *tildeni* Freeman, 1956 which occurs not far away to the south in the Tehachapi Mountains.

**Records: California: Fresno County:** Road overlooking Redinger Lake near Italian Creek (Italian Bar Rd near Jose Rd. Jct.) 4 Sep 2004 (KD). **Kern County:** Hills SW of Butterbrecht Peak 21 Aug 1978 and 26 Aug 1988 (KD); Piute Mountains: Hooper Hill 10 Sep 1979 (KD); E slope Piute Mts. 2-3 mi W of Sageland 13 Aug 2005. Greenhorn Mountains: Old State Rd 31 Aug 93 & 22 Aug 2003 (KD); Sawmill Rd, 3-6 mi W of SR 155, 17 Sep 2015 (KD). **Mariposa County:** Footman Ridge on serpentine above Jerseydale early September to mid-October (AOS). **Tulare County:** Sherman Pass Rd E of Kern River 7000’-8000’ 6 Sep 1999 & 21 Sep 2002 (KD); Calkin’s Flat and Fairview 25 Aug & 15 Sep 2002 (KD) in area burned in major fire 6 weeks earlier, the fire missed these two localities; 1-2 mi S of Peppermint Creek 15 Aug 2016 (KD); Greenhorn Mountains: Old State Rd 31 Aug 93; 5 & 21 Aug 2006 (KD); Sawmill Rd near Isabella Highlands 17 Sep 2015 (KD).

**National Park Records: Mariposa County:** 2 mi N of Yosemite Creek Camp 11 Sep 1974 (RLL). **Tuolumne County:** Hetch-Hetchy Dam 3800’ 11 Sep 1982 & 25 Aug 1983 (RLL).

**Distribution: California:** Calaveras, El Dorado, Kern, Mariposa, Nevada, Placer and Tulare counties. There are both early summer and late summer populations that occur along the Kern River and on the Sherman Pass Rd.

**Habitat:** Serpentine or other poor soils in Upper Sonoran, Transition and Canadian Life Zones.

**Flight:** August to early October.



**30. Columbian Skipper—*Hesperia columbia*** (Scudder, 1872).

This is a species little seen by most lepidopterists, I spent years unsuccessfully searching for it, then found it when I gave up the search, then found it at an unexpected locality. *H. columbia* is a species that seems to thrive after fires, then disappears as the host bunch grasses get crowded out by plant succession or long-term drought.

An interesting thing about *columbia* is usually only males are found. Females are almost never seen. The exception to this took place along the Kern River in the Limestone Camp area (Tulare County) in the fall months the first 2-3 years following the 2002 McNally fire. Both males and females could be found going to nectar on asters right along the Sierra Hwy along the Kern River.

**Type Locality:** California.

**Records: California: Kern County:** Piute Mountains: Hillside 3.2 mi S. Bodfish on Bodfish-Caliente Rd 3000' 31 Mar 1972 (REW); 4 mi S. of Bodfish 11 May 1975 (JB). Greenhorn Mountains: E slope W of Kernville 12 Sep 1932 (NC) data from William McGuire; south end of Kern Plateau, Chimney Peak Rd near Lamont Peak 6 Oct 2001 (E of Sierran Divide, KD).

**Mariposa County:** Footman Ridge summit SE of Jerseydale 4600' 23 May 1974; 15 May 1976 and 28 Sep 1987 (all AOS); Hunter Valley Mountain 18 Apr-8 May 1982 & 21 Sep 1982 (AOS).

**Tulare County:** Many records from along the Kern River off the Sierra Hwy at Ant Canyon 19-21 Apr 2005 & 3 Oct 2006 (KD), 1 mi N Dam and Roads End 19-21 Apr & 3 Oct 2006 (KD); Limestone Camp 21 & 29 Apr 2005 (KD); 22 & 30 Oct & 5 Nov. 2005 (KD) and 2 mi S Johnsondale 29 Apr 1997 & 30 Oct 2005 (KD); Sherman Pass Rd at Dry Creek Canyon 4300' 21 May 1990 (KD) at mud, hilltop above helipad and Brush Creek and up to 4900' and E of Sherman Pass near 8000' near Bald Mountain E of the Sierran Divide, 2 July 2010 (KD); Greenhorn Mountains, Baker Ridge 7753' 4 July 1998 (KD).

**Distribution: California:** Kern, Mariposa and Tulare counties. This skipper has a very limited range in the Sierra Nevada (Shields, 1978), often frequenting serpentine hilltops where this skipper often flies with *Erynnis brizo lacustra* in the spring in scrub oak covered hills.

**Habitat:** This little seen skipper occurs in the Upper Sonoran Life Zone in foothill woodland, juniper woodland and chaparral. Males often go to hilltops or mud or visit blooming rabbitbrush in the fall. This is primarily a California Coast Range species and a near California endemic. For many years, few knew it occurs in the Sierra Nevada, the fall brood flies after most collectors put away their nets and in places where few would expect to find a prized butterfly.

**Flight:** Two broods: Late March to June; mid- September to early November.

**31. Lindsey's Skipper—*Hesperia lindseyi*** (W. Holland, 1930).

Two subspecies occur in the Sierra Nevada: This species can be difficult to distinguish from *Hesperia colorado* on the Sierra Nevada west slope. Generally, *Hesperia lindseyi* flies earlier in the season than *H. colorado*.

**a. Lindsey's Skipper**—*Hesperia lindseyi*-Southern California segregate.

**Records: California: Kern County:** Piute Mountains: 1-3 mi. S of Bodfish 14 & 21 May 1976 (KD); Hooper Hill 30 May 1979 and ridges to top of Hooper Hill 30 May 2002 (KD); Erskine Creek Canyon E of Lake Isabella (town) 23 May 2001; 10 May 2002 and 5 June 2005 (all KD). Greenhorn Mountains: Kern Canyon, Lucas Creek 17 May 1996 (KD). **Tulare County:** Greenhorn Mountains: 3-4 mi. E of White River 14 & 15 June 1957 (PAO).

**Distribution: California:** Kern and extreme southern Tulare county.

**Habitat:** This species occurs in Upper Sonoran Life Zone in foothill woodland in dry areas where the oat grass host grows. Adults visit thistles and *Yerba santa* in the Piute Mountains south of Bodfish, Hooper Hill, Kern Canyon and in a very small area in the Greenhorn Mountains. At times, most adults are seen by flushing them out of the oat grass itself. Lindsey's Skipper does poorly during drought years and may not be seen in such years.

**Flight:** Mid-May to early July.

**b. Sierran Lindsey's Skipper**—*Hesperia lindseyi eldorado* Emmel, Emmel & Mattoon, 1998.

**Taxonomic notes:** Stated in the original description: "This subspecies is fairly similar to nominotypical *lindseyi*, but differs in its slightly darker aspect dorsally, particularly in females, and its somewhat duller and grayer aspect, as well as slight reduction in the light spots" (Emmel, Emmel & Mattoon, 1998f). Confusion with the similar looking *Hesperia colorado* makes recognizing *lindseyi* north of Kern County difficult.

**Sierra Nevada Type Locality:** El Dorado County, Sierra Nevada, California.

**Records: California: Calaveras County:** 1 mi SE of Glencoe 2700' 19 June 1982 (RK). **El Dorado County:** West slope Sierra Nevada, Meadow Brook barrens, Traverse Creek 18 June 1993 (AMS). **Mariposa County:** Jerseydale (AOS, fide KR). **Nevada County:** S Yuba River Canyon near Washington on serpentine 3 June 1990 (AMS).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Mariposa, Nevada, Placer, Sierra, and Yuba counties. This skipper occurs in localized scattered localities on the west slope of the Sierra Nevada from Butte County southward to Mariposa County. Because of the phenotypical similarities with *Hesperia colorado*, few published records and the few people who seek skippers, this is one of our least known skippers in the Sierra Nevada.

**Flight period:** Late May to mid-July.

**32. Sierra or Miriam's Skipper**—*Hesperia miriamae miriamae* MacNeill, 1959.

This is one of the most difficult butterflies to see, photograph or collect because access to their habitat involves major climbs or hikes up steep dangerous terrain at very high elevations where breathing is difficult.

**Sierra Nevada Type Locality:** Near Mono Pass 12,000', northwest Inyo County, California.  
**Records: California: Fresno County:** Duck Lake 6 mi SE of Crystal Crag Lodge 3 Aug 1961 (RES). **Inyo County:** Mono Pass August 1956, 1957 and 1958 (C. D. MacNeill, (the type series); 30-31 Aug 1967 (PAO); Olancho Peak (Derham Giuliani, records unavailable). **Mono County:** N slope Dana Plateau above Ellery Lake 16 Aug 1975 (seen, KD) and 29 July 2013 (KD); above Saddlebag Lake 22 July 1980 (Jack Levy); ridge NE above Tioga Pass 30 Aug 1989 (RPM); ridge between Saddlebag Lake & Gardisky Lake 2 Aug 2017 (Brian Banker). **Tuolumne County:** N slope of Mt. Dana 11,500' 8 Aug 1981 (RLL); Virginia Peak, 8 mi NW of Saddlebag Lake 3 Aug 2003 (SS).

**National Park Records: Sequoia NP: Tulare County:** Mt. Silliman 10,900' 17 July 1981; Alta Peak 11,200' 19 July 1981; Vandevere Mtn. 4 mi S of Mineral King 11, 947' 28 July 1982 (all Derham Giuliani)...those localities have since been added to Sequoia National Park; Sierra Nevada Crest, Shepherd Pass 26-28 July 1966 (S. Johnson). **Yosemite NP: Tuolumne County:** N. slope of Mt. Dana 31 July 1958, 8 Aug 1960 (AOS) and 8 Aug 1981 (RLL); Virginia Peak, 8 mi NW of Saddlebag Lake 3 Aug 2003 (SS); Coxcomb Peak 26 July 1958 (AOS).

**Distribution: California:** Alpine, Fresno, Inyo, Mono, Tulare and Tuolumne counties.

There are no Sierra Nevada records from Nevada.

**Habitat and General:** Arctic-Alpine Life Zone. This skipper is one of the ultimate challenges to find, photograph or collect. It occurs well above timberline often in very windy conditions on precipitous slopes, usually from 11,000' to over 14,000' elevation accessible only by climbing dangerous rocky terrain or hiking up long steep trails. Their habitat is rarely accessible by roads. This species is undoubtedly well distributed on such higher peaks from Olancho Peak and in Sequoia National Park in the south and as far north as Alpine County.

Because of such difficulties the Sierra Skipper is little seen or collected. Because so few are seen, some conservationists have concluded *Hesperia miriamae* must be protected and monitored. In this case, the butterflies very hard to reach habitat protects it and most of its habitat is only accessible by helicopter or dedicated back country hikers. Few collectors have been able to collect *miriamae* and those I know who have may have one or two specimens.

**Flight:** July to August.

**33. Nevada Skipper—*Hesperia nevada sierra*** Austin, J. Emmel, T. Emmel & Mattoon, 1998.

**Taxonomic note:** The subspecies name *sierra* now applies to the Sierra Nevada population with the nominotypical *nevada* found to the east in the Rocky Mountain states.

**Sierra Nevada Type Locality:** Carson Range, Tahoe Meadows, Nevada State Route 431, 2.4 miles west of Mt. Rose (road) Summit 2695 m, Washoe County, Nevada.

**Records: California: Alpine County:** Carson Pass 29 June 1957 (JAP); Ebbetts Pass, 8730' 5 July 1958 (RES); Leviathan Peak, Monitor Pass, Humboldt-Toiyabe National Forest 15 July

2019 (PAO-EBO). **El Dorado County:** Echo Lake 29 June 1961 (AOS); Mt. Tallac 15 July 1909 (F.X. Williams). **Fresno County:** Near Kaiser Crk. 8400' 24 June & 7 July 1930 (LMI). **Inyo County:** Andrews Camp, Bishop Creek 10 June 1935, 1 July 1935 (LLM); Mono Pass 30-31 Aug 1967 (PAO); SF Bishop Creek 9300' 7 & 8 July 1979; 23 June 1986 & 6 July 2006 (KD) and Table Mtn Camp 12 June 2014 (KD). **Madera County:** Rainbow Falls, 5 mi W of Crystal Crag Lodge 3 Aug 1961 (RES). **Mono County:** Lake Mary near Mammoth Lakes 4 July 1959 (RES; PAO; Nora Opler); Mammoth Crest 7 July 1933 (JWT); Minaret Summit, 8965', Inyo National Forest 17 July 2019 (PAO-EBO); ridge SE of Sonora Pass 7 & 9 July 1987 and 12 July 1994 (KD); hills NE of Sonora Pass 9 Aug 1998 (KD); Little Antelope Canyon 14 June 1996 (BRB); Warren Creek 26 June 1961 (D. Dirks, AOS). **Sierra County:** Babbitt Peak, 8760', Bald Mountain Range, Tahoe National Forest, 21 June 2016 (SFSU-BSNC). **Tuolumne County:** W of Sonora Pass 10,000' 3 July 1959 (RES, PAO, Nora Opler); Leavitt Peak 11,000' 29 Aug 1967 (PAO). **Nevada: Washoe County:** Mt. Rose 18 July 1958, 22 July 1958 (F. T. Thorne).

**National Park Records: Sequoia NP: Tulare County:** There is a reported record by Tom & H. Blevins for the Park, but there are no specific localities or dates.

**Distribution: California:** Alpine, Amador, El Dorado, Fresno, Inyo, Madera, Mono, Nevada, Placer, Plumas, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Canadian, Hudsonian and Arctic-Alpine Life Zones. This skipper can be very common but is often intensely local in small rocky outcrops or alpine-fell fields or seepages among grasses and small boggy meadows.

**Flight:** June-August.

### **34. Sandhill Skipper—*Polites sabuleti* (Boisduval, 1852).**

There are four subspecies in the Sierra Nevada:

**Distribution: California** for the complex as a whole: Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. The reason I include this list is because when range maps were made, lists were not compiled for subspecies, only for species. In addition, many new subspecies have been named in the past 25 years and some subspecies may actually be species-level taxa. These are some issues regarding distributions of this and other species in the Sierra Nevada.

#### **a. Sandhill Skipper—*Polites sabuleti* (Boisduval, 1852).**

**Type Locality:** San Francisco, San Francisco County, California.

**Records: California: Inyo County:** Bishop 7 Aug 1978 (KD); Lubken Canyon 13 Aug 2001 & 1 Sep 2002 (KD), Lone Pine, Olanca 29 Aug 1978 and 21 Aug 1981 (KD); Round Valley, Old Sherwin Road 19 July 2019 (PO-EBO). **Kern County:** Kern River Valley at Weldon: 4 & 21 Aug 1981 (KD); 2 Oct to 20 Nov 2012 (KD); Onyx 4 & 21 Aug 1981 (KD); Piute Mountains at

Havilah Knolls 30 May 1979 (KD). **Mono County:** W of Walker 15 Aug 1996 (GTA); East Walker River US 395, 1.1 mi S of USFS 142, 26 Aug 1997 (GTA); Mono Lake 2, 4 & 17 Aug 1975 (KD); Bridgeport 17 Aug 2000 (KD) and Hot Creek near Mammoth 24 Apr 2006 (KD), these populations are atypical and tend towards *genoa*, but included here based on comments by George T. Austin (1987).

**Tulare County:** Kaweah River below Lake Kaweah 13 Apr 1990 (KD); Chimney Peak Rd 20-21 May 1983 (SOM); 25 May & 16 Aug 1985 (KD); Three Rivers 13 Sep 1991 (KD). **Plumas County:** Greenhorn Creek, SR 70, E of Quincy 30 June 1985 (GTA).

**Distribution: California:** Amador, Inyo, Mono, Nevada, Tulare, Tuolumne?, Plumas and Yuba counties. There are undoubtedly more counties that must have the nominotypical subspecies, this is likely a record keeping issue, and a problem of common Saltgrass-eating skippers not getting their records published.

**Habitat:** Saltgrass flats, pastures, fields and cities and dry valleys where Saltgrass grows.

**Flight:** March-November.

**b. Chuska Skipper—*Polites sabuleti chuska*** (W. H. Edwards, 1873).

**Taxonomic note:** This subspecies tends to be lighter than nominotypical *sabuleti* with spotting on the hind wing more obsolescent. Most records in the state are in deserts, but some populations near *chuska* are found within the southern Sierra Nevada or along the eastern base of the Sierra Nevada.

**Type Locality:** Arizona, suggested to probably be in northern Mohave County by F. Brown and L. Miller.

**Records: Kern County:** N of Kelso Valley 0.8 mi SW of Sageland in Saltgrass pasture above Kelso Creek and pond 15 May 1976; 13 and 21 Oct 2008 (KD).

**Distribution: California:** Inyo, and Kern counties. Populations of this species along US 395 in Inyo County in the Owens Lake and Valley areas show blending between nominotypical *sabuleti* and *chuska*.

**Habitat:** The colony site near Sageland N of Kelso Valley is at a seep pond (created by ranchers who made a dam) with abundant Saltgrass in otherwise Mojave Desert habitat north of Kelso Valley which is in the Sierra Nevada.

**Flight:** Two broods in Kern County: April to October (two broods).

**c. Tecumseh Sandhill Skipper—*Polites sabuleti tecumseh*** (F. Grinnell, 1903).

**Taxonomic notes:** This skipper occurs at high elevations in the Sierra Nevada and some believe *tecumseh* may be a species in itself.

**Sierra Nevada Type Locality:** Little Crabtree Meadow near Mt. Whitney, California.

**Records: California: Inyo County:** Mosquito Flat, end of Rock Creek Road, Inyo National Forest 19 July 2019 (PO-EBO); Mt. Whitney Trail 11,400' 10 Sep 1989 (JFE). **Plumas County:** Round Lake loop, Plumas National Forest (PAO). **Sierra County:** Howard Creek Road, Tahoe National Forest 30 July 2018 (PAO); Lincoln Meadow, Tahoe National Forest 5 July 2007 (SEABA-C). **Tulare County:** Greenhorn Mountains, Poison Meadow near Tobias Peak 7 Aug 1995 (KD) and in meadow N of Mountain Meadow Camp 7000' just N Kern/Tulare Co. line 10 & 24 June 1996 (KD); south end of Kern Plateau near Kern Co. line 2 June 2011 (KD). **Nevada: Washoe County:** Carson Range, Tahoe Meadows 30 June 1987 (GTA).

**National Park Records: Sequoia NP:** Little Crabtree Meadows is inside the Park. **Yosemite NP: Mariposa County:** Tamarack Flat 16 June 1968 (KCH & Jan Hughes); **Tuolumne County:** Tioga Pass 7 July 31 and 18 Aug 1952 (JWT); Tuolumne Meadows 15 Aug 1957 & 3 Sep 1958 (JWT); trail from Lyell Base Camp to summit of Kuna Crest 12,000 7 Aug 1933 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** This subspecies is in the Carson Range in at least Washoe County. Few general records were given above, this is a common and widespread skipper.

**Habitat:** This is a skipper of high elevation subalpine meadows. Adults are usually found in dry spots in such meadows.

**Flight:** Late June to early September.

**d. Sandhill Skipper—*Polites sabuleti genoa* (Plötz, 1883).**

**Taxonomic Note:** This subspecies seems smaller and more darkly marked than nominotypical *sabuleti*.

**Sierra Nevada Type Locality:** Nevada, near Genoa, Carson River Valley, Douglas County.

**Records: California: Nevada: Carson City County:** Carson City, Lompa Lane at Airport Drive 2 July 1982 & 9 Sep 1984 (GTA); Carson City Hot Springs 14 Aug 1979 & 1 Sep 1991 (McGuire Center). **Douglas County:** Genoa, base of the Sierras 23 July 2009 (BOA); Carson Valley, Scossa Ranch 23 Aug 1981 (McGuire Center); Nv 206, 3.4 mi E Genoa 23 July 2009 (BOA).

**Distribution:** This subspecies is likely more widely distributed in Alpine and Mono counties and in the Lake Tahoe region counties. The records above are the known distribution, but *genoa* must be more widely distributed.

**Habitat:** Saltgrass habitats, often on flats or pastures.

**Distribution: Nevada:** Carson City, Douglas and Washoe counties.

**35. Sonoran Skipper—*Limochores (Polites) sonora* (Scudder, 1872).**

**Taxonomic notes:** Recent work by Zhang, Cong, Shen, Opler and Grishin (2019a & b) showed this skipper belongs in another genus.

There are two subspecies in the Sierra Nevada.

**a. Sonoran Skipper—*Limochores sonora sonora* (Scudder, 1872).**

**Sierra Nevada Type Locality:** Sierra Nevada, California.

**National Park Records: Kings Canyon NP: Tulare County:** SE of Buena Vista Peak 10 July 89 (KD). **Sequoia NP: Tulare County:** Mineral King: Monarch Creek 9000', 26 July 1985 (KD); White Chief Trail 9400' 23 July 1992 (KD); Halstead Meadow and Wolverton 15 Sep 1987 (KD); Dorst Camp 16 July 1992 (KD). **Yosemite NP: Mariposa County:** Trail between Camp Curry and Glacier Point 9 July 1933 (JSG); Yosemite Creek S of Tioga Rd 17 July 1933 (JSG); Camp off road to Glacier Point, creek above Bridalveil Falls 23 June 1959 (JSG). **Tuolumne County:** Tuolumne Meadows 14 Aug 1957 and 3 Sep 1958 (JWT).

**Distribution: California:** All counties. No records are given for general records as this is a common species widely distributed. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran, Transition, Canadian and Hudsonian Life Zones: This is a common species along streams, in wet meadows and forest glades.

**Flight:** Late June to mid-September.

**b. Great Basin Sonoran Skipper—*Limochores sonora longinqua* Austin, 1998.**

**Taxonomic notes:** This subspecies is paler and yellower than nominotypical *sonora*.

Garth & Tilden (1963) referred to this population at Mono Lake as a “somewhat lighter phase” that occurs in the higher parts of the Great Basin. Austin (1998a) named this lighter “phase” as a subspecies 35 years later.

**Type Locality:** Nevada: Esmeralda County; White Mountains, Trail Canyon 2620m.

**Records: California: Mono County:** NW shore Mono Lake 2-4 Aug 1975 (KD); Little Walker River Rd W of US 395, 17 Aug 2000 (KD); Tom's Place 22 June 1986 (KD); US 395, 9.1 mi N of Bridgeport 5 Aug 1978 (KD).

**Distribution: California:** Mono and Inyo counties. **Nevada:** Douglas County where *longinqua* and nominotypical *sonora* both occur in different habitats. The exact areas in Inyo County where this Great Basin subspecies occurs and where nominotypical *sonora* occurs needs to be worked out. Nominotypical *sonora* is what I believe I have been finding at high elevations at 8300' and above in the Bishop Creek drainage and what I had thought was lower down in the Rovana area of Inyo County, California, but I took no samples to examine.

**Habitat:** Wetlands, meadows and moist grassy ravines where the Great Basin meets the base of the Sierra Nevada east slope.

**Flight:** Late May-early September.

**36. Field Skipper or Sachem—*Atalopedes campestris* (Boisduval, 1852).**

This has my vote as one of the most difficult butterflies to identify from a photograph only showing an individual's ventral markings, but one of the easiest to identify if one can see the upperside field marks. The blackish form "*tenebricosus*" occurs regularly in October and early November in the Weldon area of the Kern River Valley.

**Type Locality:** Sacramento, Sacramento County, California.

**Records: California: Inyo County:** Owens River at Bishop 7 Aug 1978 (KD); Olancho 29 Aug 1978 (KD); Pine Creek Canyon NW of Rovana 6 May 2012 (KD). **Kern County:** Breckenridge Mountain- Havilah area 29 May & 6 June 1979 (KD); Havilah 5 to 12 Sep 1975 (KD); Kernville 3 July 2004 & 17 May 2008 (KD); Weldon 2 Oct to 20 Nov 2012 (KD). **Madera County:** Daulton 21-22 June 1987 (PAO); 3 mi S of Raymond 22 June 1987 (PAO). **Mariposa County:** Jerseydale "occasional" (AOS). **Tulare County:** Greenhorn Mountains: Linn's Valley 4 Aug 1997 (KD); Chimney Peak Rd, Lamont Meadows 16 Aug 1984 & 30 Aug 1986 (KD). **Tuolumne County:** 1 mi. E of Mather (AOS). **Mono County:** Little Walker River Rd W of US 395, 15 Aug 2003 (BG).

**Distribution: California:** Alpine (?), Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Sierra, Tulare, Tuolumne and Yuba counties.

**Nevada:** Douglas and Washoe counties.

**Habitat:** This is a butterfly I rarely see except in areas affected by human influence near pastures, wastelands and overgrown fields, hence the name Field Skipper was used in the past.

**Flight:** April to mid-November. This butterfly tends to be a scarce skipper until late September, October and the first half of November in the Weldon area and then can be found abundantly, more than 50 a day in a small area on blooming rabbitbrush.

**37. Umber Skipper—*Poanes melane* (W. H. Edwards, 1869).**

**Taxonomic note:** This skipper was once placed in the genus *Paratrytone* before skipper specialist John Burns made *Poanes* a transcontinental distributed genus by placing *melane* in it.

**Type Locality:** California, San Francisco Bay area.

**Records: California: Fresno County:** Blue Canyon Rd, 5.5 mi S Dinky Crk. Rd 27 May 2002 (KD); canyon N side of SR 168, 14 mi NW of Shaver Lake 12 Sep 2003 (KD). **Kern County:** Kernville 14 & 21 June 1998 (KD); Weldon Audubon Preserve 26 Sep 1998 (KD); Canebrake Audubon Preserve off SR 178, 23 Apr 2005 (KD); Greenhorn Mts.: Kern Canyon, Clear Creek,



Miracle Hot Springs (=Hobo Camp) 14 May 1972; 21 May & 10 Aug 1976 (KD); Piute Mountains: Erskine Creek Canyon 23 May 2001 (KD); 2 June 2002 & 2003 and 31 May 2004 (all JB). **Madera County:** Sugar Pine 23 May 1992 & 22 May 1993 (KD); Fresno River at Oakhurst 23 May & 8 June 1992 (KD). **Mariposa County:** Briceburg, Merced River 20 Apr 1984 (KD); Fish Camp 8 June 1990 (KD). **Nevada County:** Above Washington 19 Sep 1984 (AMS); Lang Crossing 5000' 30 Aug 1985 (AMS). **Tulare County:** Gateway to Sequoia, common on lantana 6 Sep 1984 & 22 Sep 1992 (KD); Bear Creek off road to Balch Park 25 June 2005 (KD); upper Kern River from N of Roads End to Limestone Camp 1 Oct to 19 Nov 2005 (KD); Sherman Pass Rd E of Kern River 4900' 3 Oct 2006 (KD).

**National Park Records: Sequoia National Park: Tulare County:** 1.8 road miles above Hospital Rock 29 June 1979 (PN); Buckeye Flat 23 May 1981 (PN); Crystal Cave 20 May 2013 (William Yake).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Mono (?), Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. This tends to be a scarce butterfly of the Sierra Nevada west slope that seems rather transient in nature, quite common or at least present, then missing for many years thereafter. This species is likely to be found inside Yosemite National Park as the Fish Camp locality is only about a mile from the Park entrance.

After the 2002 McNally Fire burned the Upper Kern River at Limestone Camp and the Sherman Pass area in Tulare County, this species which had never been seen in that area suddenly became abundant, only to virtually disappear about 3 years later. Is this a fire recovery specialist? I rarely now see an individual in that area.

**Habitat:** Upper Sonoran and Transition Life Zones. This skipper is usually seen along streams, often near shade in foothill woodland or in mixed coniferous forest.

**Flight:** Two broods mid-April-June and August-early November at lower elevations; one brood during the summer at higher elevations.

### **38. Woodland Skipper *Ochlodes sylvanoides* (Boisduval, 1852).**

Two subspecies occur in the Sierra Nevada.

#### **a. Woodland Skipper—*Ochlodes sylvanoides sylvanoides* (Boisduval, 1852).**

**Sierra Nevada Type Locality:** Queen Lily Campground near Belden, North Fork Feather River Canyon, Plumas County, California.

**Records: California:** Kern County: West below Walker Pass near Canebrake Creek 22 Aug 2006 (KD) and wooded thicket along Kelso Creek and road W of Sageland 25 Sep 2009 (KD). These populations do not appear to be subspecies *omnigena*. No other records are provided as this skipper is common and widely distributed.

**National Park Records:** **Kings Canyon NP:** **Tulare County:** *Wilsonia* 18 July 1989 (KD). **Sequoia NP:** Ash Mountain and Potwisha 6 Sep 1985 (KD); Generals Highway 2000' to 6000' above Ash Mtn. 15 Sep 1987 (KD); Mineral King Rd at entrance to Park 19 July 1993 (KD). **Yosemite NP:** **Mariposa County:** Yosemite Valley July 1933 (JSG) and Crane Flat 18 Aug 1957 (JWT). **Tuolumne County:** Hetch-Hetchy 13 July 1956 (JSG).

**Distribution:** **California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. It is very likely nominotypical *sylvanoides* occurs at higher elevations in some areas on the east side of the Sierra Nevada.

**Habitat:** Upper Sonoran, Transition, (Canadian) Life Zones. This common and widespread skipper is found in foothill woodland, chaparral and in mixed coniferous forests. Adults visit flowers freely along roads and in canyons.

**Flight:** July-early October.

**b. Great Basin Woodland Skipper—*Ochlodes sylvanoides omnigena* Austin, 1998.**

**Taxonomic notes:** This Great Basin subspecies is smaller and lighter than nominotypical *sylvanoides* with a tendency of heavier marginal over scaling which makes this subspecies look even paler.

**Type Locality:** Nevada, Lander County, Toiyabe Mountains, Kingston Canyon 2285m.

**Records:** **California:** **Inyo County:** Nine Mile Canyon 26 Aug 1983 (KD); upgrade to Whitney Portal 1 Sep 2002 (KD); Big Pine Creek Rd 27 Aug 2012 (JFE, SOM, Charles Hageman); Mono Lake 17 Aug 1975 (KD); Little Walker River Rd W of US 395 17 Aug 2000 (KD); Swall Meadow 8 & 25 Aug 1998 (KD); Upper Lee Vining Canyon 12 Aug 2006 (KD). **Tulare County:** Spring, S of Kennedy Meadows 3 Aug 1981 & 21 Sep 2001 (KD).

**Distribution:** **California:** Alpine, Inyo, Mono and Tulare counties. **Nevada:** Carson City, Douglas and Washoe counties in the Carson Range. This butterfly ranges as far south as Nine Mile Canyon, Inyo County. Populations of the species near Walker Pass and near Sageland N of Sageland in Kern County appear closer to nominotypical *sylvanoides*.

Austin (1998a) stated populations of this species in the Carson Range are darker than typical *omnigena* but are still closer to that concept than nominotypical *sylvanoides*.

**Habitat:** This subspecies tends to be common at Mono Lake and at lower elevations near the base of the east slope of the Sierra Nevada.

**Flight:** July-September.

**39. Rural Skipper—*Ochlodes agricola*** (Boisduval, 1852).

There are two subspecies in the Sierra Nevada.

**a. Rural Skipper—*Ochlodes agricola nemorum*** (Boisduval, 1852).

**Sierra Nevada Type Locality:** Queen Lily Campground near Belden, North Fork Feather River Canyon, Plumas County, California.

**Records: California: Alpine County:** NF of Stanislaus River below Avery 20 July 1993 (JRM). **Fresno County:** Upper portion of road to San Joaquin River Gorge 14 May 2004 (KD); Italian Creek above Redinger Lake 11 June 2004 (KD). **Kern County:** Greenhorn Mountains, Cedar Creek 6 to 21 July 1975 (KD) and Old State Rd 20 June 2002 & 2 July 2005 (KD); Kernville 19 May 1980 (KD); Kern Canyon, Democrat Hot Springs 9 June 1971 (KD). **Mariposa County:** Indian Flat 30 May 1959 (JWT); Darrah 29 May 1959 (JWT); El Portal 14 May 1961 (JWT). **Nevada County:** Donner Pass 13 July 1977 (AMS); Portal 14 May 1961 (JWT). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 19 June 2006 (SFSU-BSNC). **Tulare County:** 1-3 mi S of Johnsondale 29 June 1978 (KD); Sherman Pass Rd in side canyon 18 June 1983 (KD); S end of Kern Plateau at True Meadow 20 June 1980 (KD).

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain and Potwisha Camp 17 & 25 May 1985 (KD); Buckeye Flat 17 May 1985 (KD); Mineral King Rd above checking station (Park entrance) 15 June 1993 (KD).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Kern, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. It seems really odd that that *O. agricola* has not yet been found in Madera County. This species has been found in Inyo County, but the subspecies there is *verus*.

**Habitat:** Upper Sonoran and Transition Life Zones. This skipper tends to be fairly common in foothill woodland, chaparral, in canyons, along creeks and at flowers in mixed coniferous forest.

**Flight:** Late April to July.

**b. Verus Skipper—*Ochlodes agricola verus*** (W. H. Edwards, 1881).

**Taxonomic notes:** This rare subspecies of limited range is distinguished by its lighter coloration and less distinguishing field marks.

**Sierra Nevada Type Locality:** Havilah, Kern County, California.

**Records: Inyo County:** Upper Nine Mile Canyon 25 May & 8 June 1985 (KD). **Kern County:** Chimney Peak Rd S of Lamont Peak 5 June 1999 & 18 May 2003 (KD); N of Kelso Valley in ravine 0.7 mi SW of Sageland 26 May, 14 & 29 June 1978 (KD); Piute Mountains near Bald Eagle Peak (=Piute Mtn. Rd MP 7-8 from Bodfish/Havilah summit), 21 July 1978 (KD); Erskine Creek Canyon E of Lake Isabella 20 & 23 May 2001; 5 June 2005 (KD). **Tulare County:**

Chimney Peak Rd, 1 mi N Lamont Peak 14 June 1986 (KD); Lamont Peak 25 June 1982 (KD) and 20 June 1992 (Kevin Davenport).

**Distribution: California:** Extreme southern Inyo, Kern and extreme southern Tulare counties. This butterfly went unseen for about 50 years until rediscovered in a ravine near Sageland N of Kelso Valley. We now know that this skipper has a very small range in the Kelso Valley area, the Piute Mountains, Havilah and near the south end of the Kern Plateau. This skipper is sometimes locally common in wet years.

**Habitat:** Upper Sonoran and lower Transition Life Zones.

**Flight:** Late April to July.

#### **40. Yuma Skipper—*Ochlodes yuma* (W. H. Edwards, 1873).**

**Sierra Nevada Type Locality:** Vicinity of Owens Lake, Inyo County, California. This locality is treated herein as in the Sierra Nevada because a large series of *yuma* at the Natural History Museum of Los Angeles County was taken west of Owens Lake and Olancha along a creek draining the Sierran east slope. **Records: California: Inyo County:** Lone Pine Creek W of Lone Pine 8 Sep 1984 (AR); Lubken Canyon just W of US 395, S of Lone Pine 8 Sep 1984 (KD/AR) 1 Sep 2002 & 20 Sep 1986 (KD); E slope of the Sierra Nevada W side of Olancha (long series in LACM). **Placer County:** Donner Pass, a battered stray 21 June 1988 (AMS). **Tulare County:** Sierra Hwy E of Kern River at Limestone Camp in drainage area, seen 3 July during butterfly count and captured 9 July 2005 (KD). It is unclear if this individual is an accidental import of subspecies *sacramento* Austin or nominotypical *yuma*.

**Distribution: California:** Calaveras, Inyo, Placer (in the Sierra?) and Tulare counties. Mono County records reported from Farrington Camp and Mammoth Camp (Scott, Shields, & Ellis, 1977) are considered doubtful as no *Phragmites australis* grows there and the habitat there appears unsuitable.

**Habitat:** Wet areas with *Phragmites australis* (formerly *communis*) in otherwise dry country. Adults patrol more open areas with flowers on stream benches and readily visit heliotrope and lantana.

**Flight:** Double brooded: Late May-July and August-September.

#### **41. Dun Skipper—*Euphyes vestris* (Boisduval, 1852).**

**Sierra Nevada Type Locality:** Spanish Ranch Road at Meadow Valley Creek, vicinity of fire station in Meadow Valley, 3600', Plumas County, California.

**Records: California: Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 29 June 2017 (SFSU- BSNC); 1 mi E of Clio, Feather River 6 July 2007 (SEABA-C); Meadow Valley 1-3 June 1984 (J. Johnson, R. Leuschner). **Sierra County:** Big Springs, Hwy 49 5 July

2007 (SEABA-C); 2 mi. E Yuba Pass, Hwy 49, Tahoe National Forest 10 July 2012 (SFSU-BSNC).

**Distribution: California:** Nevada, Plumas and Sierra counties. This brownish-colored species is limited to only the northern Sierra Nevada. Despite the apparent lack of records, this species has been reported repeatedly from the Meadow Valley area, a place frequented by collectors and watchers attending Pacific Slope Meeting held near there.

**Habitat:** This skipper flies in woodland meadows, bogs and grasslands.

**Flight:** Late May to early July.

### **Parnassians and Swallowtails. Family Papilionidae.**

#### **42. Clodius Parnassian—*Parnassius clodius* (Ménétries, 1855).**

There are two subspecies and a segregate in the Sierra Nevada. *P. clodius* uses *Dicentra* species as larval hosts, not stonecrops as believed in the past. Collecting records in the Sierra Nevada and elsewhere in Tehama and Trinity counties moved Robert Langston to state in the 1989 Season Summary that “*baldur* intergrades into *sol* at lower elevations.” It also does so in Mariposa and Madera counties southwest of Yosemite National Park.

##### **a. Baldur Parnassian—*Parnassius clodius baldur* W. H. Edwards, 1877.**

**Sierra Nevada Type Locality:** Tioga Pass, Tuolumne and Mono counties, California. This location is on the border of Yosemite National Park.

**Records: California: Amador County:** Silver Lake 12-15 July 1986 (KD); Carson Pass 13 July 1986 (KD). **Fresno County:** Upper Little Line Creek 7000’-8500’ 25 June to 10 Aug 1930 (LMI); above Huntington Lake 7-8 July 2002 (RE). **Kern County:** Sight records in Greenhorn Mountains near Tiger Flat 24 June 1961 (RES) and below Lake Isabella Dam 23 June 1995 (John L. Richards). No further records have turned up in Kern County despite extensive search. **Madera County:** Fresno Dome Camp 1-2 July 1996 & 11 July 1999 (KD); Fresno Dome Trailhead and vicinity—mostly *baldur* but some larger like *sol* 7 July 2016 (KD). **Mono County:** SE side of Saddlebag Lake 13-14 Aug 1970 (KD); road to Saddlebag Lake in ravine near Gardisky Trailhead 26-27 June 2012 (KD); E above Tioga Pass 16 Aug 1975 (KD) and ridge SE of Mt. Conness, 13 & 20 July 1976 (KD). **Placer County:** Squaw Valley near Truckee 14 June 2003 (KD); Donner Pass area per reports from Tom Emmel, JFE & AMS. **Plumas County:** Mills Peak, Plumas National Forest 10 July 2012 (SFSU-BSNC); Round Lake loop, Plumas National Forest 10 July 2012 (SFSU-BSNC). **Sierra County:** Forest road 52, S Bassetts, Tahoe National Forest 9 July 2012 (SFSU-BSNC); Above Jones Valley, Babbitt Peak Road, Tahoe National Forest, 21 June 2016 (SFSU-BSNC). **Tulare County:** W of Sherman Pass in side canyon at about 8300-8600’ 8 Aug 1980; 25 June & 13 July 1981 (KD); at Alder Creek crossing at 6800’ 20 June 1999; 3 & 9 July 2009 (KD); Greenhorn Mountains, N facing slope Baker Ridge 6500-7500’ 4 & 24 July 1995 (KD); Cherry Hill Rd (S off Sherman Pass Rd.), south to near Poison Meadow 4 July 2003 (FH); NE Horse Meadow E of Cherry Hill Rd 15 July 2006

(KD & RPM); southern limit for the Sierra Nevada. **Tuolumne County:** Niagara Creek and Eagle Meadow Rd S of SR 108, 8 July 1987 & 13 July 1994; 7 & 8 July 2009 (KD).

**National Park Records: Sequoia NP: Tulare County:** Mineral King Valley 5 July 1985; 9 June 1988 and 22 July 1991 (KD); Mineral King, Farewell Gap Trail 30 July 1983 (PN); Monarch Lakes Trail 26 July 1985 (KD); Timber Gap Trail above 9000' 11 Sep 1983 (PN & Gary Pavlik); 22 July 1991 (KD); White Chief Trail 9500' 23 July 1992 (KD); Silver City 9 June 1988 (KD) and Alta Peak 12 & 18 July 1960 (J. H. Gerdes). These were the high elevation *baldur*, not the larger sized Sequoia/Kings Canyon segregate. **Yosemite NP: Mariposa County:** Yosemite Creek above Yosemite Falls 7 July 1956 (JSG); Tenaya Canyon 11 July 1958 (AOS). **Tuolumne County:** Tioga Pass 7 July 1931 (JWT); Crest W of Tioga Pass 12 July and 18 Aug 1957 (AOS); Mt. Dana 8 Aug 1933 (JSG); White Wolf 10 July 1956 (JSG)

**Distribution: California:** Alpine, Amador, Calaveras, Inyo, Kern (?), Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Washoe County: Carson River 26 July 1967 in 1967 Season Summary (Peter Herlan).

**Habitat:** Upper Transition, Canadian, Hudsonian and Arctic-Alpine Life Zones. These popular butterflies occur in Red Fir and Lodgepole Pine Forests and alpine fell-fields. This is a butterfly of the Sierran west slope and the Sierra Divide.

**Flight:** Late June to early September.

**b. Sol Parnassian—*Parnassius clodius sol* Bryk & Eisner 1932.**

**Taxonomic notes:** This subspecies occurs at lower elevations than subspecies *baldur* and tends to be much larger in size. In the Fish Camp-Fresno Dome area it is apparent some *sol* move upstream contacting *baldur* populations, which show blending in meadows along the Fresno Dome Trail near the trailhead parking lot.

**Sierra Nevada Type Locality:** California, Baxters, Placer County.

**Records: California: Madera County:** Strays to Sugar Pine 8 June 1992 & 29 June 2004 (KD); near Fresno Dome (Camp) 8 June 1992 (KR); Lewis Creek Trail 3 Aug 1958 (JSG); Jerseydale 23 June 1956 & 21 June 1957 (AOS). **Placer County:** Drum Forebay Rd 4600' 11 June 1997 (V/L); Baxter 15 June 2016 (Robert Dowell). **Mariposa County:** Fish Camp 16-17 July 1989 (Al & Tom Rubbert); 16 June 1990, 3 July 1991 & 23 May 1992 (all KD); Summerdale Camp along Big Creek 29 June 2004 (KD). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 12 July 2012 (SFSU-BSNC). **Sierra County:** Canyon Creek trail, N Fork Yuba River, W Downieville, Tahoe National Forest 20 June 2005, 19 June 2006, 29 June 2019 (SFSU-BSNC); North Yuba River, 8 mi NE Camptonville 2300' 21 June 1980 (RLL & DP); Oregon & Miller Creeks 4000' 15 June 2001 (DS). **Tuolumne County:** SR 108 at Cascade Creek 6000' 2 July 2011 (PMT).

**Distribution: California:** Published records include Madera, Mariposa, Placer, Plumas, Sierra and Tuolumne counties but there are likely other counties in the Sierra Nevada where *sol* occurs.

While I have no actual records from inside Yosemite National Park, I have seen individuals within a hundred yards of the southwest entrance to the Park near Summerdale Camp and the Mariposa Grove of Giant Sequoias.

**Habitat:** Adults can be very common at Fish Camp in the meadows and along Big Creek. Adults go to flowers of blooming azaleas and other flowers and patrol forest openings and creeksides.

**Flight:** 8 May- 28 July are the current (2019) state early and late dates.

**c. Clodius Parnassian—*Parnassius clodius*-** Sequoia/Kings Canyon segregate.

**Taxonomic notes:** Not named, but this segregate occurs only in the vicinity of Sequoia and Kings Canyon National Parks and nearby National Forests. It is large sized like *sol* in most individuals and uses *Dicentra nevadensis* as its larval host (John F. Emmel, pers. comm.).

**Records: California: Tulare County:** Confluence of Stony & Woodward Creeks at 6800' 3 July 1975 (JB & JRM); 13 June 1990 (KD); Stony Creek 6 July 1990 (Ron Leuschner) & 2 Aug 1993 (KD); Buck Rock 12 June 1990 (RPM); Big Meadow granite domes near Kings Canyon NP 23 June and 10 July 1989; 23 June 1997 (KD) and road east to Boulder Creek E of Big Meadow near KCNP 30 June 2017 (KD).

**National Park Records: Kings Canyon NP: Tulare County:** Buena Vista Peak 28 June 1987 (KD). **Sequoia NP: Tulare County:** Tokopah Falls Trail 30 July 1983 (PN & Gary Pavlik); 12 June 1990 & 2 Aug 1993 (KD); Lodgepole 2 Aug 1993 (KD).

**Distribution: California:** Northern Tulare and southern Fresno counties.

**Habitat:** Canadian Life Zone: These unnamed Parnassians fly on granite domes and steep rocky slopes in Kings Canyon and Sequoia National Parks and in the surrounding Sequoia National Monument managed by the National Forest Service.

**Flight:** Late June-July.

**43. Behr's or Sierra Nevada Parnassian—*Parnassius behrii*** W. H. Edwards, 1870.

This is another highly sought Sierra Nevada and California endemic, but highly localized in occurrence and often difficult to find. While this Parnassian is much more localized than the Clodius Parnassian, it can be common when found.

**Taxonomic note:** This butterfly went by the name *Parnassius phoebus behrii* until “A species revision of the *Parnassius phoebus* complex in North America” by Shepard & Manley (1998) appeared.

**Sierra Nevada Type Locality:** Sierra Nevada, top of Mt. Lyell, at an altitude of nearly 11,000', Mono and Tuolumne counties, California. This location is inside Yosemite National Park. The actual counties where Mt. Lyell is located are Madera and Tuolumne counties.

**Records: California: Alpine County:** 2.7 air mi SE Carson Pass 8900' 26 June 2002 (JFE); Ebbetts Pass 4 June 2014 (JB). **Inyo County:** Mono Pass 31 Aug 1965 & 31 Aug 1967 (PAO). **Fresno County:** Mono Pass 2 Aug 1961 and Duck Lake, 6 mi SE of Crystal Crag 3 Aug 1961 (both RES); 1 mi S of Pinchot Pass 11,000'-11,500' 10 Sep 2017 (James Vesley). **Madera County:** Rainbow Falls 5 mi W of Crystal Crag Lodge 3 Aug 1961 (RES). **Mono County:** N slope of Dana Plateau above Ellery Lake 16 Aug 1975 (KD); Glacier Canyon (N slope of Mt. Dana) 10,500'-11,000' 2 Aug 1981 (RLL); ridge SE of Mt. Conness above 10,000' 13 & 20 Aug 1976 (KD); 26 July 1981 and 11 Aug 1991 (KD); E above Saddlebag Lake at 11,000' 25 & 28 July 1981 (KD); 15 Aug 1981 (RLL); NW side of Saddlebag Lake 31 July 1987 (JGP) Virginia Canyon above 10,000' 7 Aug 1996 (BRB). **Nevada County:** E end Donner Pass 7 Aug 1980 & 9 Aug 1991 (very rare here, AMS).

**National Park Records: Kings Canyon NP: Fresno County:** ridge just W of Goddard Canyon, 20 Aug 1972 (SR). **Sequoia NP: Tulare County:** Forester Pass 12,000'-12,500', 25 July 2007 (Steve Fratello); John Muir Trail, Forester Pass to Tyndall Creek 11,850' 12,300' 3 July 2012 (EL); Mt. Whitney 14 July 1948 (LACM); Mineral King above 10,000' (no dates, JHM); Mineral King, White Chief Trail 15 Aug 1979 (Wayne Dawes); Shepherd Pass Trail, West Head Tyndall Creek 11,000'-12,200' 28 July 1966 (Scott Ellis & S. Johnson); Forester Pass 12,000'-12,500', Pacific Crest Trail, Bighorn Plateau & vicinity, 2 July 2012 (EL) **Yosemite NP: Mariposa County:** Research Reserve (Yosemite Creek area) 4 July 1933 (JSG). **Tuolumne County:** Mt. Dana 8 Aug 1933 (JSG); Upper Gaylor Lake 31 July to 20 Aug 1957 & 31 Aug 1958 (AOS); Crest W of Tioga Pass 19 Aug 1958 (AOS); N slope of Mt. Dana, SW of Tioga Pass 20 Aug 1965 (KCH & Jan Hughes) and 8 Aug 1981 (RLL).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. There are no Nevada records.

**Habitat:** Canadian, Hudsonian and Arctic-Alpine Life Zones. This is an inhabitant of the "High Sierra" which favors dry rocky areas with junipers where the stonecrop host (Western Roseroot) grows. This species also favors high elevations well above timberline below talus and avalanche slopes. Adults often fly in the "*Potentilla fruticosa* zone" of the Alpine Rock Garden sub-association of the Alpine-Fell fields" (Garth & Tilden, 1963).

**Flight:** Late June to mid-September.

#### **44. Pipevine Swallowtail—*Battus philenor* (Linnaeus, 1771)**

Two subspecies occur in the Sierra Nevada, the nominotypical race reaches the Sierra Nevada as only a very rare stray. The other is a common resident north of the Yosemite area, but occurs south to about the Madera/Fresno County line along the San Joaquin River Gorge.



**a. Pipevine Swallowtail—*Battus philenor philenor*** (Linnaeus, 1771).

**Type Locality:** America.

**Records:** **California:** **Kern County:** Canyon 1.5 mi S of Butterbrecht Peak, seen June 28, 1983 (KD). **Mariposa County:** Jerseydale 12 July 1983 (AOS). **Tulare County:** Kennedy Meadows 24 June 1973 (JB & CS).

**Distribution. California:** Inyo (?), Kern and Tulare counties. This species is recorded from Inyo County but the unknown locality or localities from which those are based on may not be in the Sierra Nevada. This butterfly reaches the Sierra Nevada only as a very rare stray from Arizona that crosses the Mojave Desert barrier to reach the Sierra Nevada. Several other individuals have been seen or collected in the Cantil/Koehn Dry Lake area of the Mojave Desert just south of the Sierra Nevada.

**b. Hairy or California Pipevine Swallowtail—*Battus philenor hirsuta*** (Skinner, 1908).

**Sierra Nevada Type Locality:** Plumas County, California, 9500’.

**Records:** **California:** **Amador County:** Jackson 28 Apr & 4 July 1984 (REW). **Calaveras County:** Natural Bridges (Melones Reservoir) 22 May 1999 (JRM). **Nevada County:** Lang Crossing 5000’ 19 May 1984 (AMS). **Fresno County:** San Joaquin River Gorge, Squaw Leap Trail 16 Apr 2004 & 7 Apr 2006 (KD); 3 Sep 2015 (KD), the locality has been renamed Ya-Gub-Weh-Tuh Trail. **Madera County:** Hilltop on ridge NE of Power House and the San Joaquin River 11 Apr 2004 (seen, RES). **Mariposa County:** 4 mi W Coulterville 16 May 1975 (JRM). **Placer County:** American River near Auburn 18 July 1974 & 22 Apr 1996 (KD). **Tulare County:** Greenhorn Mountains: Baker Ridge trailhead 29 June 1997 (seen, in good condition and relatively small in size, probably subspecies *hirsuta*, KD). **Tuolumne County:** Bear Creek just S of Sonora off SR 49 in Apr 59 (PAO/RES); Deer Creek (S of Groveland); 2 mi from San Pedro Reservoir 23 Apr 1970; 26 Mar 1978; 18 Apr 1980 & 12 June 1989 (all JRM); Phoenix Lake, 6 mi E of Sonora 18 May 1999 (JRM); Ward’s Ferry Rd leading to Tuolumne River 16 Sep 2016 (Peggy Sells).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare (?), Tuolumne and Yuba counties. The Greenhorn Mountains record was a sight record, so the individual could not be examined to determine to subspecies unequivocally.

**Flight:** March to September.

**45. Desert Black Swallowtail—*Papilio polyxenes coloro*** W. G. Wright, 1905.

**Taxonomic notes:** This swallowtail has formerly been treated as a subspecies of *Papilio bairdii* W. H. Edwards, 1866) or as a full species: Former common names were Rudkin’s or more

recently Wright's Swallowtail (= *Papilio rudkini* J. A. Comstock, 1935 or Wright's Swallowtail = *P. coloro* Wright). See Ferris & J. Emmel, 1982.

This desert subspecies closely resembles the Anise Swallowtail (*Papilio zelicaon*) but the shape of the forewing yellow band is ocellate shaped instead of rectangular, the outer band on the forewings tend to be rounded, not rectangular and has a lighter yellow ground color than *P. zelicaon*, also this species may have small spots along the abdomen, or a very reduced yellow stripe rather than a prominent one in that other species.

**Type Locality:** Whitewater Hill, Coachella Valley, Colorado Desert, Riverside County, California.

**Records: California: Kern County:** Butterbrecht Peak and hills and ridges to the southwest 21 May 1988; 18 Mar 1985; 18 Mar 1986; 14 Apr 1997; 14 Sep 1998 and 23 May 2005 (all KD); canyon 1.5 mi SW of Butterbrecht Peak 26 May 1978 (KD); E slope of Piute Mountains at rocky outcrop 4-5 miles W of Sageland, 28 May 2001 (KD); hilltop E of Walker Pass "Apr 1992" (RPM); several in Piute Mountains in Erskine Creek Canyon E of Lake Isabella (town), 20 & 23 May 2001 (KD): top of Hooper Hill SW Bodfish 15 May 2005 (BSD). **Tulare County:** Greenhorn Mountains Baker Ridge Lookout 7753', singletons 4 & 24 July 1995 (KD) and off Sherman Pass Rd, at Bald Mountain, just below 9400' 20 June 1992; 20 Jun 1999 and 26 May 2001 (all KD) and Sherman Pass Rd at Alder Creek 6800' 3 July 2005 (seen, KD).

**Distribution: California:** Inyo, Kern and Tulare counties. Davenport (1998) documented that this desert butterfly also occupies localized areas in the southern Sierra Nevada, using *Tauschia parishii* (the same host as *Papilio indra phyllisae*) as the larval host. Turpentine Broom (*Thamnosia montana* Torr. & Frem.), the usual host is absent from the Sierra Nevada. Those two species often occur together where that host grows. This species appears to be a resident in parts of Kern and Tulare counties, and has been seen as a stray at least as far north as the Lone Pine area with one record in Mono County east of the Sierra Nevada.

**Habitat:** Arid desert mountains as on Butterbrecht Peak and the ridge to the southwest and the east slopes of the Piute and Greenhorn Mountains. Strays show up in Nine Mile Canyon, the Kennedy Meadows area, the Sherman Pass Rd, and on top of Bald Mountain 9400'. Males go to hilltops or fly up or down canyons.

**Flight:** April to September, sometimes early October in the Cantil area where the Sierra Nevada meets the Mojave Desert.

#### **46. Anise Swallowtail—*Papilio zelicaon* Lucas, 1852.**

**Type Locality:** San Francisco, San Francisco County, California.

**National Parks Records: Sequoia NP: Tulare County:** Potwisha 28 Feb 1986 (KD); Halstead Meadow 18 Aug 1989 (KD); Tokopah Falls Trail 12 June 1990 (KD); Timber Gap above Mineral King Valley 9800' 22 July 1991 (KD). **Yosemite NP: Mariposa County:** Yosemite

Creek S Tioga Rd 16 July 1933 (JSG). **Tuolumne County:** Crest W of Tioga Pass 9 July 1958 (AOS); Upper Gaylor Lake 19 July 1958 (AOS).

**Distribution: California:** All counties in the Sierra Nevada. No general records are given because of this species wide distribution in California. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Unrestricted, in all Life Zones. Adults commonly go to hilltops.

**Flight:** Late February to August in the Sierra Nevada.

**47. Indra or Short-Tailed Black Swallowtail—*Papilio indra*** Reakirt, 1866.

There are two subspecies found in the Sierra Nevada. This is a highly prized butterfly that is rarely common, a very rapid and elusive flier and difficult to approach to net or photograph.

**a. Indra or Short-tailed Black Swallowtail--*Papilio indra*** near *indra* Reakirt, 1866 or Northern Sierra Nevada segregate.

**Type Locality:** Pikes Peak, Colorado Territory where this butterfly is not currently known. The actual holotype probably came from the area west of Golden, Jefferson County, likely Lookout Mountain or Mt. Zion.

**Taxonomic note:** The northern Sierra Nevada populations tend to be smaller, have narrower yellow bands and shorter tails like Rocky Mountain *indra* but are disjunct from those populations so could be viewed as a segregate. Some individuals found in the Yosemite region have wider yellow bands and appear similar to *phyllisae*.

**Records: California: Alpine County:** 2 mi E Alpine Lake 8400' 18 June 1981 (JRM); ridge N of Woodchuck Basin 8800' 22 July 1997 (RK). **Fresno County:** Kaiser Peak and Kaiser Crest 10,000'-10,300' 17 June to 27 July 1930 (LMI) and 4 July 1961 (RES). **Inyo County:** SF of Bishop Creek above 8300' 6 July 2004 & 2006; Table Mountain area 20 June 1988 (KD) Pine Creek Canyon near Rovana 26 May 2009 & 6 May 2012 (KD). **Madera County:** Mammoth Peak 16 July 1960 at Mono Co. line (AOS); seen above Fresno Dome Trailhead 19 June 2014 (KD & SR). **Mariposa County:** Fish Camp 23 May 1992 (KD). **Mono County:** Hilltop SW of Topaz Lake 3 June 1972 (MS); Hwy 89 just W of US 395, 26 May 1994 (JGP); rocky outcrop W of Saddlebag Lake Dam 13 Aug 1970 (KD) and Saddlebag Lake 28 June 1981 (RLL); yard near Dechambeau Creek W of US 395 & Mono Lake 30 June 2015 & June 20-29, 2017 (KN); Swall Meadow 20 May 1997 (KD); Lower Virginia Creek 14 June 2018 (David Haviland). **Nevada County:** Donner Pass 16 May 1992 (AMS); Castle Peak 8500-9000' 5 July 1999 & 27 Aug 1999 (EDB). **Plumas County:** Frazier Falls trail, Plumas National Forest 28 June 2017 (SFSU-BSNC); Mills Peak lookout, Plumas National Forest 3 July 2007 (SEABA-C). **Sierra County:** Babbitt Peak, Bald Mountain Range, Tahoe National Forest 4 July 2007 (SEABA-C); Ridge 1 mi N Packer Saddle, Tahoe National Forest 13 July 2012 (SFSU-BSNC); On trail off Gold Lake Road 6 Aug 2019 (Robert Gorman). **Tulare County:** Sequoia National Monument

between Kings Canyon and Sequoia National Parks: Schell Mtn., E Weaver Lake 1 Aug 2019 (David Haviland).

**National Park Records: Kings Canyon NP: Tulare County:** Big Baldy Peak 23 July 2011 (Paul Johnson II, subspecies undetermined). **Yosemite NP: Mariposa County:** Yosemite Valley 17 June 1932 (JWT); Yosemite Valley, Camp Curry, seen 31 May 1964 (KD); **Tuolumne County:** Crest W of Tioga Pass 25 June 61 (AOS); Tuolumne Meadows 8800' 8 July 1981 (RLL).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, northern Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, northeastern Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran, Transition, Canadian, Hudsonian, Arctic Alpine Life Zones. This species tends to occur more on drier east slope localities with sandy slopes where members of the carrot family host plants grow. Adults go to hilltops near rocky outcrops below the summit of a hill or ridge and tend to be very wary and elusive.

**Flight:** Late April to early August most years.

**b. Phyllis' Indra Swallowtail—*Papilio indra phyllisae* J. Emmel, 1982.**

**Taxonomic notes:** This subspecies occurs further south in the Sierra Nevada from about Whitney Portal south to Butterbredt Peak 5900' and the ridge running to the southwest. Adults tend to be larger in size, have wider yellow bands and longer tails than those in the more northern Sierra Nevada.

**Sierra Nevada Type Locality:** Butterbredt (=Butterbread) Peak and ridge running to the southwest, Kern County, California.

**Records: California: Inyo County:** Cottonwood Canyon, S of Lone Pine 28 May 1974 (JFE); Upper Nine Mile Canyon off road in openings at end of side canyons 1.4 to 1.5 mi S. below Tulare County line: 19 Apr 2003 and 30 Apr 2019 (KD); upgrade to Whitney Portal 18 June 2006 (KD). **Kern County:** Tom's Hill and ridge to the southwest 15 May 1976 (JB & KD) and many subsequent dates (KD); summit area of Butterbredt Peak 21 May 1988 (KD, RPM & AR); 29 Apr 1996 (KD) and many other dates; Bird Spring Pass Microwave Hill 5700' 7 May 2001 (Jack Levy). Piute Mountains, Piute Peak 8432' 3 July 1972 (JB); Piute Mountain Vista or Lookout 8326' 8-9 June 1974 (JB) and 17 July 2010 (KD); hilltop W of Kelso Valley road summit S of Sageland 1 May 1981 (KD) and Piute Mountain Rd, 5 mi W of Sageland rocky outcrop near entrance to Sequoia National Forest 28 May 2001 and 23 May 2005 (both KD). **Tulare County:** XYZ Creek 19-26 June 1951 (Chris Henne & C. Ingham); below Bald Mountain summit 9400' 10 July 1982; 21 June and 14 July 1985 (KD) and many other dates; W of Sherman Pass at rocky outcrop 3 July 2010 & 12 June 2012 (KD); Alder Creek 6800' E of Kern River 3 July 2011 (Darin Andrade); Pine Flat at south end of Kern Plateau 2 July 2011

(Paul Levine & KD); Greenhorn Mts.: Baker Ridge Lookout 7753' 4 July 1998 (KD) & 3 July 2004 (KD & BG).

**Distribution: California:** Inyo, Kern and Tulare counties. This subspecies occurs in the Piute and Greenhorn Mountain subranges. It is unknown how far *phyllisae* ranges north on the Sierran west slope, but it does occur off the Sherman Pass Rd at several locations.

This subspecies can be common in the Butterbrecht Peaks area, at least it was until the area was turned into a windfarm (except Butterbrecht Peak itself) and on Bald Mountain.

**48. Western Tiger Swallowtail—*Pterourus (Papilio) rutulus* Lucas 1852.**

**Taxonomic notes:** The prevailing practice has been to put this species into the genus *Papilio*.

**Sierra Nevada Type Locality:** Queen Lily Campground, near Belden, North Fork of the Feather River, 2400', Plumas County, California.

**National Park Records: Kings Canyon NP: Tulare County:** Wilsonia 10 July 1989 (KD). **Sequoia NP: Tulare County:** Ash Mountain and Buckeye Flat 17 May 1985 (KD); Crystal Cave 15 Aug 1986 and 27 June 1987 (KD); Tokopah Falls Trail 12 June 1990 & 2 Aug 1993; Mineral King Valley 22 July 1991 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley along Merced River near Camp Curry 31 May 1964 and 30 May 1970 (KD); Yosemite Creek Trail S of Tioga Rd. 9 July 1956 (JSG).

**Distribution:** All counties in California and Nevada in the Sierra Nevada. This is a very common species along rivers and streams (so general records are not given), adults frequently patrol in riparian canyons and fly in city parks. Males commonly mud puddle with Pale Swallowtails.

**Habitat:** Upper Sonoran, Transition, Canadian and Hudsonian Life Zones. Adults fly in foothill woodland and coniferous forests and patrol along creeks, rivers, canyons and appear in forest openings.

**Flight:** March to September.

**49. Pale Swallowtail—*Pterourus (Papilio) eurymedon* Lucas, 1852.**

**Taxonomic notes:** The prevailing practice has been to place this swallowtail into the genus *Papilio*. While no other subspecies have yet been named, it has already been recognized that the California Coast Range populations have a heavier yellow or cream-colored tinge and that populations in the Rocky Mountains are also different.

**Sierra Nevada Type Locality:** Queen Lily Campground, near Belden, North Fork Feather River, 2400', Plumas County, California.

**Records: California: Mono County:** Minaret Summit, 8965', Inyo National Forest 17 July 2019 (PAO-EBO); Upper Lee Vining Campground 24 June 1976 (KD); Lower Rock Creek 7 June 1997 (JFE); Swall Meadow 9 May 1997 (KD); road or trail between Jordan Basin & Copper Mtn. 1 June 2016 (KN); road to Lundy Lake 7 June 2019 (KD). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 29 June 2017 (SFSU-BSNC). Round Lake loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Canyon Creek trail, N Fork Yuba River, W Downieville, Tahoe National Forest 20 June 2005, 19 June 2006, 29 June 2019 (SFSU-BSNC); Sierra Nevada Field Campus, east of Bassetts, Hwy 49, 28 June 2017, 4 July 2019 (SFSU-BSNC); Henness Pass Rd W of Nevada state line 17 June 2016 (JD). **Nevada: Carson City County:** Carson Range, Spooner-Kings Canyon Rd, 1.3 mi N of US 50, 25 June 1980 (GTA). **Douglas County:** Carson Range, US 50, Montreal Canyon, 18 July 1985 & 30 June 1987 (GTA); Spooner Lake State Park 19 June 1988 (JD). **Washoe County:** Galena Regional Park, Jones Creek Loop Trail 23 June 2016 (JD); Carson Range I-80, exit near Verdi 16 Jun 1989 (GTA).

**National Park Records: Kings Canyon NP: Tulare County:** Grant Grove 30 June 1971 (M. Scott) and 23 June 89 (KD). **Sequoia NP: Tulare County:** Ash Mountain 28 Apr 59 (R. C. Burns) & 17 May 1985 (KD); Mineral King Valley 5 July 1985 & 19 July 1993 (KD); Tokopah Falls Trail 12 June 1990 (KD); General's Hwy at North Boundary 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley, Merced River near Camp Curry 31 May 1964 and 30 May 1970 (seen at mud in numbers, KD); trail between Camp Curry and Glacier Point 9 July 1933 (JSG). **Tuolumne County:** Hetch-Hetchy 13 July 1956 (JSG).

**Distribution: California:** All counties except Inyo County, but there was a possible sighting on the east side of Olancho Peak (fide JFE), this is odd because the larval host occurs commonly in this county on the east side of the Sierra Nevada. *P. eurymedon* is commonly seen on the western slope of the Sierra Nevada but is very rarely seen in Mono County. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones. This beautiful white and black striped swallowtail occurs in foothill woodland, mixed coniferous forest and high elevation coniferous forest. Adults frequently patrol riparian canyons along with *Papilio rutulus* and *Papilio multicaudata*, but also patrol around hilltops.

**Flight:** Mid-April to early August.

## **50. Two-tailed Tiger Swallowtail—*Pterourus (Papilio) multicaudata pusillus* Austin & Emmel, 1998.**

This is the largest butterfly in the Sierra Nevada. While it has a large range, this butterfly is uncommon in much of the Sierra Nevada and is far less common in California than in the Rocky Mountains states. These swallowtails can be most elusive and tend to fly high above the ground, rarely coming into the range of a net or camera, unless one stops to visit a flower.

**Taxonomic notes:** The prevailing view has been to place this species in the genus *Papilio*. Michael Fisher (2012) proposed that the smaller California subspecies *pusillus* is a seasonal form and actually a synonym of nominotypical *multicaudata*. Since larger late summer individuals of this species are scarce in California, there is insufficient material available to test Fisher's hypothesis.

**Type Locality:** Nevada: Elko County; north end of Independence Mountains (Bull Run Mountains), Nevada State Route 11A, 6.7 road miles east (=northeast) of Nevada State Route 226, 1800-2000m.

**Records:** **Alpine County:** Coleville 21 June 2015 (Paul Cherubini). **Fresno County:** 4 mi NE of Pinehurst 4250' 25 June 1995 (RLL); San Joaquin River at Powerhouse 11 Apr 2004 (RES); San Joaquin River Gorge, Squaw Leap Trail 16 Apr 2004 (KD); Italian Creek (Jose Rd) overlooking Redinger Lake 11 June 2004 (KD). **Kern County:** Greenhorn Mountains, Cedar Creek 6 & 11 July 1975 and 7 July 1976 (KD); 28 June 2014 (SR & KD); E side Breckenridge Mountain 29 May & 6 June 1979 (KD); Piute Mtn. Rd MP 4 above Bodfish/Havilah road summit 4 June 2004 (seen JFE & KD). **Madera County:** Chilkoot Camp 15 June 1984 (PAO); Coarsegold 27 Apr 1992 (KD). **Mariposa County:** Briceburg along the Merced River 12 Mar 1972 (JRM) & common 28 Mar 1981 (KD); Jerseydale, seen 9 Aug 1993 (KD). **Mono County:** Hwy 89, 1.3 mi. W of US 395, 26 May 1994 (JGP). **Nevada County:** South Yuba River, 2 mi E of Washington 28 May 1983 (RLL & DP). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 13 July 2012 (SFSU-BSNC). **Sierra County:** Smithneck Road, SE Loyalton 27 June 2017 (SFSU-BSNC), 2 mi SW of Verdi, Nevada 1 July 1991 (W. D. Patterson). **Tulare County:** California Hot Springs 30 Aug 1962 (Mike Davenport); 1 mi S of Jack Flat 28 Apr 1989 (KD); Sherman Pass Rd E of Kern River, Alder Creek 6800' 3 & 9, July 2005 (KD); upper Kern River in side canyon near Southern California Edison Dam, 4 May 2018 (KD). **Nevada: Washoe County:** Carson Range, Davis Creek Park 25 May 1984 (GTA) and Thomas Creek 20 July 2002 (GTA).

**National Park Records: Sequoia NP:** Potwisha Camp area 17 May 1985 and 18 Apr 1986 (KD); along Kaweah River 25 May 1989 (KD); turnout 0.8 mi below Amphitheater Point 8 Aug 1979 (PN, seen).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran and Transition Life Zones, mostly on the Sierra Nevada west slope. This butterfly is most frequently encountered at lower to mid-elevations in drier riparian canyons where the hosts (Chokecherry and Ash) grow.

**Flight:** March to early September.

**Sulphurs, Whites, Marbles and Orange-tips. Family Pieridae.**

**51. Dainty Sulphur or Dwarf Yellow—*Nathalis iole* Boisduval, 1836.**

This is not a permanent resident anywhere in the Sierra Nevada but this very small butterfly is a very successful migrant, establishing transient populations as it flies northward, especially in years of abundant rainfall.

**Type Locality:** “Mexique.”

**Records: California: Alpine County:** Dardanelle Cones off SR 108 at 7200’ 16 July 1989 (JRM); 1 mi E Monitor Pass 8200’ 16 July 1999 (EDB) & 10 Aug 1999 (RES). **Inyo County:** Upper Nine Mile Canyon 18 May 2019 (KD). **Kern County:** Kelso Valley 21 May 1988 (RPM); Weldon, Kern River Valley 6 Nov 2012 and two 4 Nov 2014 (KD); Lake Isabella at Wofford Heights (Tillie Camp); and Hanning Flat near Weldon, outbreak numbers of transient populations 28 Sep to 28 Oct 2017 (KD) and Hanning Flat in outbreak numbers again 21 Sep to 5 Nov 2019 (KD). **Mono County:** SF Bishop Creek 18 July 2019 (PO-EBO); Warren Creek off Tioga Rd. 20, 21 & 28 July 1958 (AOS). **Nevada /Placer counties:** Donner Pass 27 June 1992 (AMS). **Tulare County:** Kennedy Meadows 24 June 1973 (JB, JRM & CS); Fish Creek Meadows 24 June 1973 (JB); Freeman Creek Grove 31 July 1983 (PN & Gary Pavlik); Quaking Aspen 7300’ 4 June 2015 (KD); Sherman Pass Rd at Alder Creek 6800’ 27 Aug 2019 (KD). **Tuolumne County:** Near SR 108 Jct. with Clark Fork Rd 5600’ 27 June 1992 (PMT). **Nevada: Carson City County:** Carson City, Lompa Lane 17 June 1988 (GTA).

**National Park Records: Sequoia NP: Tulare County:** Mineral King 20 July 2019 (Alan Wight). **Yosemite NP: Mariposa County:** Yosemite Valley June 1926 (P. J. Woolf).

**Distribution: California:** Alpine, El Dorado, Inyo, Kern, Mariposa, Mono, Nevada, Placer, Tulare and Tuolumne counties. This species can turn up almost anywhere, but most often in drier habitats. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Strays are most likely to occur in dry areas near areas of riparian vegetation or along roads or trails. Many plants are used for larval hosts.

**Flight:** March to early November.

**52. Sleepy Orange—*Abaeis nicippe* (Cramer, 1779).**

**Taxonomic notes:** This species was long known as *Eurema nicippe* in much of the past literature.

**Type Locality:** Virginia.

**Records: California: Inyo County:** Lubken Canyon S of Lone Pine 8 Sep 1984 (KD); Lone Pine Creek below Whitney Portal, seen 30 Apr 2017 (MW/KD). **Kern County:** Walker Pass 8 Aug 1977 (KD) and E of Walker Pass 18 June 1985 (Floyd & June Preston); Weldon 28 Oct and



6 & 20 Nov 2012 (KD). Greenhorn Mts. in Kern Canyon at Richbar, overwintering 25 Jan 1985 (KD); Piute Mountains: Bodfish 7 Mar 1978 (KD); 1-2 mi S of Bodfish 6 to 21 May 1976 and 30 May 1979 (KD). **Mono County:** Near Paradise Camp at base of Old Sherwin Summit Rd 18 Aug 2006 (RKS). **Tulare County:** Upper Kern River at Riverkern crossing Kern/Tulare County: line, 15 Mar 1980 (KD); Kennedy Meadows 8 June 1985 & 30 June 1988 (KD); upper Kern River on Sierra Hwy just N Salmon Falls Rd 2 Oct 2012 (KD) and Sherman Pass Rd E of Kern River at 5400' 2 Oct 2012 (KD); at Limestone Camp 4 Feb 2015, probably overwintering in the Sierra Nevada (KD); Weldon in Kern River Valley Jct.SR 178 & Kelso Valley Rd. 6 Nov 2012 (KD).

**Distribution: California:** Inyo, Kern, Tulare and Mono counties. This species is a breeding resident (*Cassia armada* grows abundantly) in the Jawbone Canyon-south end of the Sierra Nevada foothills where the Sierra Nevada meets the Mojave Desert. In good rainfall years like 1983, 1984 and 1992, hundreds of individuals were seen in this area. In other areas, this species strays north into the Kern River Valley, Sherman Pass, Kennedy Meadows and north up the east side of the Sierra Nevada barely north of the Mono County line. There is some evidence of at least occasional overwintering in the Sierra Nevada (see records above). **Nevada:** No records in the Sierra Nevada counties.

**Habitat:** Mojave Desert plant communities, alfalfa fields, places where there is water and in the Kern River Valley (strays reach here frequently, sometimes in some numbers) at Weldon where there are tall deciduous trees and blooming rabbitbrush.

**Flight:** Any month, but stray adults are most frequently seen in the Sierra Nevada north of the south end of the Sierra in the fall months. In the Jawbone Canyon/Cantil area, adults fly March to early November, though they can be apparently absent during periods of long-term drought.

### **53. Mexican Yellow—*Abaeis (Eurema) mexicana* Boisduval, 1836.**

This is not a real member of the Sierra Nevada fauna and has strayed into the Sierra Nevada from the Mojave Desert and Arizona only a few times.

**Taxonomic notes:** Long known as *Eurema mexicana*, this species has been moved into the genus *Abaeis* as the result of nuclear DNA work (Zhang, Cong, Shen, Opler & Grishin (2019a and b).

**Type Locality:** “Mexique”.

**Records: California: El Dorado County:** Iron Mountain area, Mormon Emigrant Trail 7000' 25 June 1992 (Tony Garvine). **Kern County:** Weldon, late May 1980 (CS); 2.5 to 4 mi S of Bodfish 2 June 1973 (JB); 3.5 mi. S of Bodfish 18 May 1992 (JB). **Nevada:** There are no records for the Sierra Nevada in the Carson Range.

**54. Western Clouded Sulphur—*Colias eriphyle*** W. H. Edwards, 1876.

**Taxonomic notes:** Pelham (2019) lists *eriphyle* as a full species, not a *philodice* subspecies as was previously traditional. Recent DNA research has confirmed it as a separate species as suggested by Pollock et al (1998) and Wheat & Watt (2008) based on electrophoretic isozyme research.

**Type Locality:** “Lake Labache” (=Lake Lahache), British Columbia, Canada.

**Records:** **California:** **Alpine County:** Meiss Lake 8700’ 26 July 1994 (AMS); NE of Woodford S of Lake Tahoe 12 June 2003 (KD). **Inyo County:** 3 mi S of Big Pine 22 July 1976 (G. F. Soule). **Mono County:** Mono Lake County Park 27 June 1981 RLL); stream near Jct Little Walker River Rd and US.395: 8 Sep 2009 (KD); sight record E side of Saddlebag Lake 7 Sep 2009 (KD). **Nevada County:** Donner Pass 7 Aug 1977 (AMS). **Placer:** Summit Valley Meadows 1 July 1960 (Tom & John Emmel). **Plumas County:** Sierra Valley, Heriot Lane 4 July 2007 (SEABA-C); **Sierra County:** Jones Valley, Babbitt Peak Road, Tahoe National Forest, 21 June 2016 (SFSU-BSNC); Sierra Nevada Field Campus, east of Bassetts, Hwy 49, 28 June 2017 (SFSU-BSNC). **Tulare County:** Troy Meadows 14 July 1985 (Tony Leigh); 4 mi E of Sherman Pass 8000’ 9 June 2001 (KD). **Nevada:** **Carson City:** Carson Valley 1961 (no other data, RES). **Douglas County:** Carson Valley, Scossa Ranch 26 Aug 1983 and Centerville Rd 6 Aug 2001 (GTA).

**Distribution:** **California:** Alpine, Inyo, Mono, Nevada, Placer, Plumas, Sierra and Tulare counties. This butterfly seems to be absent or very rare on most of the Sierra Nevada west slope and mostly occurs in wet meadow situations at the base of the Sierran east slope. There are no National Park records but the Saddlebag Lake record is not far from the Tioga Pass Yosemite National Park boundary. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Wet meadow habitats or in alfalfa fields from the western edge of the Great Basin into well-watered Sierra Nevada drainages.

**Flight:** June to September.

**55. Orange Sulphur—*Colias eurytheme*** Boisduval, 1852.

**Type Locality:** Sacramento, Sacramento County, California.

**National Park Records:** **Sequoia NP:** **Tulare County:** Buckeye Flat 17 May 1985 (KD); Mineral King Valley 5 July 1985 (KD); Mineral King, Farewell Gap Trail 19 July 1993 (KD) and Giant Forest Village 15 Aug 1986 (KD). **Yosemite NP:** **Mariposa County:** Yosemite Valley 23 July 1933 (JSG) and 19 Apr 1961 (Keith Trexler). **Tuolumne County:** Gaylor Lakes Trail 19 July 1958 (JWT); Mt. Dana, west slope 30 Aug 1958 (JWT).

**Distribution:** **California** and **Nevada:** Occurs commonly in all counties, so no general records are given. This is also a common butterfly in Kings Canyon, Sequoia and Yosemite National Parks.

**Habitat:** Unrestricted, this butterfly occurs in all plant communities in the Sierra Nevada, though scarce (sometimes common) above timberline.

**Flight:** Late February-early November.

**General:** In the years 2017 and 2018, the southern Sierra Nevada experienced a serious drought and some were concerned the butterfly this normally common butterfly was now endangered. Very few could be found below 6000' in the southern Sierra Nevada and this butterfly became scarce even in the San Joaquin Valley, probably because of the drought, pesticides in agricultural fields, human development and the fact that a primary larval host, alfalfa is rarely grown in the central valley anymore as that crop requires considerable water. The good news is that the 2018-19 winter season rains were good and numbers of *Colias eurytheme* in the Sierra Nevada during 2019 were much improved.

## **56. Queen Alexandra Sulphur—*Colias alexandra edwardsii* W. H. Edwards, 1870.**

**Taxonomic notes:** Some believe (Scott et al, 2006) that *edwardsii* may be a species not an *alexandra* subspecies.

**Near Sierra Nevada Type Locality:** Near Virginia City, Storey County, Nevada.

**Records: California: Mono County:** Green Canyon 6 July 1996 (BRB); Mill Canyon 15 July 1996 (BRB); US 395 just E of Little Walker Creek Rd 3 Aug 1986 (JGP); Virginia Canyon 7 Aug 1996 (BRB); Mono Lake Park 28 Aug 1983 (R. Robertson) & 25 Aug 1986 (AMS); E side Saddlebag Lake 7 Sep 2009 (seen, KD). **Plumas County:** Beckwourth Pass 17 May 1986 (AMS). **Sierra County:** Sierra Valley 5000' 13 Aug 1990 (AMS). **Nevada: Washoe County:** Carson Range, Truckee River 29-30 May 2019 (MW).

**Distribution: California:** Alpine, El Dorado, Inyo, Mono, Nevada, Plumas and Sierra counties. This species tends to be quite scarce in recent years where it is now rarely seen in northern Inyo or Mono counties. Garth & Tilden (1963) did not list this butterfly for the Yosemite region. A possible Queen Alexandra Sulphur I saw in the southern Sierra Nevada in a canyon wash N of Bird Spring Pass, Kern County was a very large individual which if not a *Colias harfordii* would have been a major southern range extension had I caught and confirmed the identification.

**Nevada:** Carson Valley, Douglas and Washoe counties.

**Habitat:** East side of the Sierra Nevada on the western edge of the Great Basin, usually in montane sagebrush areas.

**Flight:** Mid-May to early September.

## **57. Harford's Sulphur—*Colias harfordii* Hy. Edwards, 1877.**

This is another California endemic in the USA which was not known to range into the Sierra Nevada (Emmel & Emmel, 1973) but which barely does, at least as a somewhat regular transient

species in the Kelso Valley area and occasional in the upper Kern River drainage. There are also three records for the Piute Mountains and one sighting in the Greenhorn Mountains. The Type Locality is Havilah, which itself is in the Piute Mountains region.

**Sierra Nevada Type Locality:** Havilah, Kern County, California.

**Records: California: Kern County:** Ravine 0.7 mi SW of Sageland N Kelso Valley 21 June 1978 (KD) and ravine 1 mi SW of Sageland in Mojave Desert/montane scrub 11 Apr and 14 & 21 Sep 2011 (several collected, KD). Piute Mountains: near Liebel Peak 21 July 1978 (KD) and E side of range 4 mi W of Sageland 25 Sep 2009 (KD), another seen several miles west at higher elevation same day. **Tulare County:** 2 mi W of Johnsondale, larvae collected 19 July 1985 (JFE) and reared to adult. Adults were seen west of Sherman Pass at Alder Creek 6800' 3 July 2005 (KD & Steve Summers) and 15 July 2006 (KD). This transient colony appeared 3 years after a major forest fire there (2002) and soon disappeared.

**Distribution: California:** Kern and Tulare counties.

**Habitat:** Upper Sonoran and Transition Life Zones. This species favors foothill woodland, chaparral and sagebrush or in Mojave Desert plant communities in washes and ravines in the Kelso Valley area; mixed coniferous forest in the Piutes and on the Sherman Pass Rd at 6800' at Alder Creek. There have been sightings of *harfordii* in the Sageland area since at least 1976.

**Flight:** March to October.

#### **58. Behr's or Sierra Sulphur—*Colias behrii* W. H. Edwards, 1866.**

This green sulphur of Yosemite and Sequoia National Parks is a highly prized California and Sierra Nevada endemic of very limited range, but incredibly common in the Tuolumne Meadows area almost every year on the annual Yosemite butterfly count.

**Sierra Nevada Type Locality:** Vicinity of Tioga Pass at about 10,000', Tuolumne and Mono counties, California which includes Yosemite National Park.

**Records: California: Inyo County:** Mono Pass 11,000' 30 Aug 1965 & 30-31 Aug 1967 (PAO). **Fresno County:** Florence Lake 5 Aug 1933 (JSG); Cliff below Pass, W Goddard Canyon 11,500' 21 Aug 1972 (SR); above Valor Lake, base of Mt. Keinstein 11,400', 22 Aug 1972 (SR); Wanda Lake, E of Mt. Goddard 11,500' 24 Aug 1972 (SR). **Mono County:** Rock Creek Camp 1 Sep 1965 (PAO); meadows 1 mi and SE side Saddlebag Lake 13 & 14 Aug 1970 (KD); NW side of Saddlebag Lake and Greenstone Lake 12 Aug 2006 (KD, PAO, Howard Grisham & Ricky Patterson); ridge SE of Mt. Conness 9700-10,500' 13 & 20 July 1976; 25 July 1981 and 31 July 2004 (all KD); slope N side Tioga Pass 10,600' 16 Aug 1975 (KD); Summit Lake via Virginia Lakes Trail 10,000' 7 Aug 1996 (Bret Boyd); meadow along stream off road to Saddlebag Lake 26-27 June 2012 (KD). **Tulare County:** Lower Vidette Lake 27 July 1991 (John & Tom Emmel). **Tuolumne County:** Thompson Canyon near Hawks Beak Peak 6 Sep 1998 (Doug Taron).

**National Park Records: Kings Canyon NP: Tulare County:** Bubb's Creek 11,000' 10 Aug 1953 (W. McDonald); Upper Bubb's Creek 29 July 1954 (C. H. Ericksen); Kings River 10,500' 9 July 1910 (Victor Clemence) and 16 July 1915 (JAC); Tyndall Creek 11,000' 29 July 1954 (C. H. Ericksen); Bubb's Creek-Forester Pass Trail 11,500' 25 July 2007 (Steve Fratello); **Sequoia NP: Tulare County:** Mineral King (no specific data (JHM)); Bighorn Plateau 11,400' 4 July 2012 (EL); John Muir Trail, Forester Pass to Tyndall Creek 11,800' 3 July 2012 (EL); **Yosemite NP: Madera/Tuolumne counties:** Mt. Lyell Base Camp 10 Aug 1958 (AOS). **Mariposa County:** Merced Lake Trail 4 Aug 1958 (AOS). **Tuolumne County:** North facing slope of Mt. Forsythe mid-Aug 1954 (PAO); Tuolumne Meadows 15 Aug 1957 (JWT) and 29 July 2019 (YBC); Virginia Peak 3 Aug 2003 (SS); Gaylor Lakes 1-2 Sep 2011 (DB); Burro Pass near Matterhorn Peak 12 Sep 2019 (MW).

**Distribution: California:** Fresno, Inyo, Madera, Mariposa, Mono, Tulare and Tuolumne counties. This species occurs from the north facing slope of Mt. Forsythe on the northern boundary of Yosemite National Park south to Mineral King in Sequoia National Park.

**Habitat:** Hudsonian and Arctic-Alpine Life Zones, especially in subalpine meadows with the Dwarf Bilberry (*Vaccinium caespitosum* Michaux) hostplant but in the Tioga Pass area, frequently straying above timberline on grassy slopes on thin soils over the granite.

**Flight:** Late June-early September.

#### **59. Southern Dogface—*Zerene cesonia* (Stoll, 1790).**

This is not a breeding resident in the Sierra Nevada and occurs in the range as a very rare stray or transient on *Dalea* in the southern Sierra Nevada. The records below are the only records I know of within the region.

**Type Locality:** Georgia.

**Records: California: Kern County:** Piute Mountains at mouth of Erskine Creek Canyon E of Lake Isabella (town) 6 June 1983 (KD); Butterbrecht Peak area and upper Jawbone Canyon, 6 May 1978, (seen KD & CS).; south end of the Sierra Nevada where it meets the Mojave Desert N of SR 14 W of Cantil 29 Apr 1992 (KD); Greenhorn Mountains: Tiger Flat 30 June 1996, two individuals (Ron Royer); Upper Jawbone Canyon 12 May 1978 (Jim Wiseman). **Mariposa County:** Jerseydale 15 Sep 1983 and 13 June 1986 (AOS). **Mono County:** Near Lee Vining 24 July 1965 (AOS); one or two adults seen at east end of Saddlebag Lake July 22, 2001 (JB).

**Distribution: California:** This is not an actual resident member of the Sierra Nevada fauna. There are records for Inyo, Kern, Mariposa, Mono and Tulare counties (the latter county needs verification). **Nevada:** There are no Sierra Nevada records.

**Habitat:** This species is very scarce even in the California Mojave Desert. *Zerene cesonia* sometimes seems to breed transiently in the Mojave Desert right along the Sierran southern and southeastern edges where Daleas (a host plant) grow in wetter years.

**Flight:** April to July.

**60. California Dogface—*Zerene eurydice*** (Boisduval, 1855).

This is a dimorphic California endemic species which is very rare south of El Dorado County. Males have the “dogface” on the forewings while the females could pass for a nearly totally yellow small “Cloudless Sulphur.”

**Type Locality:** Vicinity of Alpine Dam, Lagunitas Creek, Marin County, California.

**Records:** **California:** **El Dorado County:** Near Auburn on opposite side of American River 13 June 2003 (KD). **Kern County:** Greenhorn Mountains: Alder Creek Camp probable sighting of a female 23 June 1995 (KD). **Madera County:** Female seen along Big Creek downstream from Fresno Dome Camp 29 May 2007 (KD). **Mariposa County:** Jerseydale 15 Sep & 21 Oct 1983 (both AOS); El Portal 18 May 1980 (seen JRM). **Nevada County:** Washington 2650' 1 Sep, 6 & 19 Oct 1991 (AMS); Alta Sierra 2400' 3 Nov 2001; 3 & 15 Nov 2003 (DS). **Placer County:** American River Gorge below Auburn 21 Jan 1976 and Alta 3000' 21 Apr 1976 (AOS). **Tulare County:** Greenhorn Mountains: Baker Ridge 8 July 2001 & 4 July 2004 (seen, FH); Kern Plateau: Cherry Hill Rd near Poison Meadow 4 mi N of Big Meadow 4 July 2004 (several, FH) and 24 July 2004 (male seen, KD); female seen Sherman Pass Rd at Alder Creek 15 July 2006 (KD & RPM). The only collected individual in the county was on the Sherman Pass Road between 7000'-8,000' 8 July 2000 (BG). **Tuolumne County:** “Mather “Sept. 1896 Cottle.”

**National Park Records:** **Yosemite NP:** **Mariposa County:** Half Dome trail, Little Yosemite Valley, above Nevada Falls 5 Sep 1972 (several seen, KD).

**Distribution:** **California:** El Dorado, Kern (extremely rare in the Greenhorn Mountains), Madera (very rare), Mariposa (very rare), Nevada, Placer, Plumas, Sierra, Tulare (very rare), Tuolumne and Yuba counties.

**Habitat:** Usually foothill woodland and forested areas at higher elevations, often along streams in the Coast Ranges. In my personal 50+ years of experience in the Sierra Nevada, I have only seen 5 or 6 individuals. So, visitors from other states should look for more success in the northern Sierra, or in the California Coast Ranges where this species can be common. The larval host plant is False Indigo, *Amorpha californica*.

**Flight:** Records seem to run from late January to early November in the Sierra Nevada, but in the southern Sierra there appears to be a single brood in late June and July.

**61. Cloudless Sulphur—*Phoebis sennae marcellina*** (Cramer, 1877).

This migratory butterfly occurs in the Sierra Nevada as only a rare migrant or transient at the south end of the Sierra on the north side of SR 14, as when thousands were found there associated with *Cassia armada* in Jawbone Canyon and Cantil in 1983-84 and 1992.

**Type Locality:** “Surinamen” or “Suriname”.

**Records: California: Calaveras County:** Camp Connell, over 20 adults seen 14 to 21 Aug 1992 (JRM). **Kern County:** Cantil-Jawbone Canyon area 24 June to 23 Sep 1983: 19 Sep to 9 Oct 1984 and 22 May 1992 (all KD); Butterbredt Peak 25 Apr 1992 (JGP); Greenhorn Mountains N of Black Mountain Saddle, seen 28 June 1995 (KD). **Madera County:** Sugar Pine Lake 27 Apr 1992 (seen, KD & AR); Oakhurst 8 June 1992 (KD, seen). **Mariposa County:** Jerseydale 2 May 1992 (AOS). **Nevada County:** Lang Crossing 5000' 4 & 18 May 1992 (AMS); Hwy 89, E slope near Sagehen Creek 12 May 1992 (AMS). **Placer County:** Crystal Springs Rd near Baxter 8 May 1992 (AMS); near Pacific House 23 May 1992 (AMS). **Tulare County:** Eshom Camp just W of Kings Canyon National Park 9 July 1983 (KD); Kennedy Meadows, seen 25 July 1995 (RPM); Greenhorn Mountains: N of Portuguese Pass 25 July 1995 (seen, KD).

**Distribution: California:** All of the records above are of strays or transient populations, this is NOT a resident species anywhere in the Sierra Nevada. *Phoebis sennae* is recorded in the Sierras from Calaveras, El Dorado, Inyo, Kern, Madera, Mariposa, Nevada, Placer and Tulare counties. **Nevada:** No Sierra Nevada records.

**Habitat:** This butterfly occurs in transient colony locations at the south end of the Sierra Nevada with the host *Cassia armada* abundant where Mojave Desert creosote bush/sagebrush associations. Adults seek nectar at nearby alfalfa fields and water at mud from rainbirds© irrigating fields or irrigation ditches. Strays were seen in many habitats, including Lower and Upper Sonoran Life Zones and Transition Zone forest.

**Flight:** April-October.

## **62. Desert Orange-tip—*Anthocharis cethura* Felder & Felder, 1865.**

**Taxonomic notes:** Some would consider all the southern west slope Sierra Nevada populations in Kern and Tulare Counties to be nominotypical *cethura*. But, a big argument against that view is that females in the Kern River drainage of the Sierra rarely have orange-tips on the forewings like San Joaquin Valley *morrisoni*, though they are smaller in size.

### **a. Desert Orange-tip—*Anthocharis cethura* Felder & Felder, 1865.**

**Type Locality:** Vicinity of Los Angeles, Los Angeles County, California.

**Records: California: Kern County:** Jawbone Canyon, 3 mi W of SR 14, 15 Mar 1995 (J. B. Vernon); ridge to the southwest of Butterbredt Peak 15 May 1976 (KD & JB); 23 Apr 1981 and many subsequent records (KD).

**Distribution: California:** Kern County: The populations in Kelso Valley and on the east side of the Piute Mountains are probably a subspecies *cethura* X *morrisoni* intergrade population.

**Habitat:** Elevated Mojave Desert plant communities and some Juniper woodland, with adults hilltopping on hills and ridges up to about 6000'

**Flight:** Late February to early May.

**b. Morrison's Desert Orange-tip—*Anthocharis cethura morrisoni*** W. H. Edwards, 1881.

**Taxonomic notes:** The use of which subspecies names to apply to populations of *cethura* in the Sierra Nevada is controversial. Some believe the name *morrisoni* only applies to the very large San Joaquin Valley populations which nearly always lack “orange-tips” in females. John F. Emmel applied the name *morrisoni* to those populations upstream in the Sierra Nevada in the Kern River drainage (Emmel, Emmel & Mattoon, 1998d). Others believe those are closer to nominotypical *cethura*.

Females of *morrisoni* in the San Joaquin Valley lack forewing orange-tips, with a few having only a trace of yellow in the forewings in rare individuals. Populations in the Sierra Nevada I am calling *morrisoni* here usually lack orange-tips in the females, but sometimes have orange tips on the forewings.

**Type Locality:** Summits of small hills along the Kern River near Bakersfield, Kern County, California.

**Records: California: Kern County:** Kern Canyon at Miracle Hot Springs (=Hobo Camp) on west facing slopes of Hooper Hill above Clear Creek 26 & 28 Feb 1972 (JB); 4 Mar 1977 & 16 Mar 1978 (KD); Hooper Hill ridges 14 Mar 1972 (JB) & 25 Apr 1980 (KD); Greenhorn Mountains E slope on hilltops 2 mi S Kernville 24 Apr 2000 (KD); dry hills on E side Lake Isabella 2-3 mi S Kernville 24 Mar & 1 Apr 2000 (KD). **Tulare County:** Goldledge Camp E of Kern River on hilltops 25 Apr 1976 (JB & MS); 14 Feb 2002 (KD); Kern River N Riverkern on hill common 1 Feb 2003 (KD); 0.6 mi N of Roads End at Dam, a stray 31 Mar 2000 (KD), northern limit for this subspecies.

**Distribution: California:** The Sierra Nevada populations in Kern and Tulare counties in the Kern River drainage range north as far as east of the Kern River along the Salmon Falls Rd a few miles north of Ant Canyon and populations in the Kelso Valley area are probably a *cethura* X *morrisoni* blend zone.

**Habitat:** Dry foothill woodland or superficially bare hills with sagebrush in the Upper Sonoran Life Zone on the east side of Lake Isabella or the east slope of the Greenhorn Mountains or on Hooper Hill adjacent to the Piute Mountains and Clear Creek and sagebrush in the Upper Sonoran Zone. Males frequently go to hilltops in the southern Sierra Nevada, but favor ravines on the west side of the hilly San Joaquin Valley.

**Flight:** Some years, I have seen good flights in southern Tulare County at the entrance to Sequoia National Forest and on hills on the east side of Lake Isabella in Kern County even around February 1<sup>st</sup> during warm spells following good winter rains. Normal flights in the southern Sierra Nevada occur sooner than those in the southern San Joaquin Valley because of temperature inversion and Valley fogs down on the Valley floor. Normal flight times would be the second half of February through April.



**c. Desert Orange-tip—*Anthocharis cethura hadromarmorata*** Emmel, Emmel & Mattoon, 1998.

**Taxonomic notes:** This subspecies is distinguished by its heavier green marbling on the underside (ventral) of the hindwings. *A. cethura hadromarmorata*'s status as a named subspecies and its occurrence in Kern and Tulare counties is contentious. Some point to collection evidence that nominotypical *cethura* also can also have very heavy green marbling.

**Type Locality:** Nevada, Churchill County, 2 ½ road miles west of Junction US Highway 50 and US alternate 95 on US 50, south end of Swingle Bench, 4100' elevation.

**Records: California: Inyo County:** Lower Nine Mile Canyon, common 1 Mar 2005 (KD); upper Nine Mile Canyon 19 Apr 2003 (KD); Big Pine Canyon 30 Apr 2000 (KD) and 7 Apr 2002 (JGP); seen Lone Pine Creek below Whitney Portal 30 Apr 2017 (KD); Bishop Creek Rd, near Tollhouse 6500' very common on hills 1 Apr 2019 (RPM).

**Kern & Tulare counties:** Ridge 1 mi W of Lamont Peak on Kern/Tulare co. line, 29 Apr 2001 (KD); **Tulare County:** hill E end Lamont Meadows off Chimney Peak Rd, female 26 Apr 2018 (KD).

**Distribution: California:** Inyo, Kern and Tulare counties. The known northern range limits up the east side of the Sierra Nevada is west of Bishop on dry hills at about 6500' off the road to South Lake and Lake Sabrina. **Habitat:** Sierra Nevada east and south slope canyons with Mojave Desert plant communities or in foothill woodland, pinyon pine/juniper or sagebrush plant communities. This butterfly also occurs along the Chimney Peak Rd at the southeastern portion of the Kern Plateau.

**Flight:** Late February to early May.

**63. Sara or Pacific Orange-tip—*Anthocharis sara*** Lucas, 1852).

There are two subspecies in the Sierra Nevada.

**a. Sara or Pacific Orange-tip—*Anthocharis sara sara*** Lucas, 1852.

**Sierra Nevada Type Locality:** Queen Lily Campground near Belden, North Fork Feather River, 2400', Plumas County, California.

**Records: California: Inyo County:** Nine Mile Canyon 21 Mar & 18 May 2003; 5 & 23 Apr 2019 (KD). **Madera County:** Beasore Rd, Chilkoot Camp 28 May 2002 (KD), *stella* flying just up the road. Somewhat worn white colored *sara* along Big Creek and tributary stream at Big Sandy Camp 29 & 30 May 2007 (KD), sympatric with freshly emerged yellowish *A. julia stella*. Few records are given here because *sara* is common and widespread but the above records are more significant. Nine Mile Canyon is on the east slope of the Sierra Nevada and the only

locality in Inyo County for nominotypical *sara*. Other records demonstrate *sara* and *A. julia stella* can overlap ranges.

**National Park Records: Sequoia NP: Tulare County:** Potwisha Camp 17 May 1985 & 28 Feb 1986 (KD); Ash Mountain and Buckeye Flat 28 Feb & 18 Apr 1986 (KD); Mineral King Rd Park entrance 8 May 1993 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley in meadow at Camp Curry 31 May 1964 (KD).

**Distribution: California:** All counties.

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones (in the southern Sierra where *A. julia stella* has not yet been found). These common west slope orange-tips that fly mostly in the spring fly in foothill woodland, mixed coniferous forests and riparian canyons and drainages.

**Flight:** Late February to mid-June, occasionally into July in wet years.

**b. False Southwestern Orange-tip—*Anthocharis sara pseudothoosa*** Austin, 1998.

**Taxonomic note:** This eastern slope of the Sierra Nevada subspecies was described as a *sara* by Austin (1998a), believed to be a *thoosa* subspecies for a few years but Todd Stout's (2018) rearing work found that *pseudothoosa* is more similar to *sara* larvae than *thoosa* larvae.

Austin stated in his description: "It differs from *sara* by having a paler orange apical patch on the forewing, the cell bar in considerably narrower and extends more narrowly to the outer margins on males".

**Type Locality:** Nevada: Douglas County, Sweetwater Mountains, Jackass Creek, southwest of Desert Creek 2195m.

**Records: California: Mono County:** Lower Rock Creek 14 May 2006 (KD), the southern limit for this subspecies in the Sierra Nevada; dirt road off US 395 near west shore Mono Lake 30 May 2015 (KN); Bootleg Camp US 395, 10 May 2016 (Robert Dowell). **Sierra County:** Sierra Valley 5000' 10 Apr 88 (sympatric with *stella*, AMS). **Nevada: Douglas County:** Carson Range, Genoa Canyon 10 May 1981 (GTA). **Washoe County:** Hwy 81 at Mountain Pass 6100' & W edge Duck Flat 23 Apr 1981 (SOM); Carson Range along Truckee River 29 & 30 May 2019 (MW); Hungry Valley area off Eagle Canyon Rd 8 & 18 Apr 2016 (JD).

**Distribution: California:** Mono, Alpine, El Dorado, Placer, Plumas and Sierra counties.

**Nevada:** Douglas and Washoe counties.

**Habitat:** Wetter riparian and woodland areas on the east slope of the Sierra Nevada, usually at lower elevations than *Anthocharis julia stella*.

**Flight:** Mid-April to early July.

**64. Stella (Julia's) Orange-tip—*Anthocharis julia stella* W. H. Edwards, 1879.**

**Taxonomic note:** This orange-tip was long treated as a *sara* subspecies but Geiger, Hansjurg, and Arthur M. Shapiro (1986) provided electrophoretic evidence that “*sara*” was actually a species complex which included *julia* and *stella*, the latter two now viewed as conspecific with each other based on the studies of Todd Stout (2018). The author’s publications of Yosemite Butterflies (2004 & 2007) used the combination *Anthocharis stella*, not then known to be conspecific with *julia*.

**Sierra Nevada Type Locality:** Marlette Peak, Carson Range, Washoe County, Nevada.

**Records:** **California:** **Amador County:** Common at Tragedy Springs, W of Silver Lake 11-13 July 1986 (KD) and several miles to the west 12 June 2003 (KD & William H. Howe). **El Dorado County:** Above timberline E of Carson Pass 13 July 1986 (KD); near Echo Summit 7300’ 31 May-12 June 1999 (EDB). **Fresno County:** Above Huntington Lake 8 July 2002 (RE); Mary’s Meadow 7800’ 1 July 1930 (LMI). **Inyo County:** SF Bishop Creek, Inyo National Forest 18 July 2019 (PO-EBO); **Madera County:** Stream above Fresno Dome Trailhead 7500’ 1 & 2 July 1996 (KD); road below the trailhead 13 June 2002 (KD); fresh yellowish *stella* flying in numbers along creek below Fresno Dome Camp, Little Sandy Camp and a few at Big Sandy Camp 29 & 30 May 2007 (KD), sympatric with about five somewhat worn 2<sup>nd</sup> brood white *sara*, no intermediates were noted. **Mono County:** Below Anna Lake, E side of the Sierra Nevada 16 July 1974 (JRM); Green Canyon 10 June & 6 July 1996 (BRB); Minaret Summit, Mammoth Lakes 14 July 2000 (BG); E of Tioga Pass 9800’ 25 Aug 1956 (RES & KCH); Hudsonian Forest W below Saddlebag Lake Dam 30 July 2019 (KD). **Nevada County:** Castle Peak 9000’ 12 Aug 1982 (AMS) & Castle Peak Trail 7500-8000’ 5-10 July 1999 (EDB). **Placer County:** Squaw Valley near Truckee 14 June 2003 (KD). **Plumas County:** Round Lake Loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Sierra Valley 5000’ 10 Apr 1988 (sympatric with *A. sara*, AMS); Sierra Buttes Rd above Packer Lake 7100’ 22 June 2002 (DS), sympatric with *A. sara*; Henness Pass Rd W Nevada state line 17 June 2016 (JD). **Tuolumne County:** 1 mi. E of Mather June-July (AOS, no year given); SR 108 Clark Fork Stanislaus River & Dardanelles 24-26 June 1993 (PMT). **Nevada:** **Carson City County:** E side North Canyon Rd 4.4 mi S Marlette Peak 13 June 2008 (Todd Stout). **Douglas County:** Carson Range, US 50, Montreal Canyon 21 May 1984 (GTA). **Washoe County:** Hunter Creek and Canyon 25-26 Apr 2010 (Alex Grkovich); Jones-White Creek Loop Trail, Galena Park 2 June 2012 and 23 June 2016 (JD).

**National Park Records:** **Yosemite NP:** **Mariposa County:** Trail on saddle below Half Dome 30 May 1970 (KD). **Tuolumne County:** White Wolf 10 July 56 (JSG).

**Distribution:** **California:** Alpine, Amador, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, and Plumas counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Transition, Canadian and Hudsonian Life Zones on the Sierran west and east slopes and along the Sierra Crest. Found in forest openings and small meadows, often along small creek and drainages.

**Flight:** Late May (April in some areas) to early August.

**65. Gray Marble**---*Anthocharis lanceolata* Lucas, 1852.

This species is a near California endemic that is one of the most looked for species by people seriously interested in butterflies as this butterfly occurs in many areas of the Sierra Nevada.

**Taxonomic notes:** A population at Miracle Hot Springs in Kern Canyon has been treated as *Anthocharis lanceolata australis* (F. Grinnell, 1908), a smaller and more heavily marked subspecies that has been recorded in the Frazier Park area in western Kern County, not in the Sierra Nevada. Emmel & Emmel (1973) treated the Miracle Hot Springs colony as *australis* as Langston believed they were. Paul Opler who has examined these specimens determined that these are all nominotypical *lanceolata*.

This butterfly has also gone under the common English name Boisduval's Marble and Lanceolate Marble since this species lacks orange-tips, though it is actually an orange-tip. Some have placed this butterfly in the genus *Paramidea* or *Falcapica*.

**Sierra Nevada Type Locality:** Highway 70 at Soda Creek, E. Branch of North Fork Feather River Canyon, 2500', Plumas County, California.

**Records: California: El Dorado County:** Rock Creek Rd 7 mi NE of Placerville 4 Mar 1988 (RLL/DP). **Fresno County:** E end of Huntington Lake 7000'8000' 12 June-24 July 1930 (LM/CI). **Inyo County:** Olancha Peak 5200' 7 May 1990 (JFE); upper Nine Mile Canyon 2 May 1994; 21 & 28 Mar and 19 Apr 2003; 12 Apr 2005 and 30 Apr 2019 (KD). SF of Bishop Creek mostly under 7500' 17-18 May 1993 and 8 May 1997 (KD). **Kern County:** Kern Canyon at Miracle Hot Springs 31 Mar 1969 (RLL) 15 Mar & 16 Mar 1984 (KD); Chimney Peak Rd S of Lamont Peak 12 Apr 2005 (KD); Piute Mountains S of Bodfish 3 Apr to 21 May 1976 & 30 May 1979 (KD); E side Greenhorn Mountains S of Kernville 24 Apr 1981 (KD). **Madera County:** 5 mi S of Oakhurst 10 Apr 1964 (PAO); Chilkoot Camp 28 May & 13 June 2002 (KD); meadow off Fresno Dome Trail 30 June 2004 (KD). **Mariposa County:** Jerseydale 9-13 June 1962 (AOS); Briceburg along the Merced River 28 Mar 1981 (KD) & 28 Mar 1991 (PMT). **Mono County:** Mill Canyon Rd SW of Walker 10 May 1997 (JGP). **Placer County** Strawberry, 5308' 20 Jun 1930 (no collector given). **Plumas County:** Frazier Falls Road, Plumas National Forest 28 June 2017 (SFSU – BSNC); Soda Creek 2500' W of Paxton 29 May 82 (ESM); 1 mi S Meadow Valley 4100' 6 & 8 June 1997 (RLL); Grizzly Rd N Hwy 70, 20 May 2017 (KN). **Sierra County** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20 June 2005 (SFSU-BSNC); Forest road 52, S Bassetts, Tahoe National Forest 26 June 2017 (SFSU – BSNC); Near Sierraville 7 May 1987, Sierra E slope (AMS); Oregon & Miller Creeks 4000' 15 June 2001 (DS). **Tulare County:** Mineral King Rd below Sequoia Nat'l Park 8 May 1993 (KD); Greenhorn Mountains, Baker Ridge 4 & 24 July 1995 (KD); Boulder Creek E of Big Meadow near KCNP 30 June 2017 (KD); Sherman Pass Rd at Alder Creek 6800' 22 & 29 May 2012 (KD); Bald Mountain Lookout at 9400' 23 June 1994 (KD). **Tuolumne County:** Lumsden Bridge, Tuolumne River 23 Apr 1987 (JRM & R. Coyle). **Nevada:** Carson City County: King

Canyon, 5554' 22 Jun 1970 (RLL). **Douglas County:** Glenbrook, 7000', 5 May 1987 (GTA). **Washoe County:** Galena Regional Park, Jones Creek Loop Trail 2 June 2012 and 23 June 2016 (JD).

**National Park Records: Sequoia NP:** Buckeye Flat 18 Apr & 17 May 1985; 2 mi W of Hospital Rock 28 Feb 1986; Ash Mountain 28 Feb 1986; Potwisha 18 Apr 1986; Mineral King Rd checking station 8 May 1993 (all KD). **Yosemite NP: Mariposa County:** Yosemite Valley, Happy Isles Trail 31 May 1964 (KD); Yosemite Valley 14 May 1959 (R. Paul Allen); trail from Camp Curry 4000' to Glacier Point 7214' 9 July 1933 (JSG).

**Distribution:** California: Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones: This species favors rocky steep walled canyons, often along streams in foothill woodland, chaparral, mixed coniferous forest and open rocky areas in coniferous forests.

**Flight:** March to mid-July.

#### **66. Large Marble—*Euchloe ausonides* (Lucas, 1852).**

This is a larger butterfly than *Euchloe hyantis*, size is not always evident in photographs which can make it very difficult to identify between the two. But, in the field or with an actual specimen, the two are usually quite identifiable. Two subspecies occur in the Sierra Nevada with *transmontana* being the smaller of the two most of the time.

##### **a. Large Marble--*Euchloe ausonides* (Lucas, 1852).**

**Type Locality:** San Francisco, San Francisco County, California.

**Records: California: El Dorado County:** Chili Bar, American River, 7 mi NE Placerville 5 Mar 1988 (RLL, DP). **Fresno County:** Kerckhoff Lake 10 June 1973 (JRM). **Madera County:** Coarsegold 23 May & 8 June 1992 (KD). **Mariposa County:** Jerseydale Apr-May, including one with a nearly solid green underside 5 May 1974 (AOS); Midpines and Briceburg along the Merced River and Bear Creek 28 Mar 1981 and 20 Apr 1984 (KD). **Placer County:** American River below Auburn 21 May 1994 & 22 Apr 1996 (KD). **Tulare County:** Mineral King Rd 8.6 mi from SR198, 8 May 2002 (KD, this is very near the Sequoia NP boundary; Sherman Pass Rd E of Kern River from North Meadow Creek to Alder Creek 6800', 9 & 15 May 2007, blending into *transmontana* from about Alder Creek to nearly 8000'.

**Distribution: California:** El Dorado, Fresno, Madera, Mariposa, Placer, Plumas, Tulare, Tuolumne and Yolo counties. This subspecies occurs at lower elevations on the Sierra Nevada west slope.

**Habitat:** Upper Sonoran and lower Transition Life Zones. This butterfly occurs in foothill woodland, often near creeks or rivers.

**Flight:** Mid-March-early July.

**b. Mountain Large Marble---*Euchloe ausonides transmontana*:** Austin & J. Emmel, 1998.

**Taxonomic notes:** This subspecies occurs at higher elevations in the Sierra Nevada, is smaller in size than subspecies *ausonides* and lacks the cream color or yellow flush found in nominotypical female *ausonides*. There appears to be a blend zone on the Sherman Pass Road in Tulare County between nominotypical *ausonides* below 6800' and *transmontana* up to 9000'.

**Type Locality:** Nevada, Lander County, Toiyabe Mountains, Kingston Canyon 2050m.

**Records: California: Fresno County:** Home Creek 8500' 14 to 19 July 1930 (LM/CI). **Inyo County:** South Fork of Bishop Creek at 6600' to 8000' 23 June 1986; 17-18 May 1993 and 8 May 1997 (KD). **Madera County:** Fresno Dome 5 July 1999 and 13 June 2002 (KD). **Tulare County:** Big Meadow (Kern Plateau) 25 June 1972 (JB, southern limit in the Sierra Nevada); Sherman Pass Rd at and above Alder Creek 6800' to 9000', many dates in late May to early July (KD); Bald Mountain 8700'-9200' 27 June 1999 (KD); 1 mi E of Sherman Pass, uncommon 9 June 2001 (KD). **Mono County:** Swall Meadow 9 & 20 May 1997 (KD) and 30 May 1999 (KD & Jack Levy); Hot Creek E of Mammoth and Lower Rock Creek 14 May 2006 (KD); rocky slopes W of Saddlebag Lake Dam 29 and 30 July 2019 (seen, KD). **Tuolumne County:** Brightman Station, 10 mi W of Sonora Pass 6600' 3 July 1959 (RES, PAO, Nora Opler). **Nevada: Washoe County:** Hunter Crk. & Canyon 25-26 Apr 2010 (Alex Grkovich).

**National Park Records: Sequoia NP: Tulare County:** Tokopah Falls Trail 12 June 1990 (KD) and south end Mineral King Valley, Farewell Gap Trail 19 June 1993 (KD) and White Chief Trail 23 July 1992 (KD). **Yosemite NP: Mariposa County:** Top of Half Dome 8842' overlooking Yosemite Valley 1 June 1970 (seen, KD); Research Reserve (Yosemite Creek area) 16-17 July 1933 (JSG); Tamarack Flat 3 July 1954 (JWT).

**Distribution: California:** Alpine, Inyo, Mariposa, Mono, Nevada, Placer, Plumas, Tulare and Tuolumne counties. This subspecies occurs at higher elevations in the Sierra Nevada and on the east side of the Sierra in well-watered areas with sagebrush habitats. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Transition, Canadian and Hudsonian Life Zones on the Sierra Nevada on both west and east slopes. This Marble occurs in chaparral areas and in mixed coniferous/coniferous forests in higher elevations, along streams and in wet meadows or ravines.

**Flight:** Mid-May to July.

**67. Pearly Marble—*Euchloe hyantis*** (W. H. Edwards, 1871).

Specialists and authors differ on the issue of whether the Desert Marble (*Euchloe lotta*) is conspecific with the Pearly Marble (*Euchloe hyantis*) or not. Reportedly, *hyantis* prefers Jewel Flowers as the larval host but both are known to use rock cress, tower mustard, hedge mustards

and other plants. The Pelham Catalogue (2008, 2019), Paul Opler (1999) and others prefer to treat the two as separate species while other authors (Scott & Opler, 2017) treat them as subspecies.

**Taxonomic notes:** On the Kern Plateau in the southern Sierra Nevada north of Highway 178 and Walker Pass and in upper Nine Mile Canyon in Inyo County west of US 395 there appears to be either a blend or hybrid zone between *hyantis* and *lotta* phenotypes. Such individuals with mixed characters have been collected by Jim Brock and the author and such specimens were noted at the Colorado State Museum collection in Fort Collins, Colorado by James Scott.

**Type Locality:** Vicinity of Ukiah, Mendocino County, California.

**Pearly Marble—*Euchloe hyantis hyantis*** (W. H. Edwards, 1871).

**Records:** **California:** **Alpine County:** Leviathan Peak, Monitor Pass, Humboldt-Toiyabe National Forest 15 July 2019 (PAO-EBO). **El Dorado County:** Chili Bar, American River, 3 mi NE Placerville 5 Mar 1988 (RLL, DP). **Inyo County:** Upper Nine Mile Canyon 21 & 28 Mar 2003, mix of *hyantis* & *lotta* phenotypes (KD). **Madera County:** 5 mi S of Oakhurst 10 Apr 1964 (PAO); Beasore Rd 14 mi E of Bass Lake 22 June 1987 (PAO); Fresno Dome 1-2 July 1996 & 11 July 1999 (KD). **Mariposa County:** Indian Flat 17 Apr 1961 (JWT); Briceburg 20 Apr 1984 (KD). **Mono County:** Minaret Summit, 8965', Inyo National Forest 17 July 2019 (PAO-EBO). **Plumas County:** Frazier Falls Road, Plumas National Forest 28 June 2017 (SFSU – BSNC); Round Lake loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20 June 2005 (SFSU-BSNC); Packer Saddle, Tahoe National Forest 28 June 2017 (SFSU – BSNC). **Tuolumne County:** Tioga Lake 14 July 2000 (BG); Wolf Canyon 11 July 1996 (BRB). **Tulare County:** Hill E end of Lamont Meadows off Chimney Peak Rd 19 & 27 Mar 2003 (KD), mix of *hyantis* and *lotta* phenotypes; Greenhorn Mountains, Baker Ridge Lookout 7753' 7 July 1977 (JB); 11 June 1981; 4 July 1995 and 4 July 1998 (all KD). uncommon Upper Kern River near Limestone Camp along rocky walls bordering road 7 & 21 Apr 1997 and other dates (KD); Sherman Peak 10,050' 19 June 2002 (KD); Bald Mountain Lookout 9400' 10 July 1982 & 21 June 1985 (KD). **Tuolumne County:** Mather 14 May 1961 (JWT); Brightman Station 24 June 1957 (RES/KCH). **Nevada:** **Washoe County:** Carson Range, Truckee River 29-30 May 2019 (MW).

**National Park Records:** **Sequoia NP:** **Tulare County:** Buckeye Flat 18 Apr 1986 & 13 Apr 1990 (KD); Mineral King (no date, JHM). **Yosemite NP:** **Mariposa County:** Trail from Glacier Point to Nevada Falls 9 July 1933 (JSG); trail to Half Dome on saddle 8000' 1 June 1970 (KD).

**Distribution:** **California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties.

**Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** These butterflies occur in elevated sagebrush, steep rocky slopes, rocky outcrops, in canyons and on hilltops.

**Flight:** March-July.

**68. Desert Marble—*Euchloe lotta* near *belioides* Verity, (1909).**

**Taxonomic notes:** The status of *lotta* as a full species or as a *hyantis* subspecies is contentious, and in my opinion, a good argument can be made for either view. If *lotta* proves to be a subspecies of *hyantis*, the name would be *Euchloe hyantis belioides* for California populations. Both *hyantis* and *lotta* phenotypes occur in Nine Mile Canyon, the Kern Plateau and on Bald Mountain. Are these two species flying together, intergrades or hybrids?

**Type Locality:** Arizona and St. Ignatius, Lake County, Montana.

**Records: California: Inyo County:** Big Pine Canyon 6000' 30 Apr 2000 (KD); dry hills off road to Lake Sabrina W of Bishop 6000' to 7500' 17 May 1993 (KD); lower Nine Mile Canyon 21 & 28 Mar 2003, upper Nine Mile Canyon 19 Apr 2003 (all KD), *lotta* predominates at lower levels, but *hyantis* phenotypes appear at higher levels, field marks are mixed with apparent intermediates; Whitney Portal area 7 May 1992 & 25 Apr 2005 (KD). **Kern County:** Butterbreed Peak area 15 May 76 (JB & KD) & 23 May 2005 (KD); Bird Spring Pass 1 May 1981 (KD); Kelso Valley region 12-17 mi S of Weldon 29 Mar 1986; 5 & 11 Apr 2005 (KD); E side of Piute Mountains from Sageland to 3 mi W up Piute Mountain Rd grade 6 Apr 2002 & 5 Mar 2003 (KD). **Mono County:** ridge overlooking Rock Creek Gorge 20 May 1987; 12 May 1989 & 9 Apr 2007 (KD); near Dechambeau Creek W of Mono Lake Park 19 Apr 2015 (KN). **Tulare County:** Kennedy Meadows area 22 May & 25 June 1982 (KD); 10 mi S of Kennedy Meadows 8 & 26 June 1975 (JB); N slope of Lamont Peak near W end Lamont Meadows in canyon (both *lotta* and *hyantis* phenotypes) 10 Apr 1985 & 27 Apr 2003 (KD); hill at E end of Lamont Meadows 19 & 27 Mar 2003 (KD), with individuals that appear to be *hyantis*, *lotta* or intermediates with *lotta*. Bald Mountain Lookout 9400' 26 May 2001 and other dates, at this elevation all should be *hyantis*, but individuals with both narrow and wide cell bars are frequent (KD).

**Distribution: California:** Alpine, Amador, El Dorado, Inyo, Kern, Mono, Nevada, Placer, Plumas, Sierra, Tulare counties. **Nevada:** Coordinator checklists consider *hyantis* and *lotta* conspecific. Austin (2008) does give a larval record by Todd Stout for Douglas County.

**Habitat:** Mojave and Great Basin plant communities and the southern end of the Sierra Nevada and east slope of the Sierra Nevada including the Kennedy Meadows/Kern Plateau region.

**Flight:** March to July.

**69a. Pine White--*Neophasia menapia* (Felder & Felder, 1859).**

**Taxonomic notes:** Some very large Pine Whites that may represent subspecies *magnamenapia* Austin, 1998 have been collected at Whitney Portal, Inyo County, California. Normal sized *menapia* were also present.



**Sierra Nevada Type Locality:** Vicinity of Davis Creek Park, Washoe Valley, Washoe County, Nevada.

**Records: California: Fresno County:** Pine trees near Huntington Lake 7000-8000' 27 July to 30 Aug 1930 (LMI); Shaver Lake 28-29 Aug 1987 (AOS). **Inyo County:** Whitney Portal 25 Aug 1998; 29 July 2014 & 27 Aug 2018 (KD). **Kern County:** Greenhorn Mountains: entrance of road to Shirley Meadows 11 July 1981 (common, Rick Hewitt & PN) and S of Tiger Flat 11 July 1981 (two, KD). There are no recent records there since the major 1990 forest fire. **Madera County:** Fresno Dome Camp 26 July 1992 & 21 Aug 1999 (KD); Sugar Pine 4 Aug 1990 (KD). **Mariposa County:** Fish Camp 28 July 1989; 4 Aug 1990 and 25 July 1992 (KD). **Mono County:** Rest stop off US 395 N of Mammoth Lakes and S of June Lake 16 Aug 2000 (KD); Devil's Gate Pass at flowers along creek in open meadow 100 yards from pines 25 July 2014. **Nevada County:** Donner Pass in outbreak numbers 9 Sep 1993 (AMS, very unusual). **Tulare County:** Balch Park 29 July 1977 (KD); Stony Creek area 18 Aug 1989; 4 & 13 Sep 1991 (KD). There are no records from W of Sherman Pass since the catastrophic 2002 forest fire there. **Nevada: Douglas County:** Carson Range, Kingsbury Grade 4.2 to 6.5 E of CA state line 13 Aug 1978 (GTA); Carson Range, Lower Daggett Creek 18 July 81 (GTA). **Washoe County:** Carson Range, Incline Village, 12 Aug 1978 (GTA); Galena Creek Park 17 Aug 1980 (GTA); Ophir Creek Trail 19 Aug 1986 (JD).

**National Park Records: Sequoia NP: Tulare County:** Redwood Creek 26 July 1985 (KD); Giant Forest Village 15 Aug 1986 (KD); Generals Hwy near Crystal Cave Jct. 15 Aug 1989 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley 12 July 1966 (seen, KD); Little Yosemite Valley above Nevada Falls on trail to Half Dome 5 Sep 1972 (KD).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** This butterfly uses Ponderosa Pines and other pines as larval hosts. Often, these butterflies stay high in the trees, but on occasion, Pine Whites descend from the trees to ground level in large numbers. Major flights may be followed by many years of scarcity or even apparent absence. Adults fly slowly out of the pines to flowers or even to investigate butterfly nets and in such cases, these butterflies are easily observed. At Whitney Portal, the trailhead for hikers to Mt. Whitney, on July 27, 2018, these butterflies were so abundant it appeared the snow was falling and some even tried to fly into my net!

**Flight:** August to early September.

#### **69b. Pine White, un-named segregate:**

**Records: California: Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 12 July 2012 (SFSU-BSNC). **Sierra County:** Forest road 52, S Bassetts, Tahoe National Forest 26 June 2017 (SFSU – BSNC). Note: July records above under *N. menapia* may well

represent this segregate, but host association with Douglas-fir and genomic status for those populations need to be studied.

**Habitat:** Mixed conifer forest with the apparent host Douglas-fir.

**Flight:** Late June – mid-July.

#### **70. Small Veined White—*Pieris marginalis castoria* Reakirt, 1866.**

**Taxonomic Note:** This butterfly was long believed to be a subspecies of the European Veined White (*Pieris napi* Linnaeus) and was formerly known as subspecies *microstriata* J. A. Comstock., 1924.

**Type Locality:** Castoria (=French Camp), San Joaquin County, California.

**Records:** **California:** **Calaveras County:** Railroad Flat 2600' 16 Apr 1983 (R. Skalski). **El Dorado County:** Rock Creek SR American River NE Placerville 20 Mar 1976 (RLL). **Fresno County:** Auberry Rd 2100' at Powerhouse crossing 0.1 mi S along San Joaquin River 12 Apr 2002 (RKS). **Madera County:** Sugar Pine 24 May 1991 & 23 May 1992 (KD & AR); small stream up road from Fresno Dome Trailhead 8000' 5 July 1999 (KD); Chilkoot Creek/Camp 7 May 2004 (KD). **Mariposa County:** Briceburg at Bear Creek 28 Mar 81 & 20 Apr 1984 (KD); Fish Camp 5000' 24 May 1991 & 27 Apr 1992 (KD). **Nevada County:** Washington 11 July 1989 and 23 Feb 1992 (AMS). **Placer County:** Soda Springs 7000' 26 June 1986 (AMS); American River near Auburn 22 Apr 1996 & 13 June 2003 (KD). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20 June 2005 (SFSU-BSNC); **Tuolumne County:** 3 mi NE of Tuolumne City 24 Mar 1978 (RLL).

**National Park Records:** **Yosemite NP:** **Mariposa County:** Yosemite Valley 14 May 1959 (R. P. Allen).

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones. This west slope butterfly favors riparian areas in shaded areas with deciduous trees or mixed coniferous forest, as high as Canadian Zone forest above Fresno Dome in Madera County.

**Flight:** Mid-March to mid-May in most places, into early July at the highest elevations this butterfly inhabits.

#### **71. Cabbage White—*Pieris rapae* (Linnaeus, 1758).**

This is a common butterfly in city gardens and other weedy areas. Because this butterfly is so well known and widespread, only National Park records are given.

**Type Locality:** Sweden.

**National Parks Records:** **Sequoia NP:** **Tulare County:** Mineral King Valley 5 July 1985; Silver City 5 July 1985 (KD); Giant Forest Village 15 Aug 1986 (KD) and many other localities.

**Yosemite NP: Mariposa County:** Pate (Trail from Harden Lake down north facing granite slope to Pate Valley 4500') 23 July 1934 (Edmund Godwin).

**Distribution:** This butterfly is found in all counties in the Sierra Nevada. **Habitat:** It occurs most commonly in Sierran cities and parks but can be uncommon and localized in the wild.

**Flight:** Late February- mid-November.

## **72. Becker's White—*Pontia beckerii* (W. H. Edwards, 1871).**

**Near Sierra Nevada Type Locality:** Virginia City, Storey County, Nevada.

**Records: California: El Dorado County:** Trail to Freel Peak 10,750' 17 July 2005 (E/P). **Inyo County:** 2 mi W of Lone Pine 7 May 1992 (KD); SF of Bishop Creek 7000'-9000' 9 May 1992, 20 May 1997 & 17 June 2004 (KD); Nine Mile Canyon 30 Apr & 18 May 2019 (KD). **Kern County:** This species regularly occurs from the drier eastern Sierran slopes to the western edge of the Mojave Desert at Cantil and in Jawbone Canyon, and occasionally ranges to the west slope Sierra Nevada foothills: 8 mi N of Oildale at Poso Creek 18 May to 26 June 1981 (KD) and foothills near Hart Park and the Kern River 20 June 1972 and 6 to 16 June 1981 (KD). **Madera County:** Rainbow Falls, 5 mi W Crystal Crag Lodge 3 Aug 1961 (RES). **Mono County:** Little Walker River Rd, W of US 395 near Sonora Jct. 8 Sep 2009 & 25 July 2014 (KD). Warren Creek 9000' off Tioga Rd 21 June 1986 (KD). **Nevada/Placer Counties:** Donner Pass 12 Sep 1978 (AMS). **Plumas County:** Sierra Valley, Heriot Lane 27 June 2017 (SFSU – BSNC). **Sierra County:** Smithneck Road, SE Loyalton, Tahoe National Forest, 21 June 2016 (SFSU-BSNC); Sierra Valley 5000' 24 Aug 1985 (AMS). **Tulare County:** Summit Nine Mile Canyon 26 May 2001 (KD); Kern River, entrance to Sequoia (National Forest) N of Riverkern 5 July 2003 (KD); Bald Mountain Lookout 9382' 26 May 2001 (KD); E of Kern River, Sherman Pass Rd near Alder Creek 6800' 26 Aug-9 Sep 2014; 14 & 17 Aug 2018 (KD). **Nevada: Carson City County:** Carson City, Eagle Valley, Lompa Lane at Airport Drive 2 July 1982 (GTA) and 19 June 1989 & 31 May 1998 (GTA). **Douglas County:** Carson Range, Kingsbury Grade 2 mi W of Nv 206, 5 May 1987 (GTA)

**Distribution: California:** Alpine, El Dorado, Inyo, Kern, Madera, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties. The range of this butterfly is primarily along the east slope of the Sierra Nevada and the western Mojave and Great Basin Deserts as it reaches the Sierra Nevada. This butterfly does succeed in penetrating to many west slope localities (especially in the southern Sierra in Kern and Tulare counties) and can establish transient populations in the southern San Joaquin Valley and the western foothills of the Sierra Nevada.

**Habitat:** Upper Sonoran, Transition and up to even the Hudsonian Life Zone near Tioga Pass. Becker's Whites occur in Mojave Desert plant communities, drier foothill woodland and chaparral and sagebrush scrub at higher elevations, especially in east facing canyons of the range.

**Flight:** Common as early as January at the south end of the Sierra Nevada N of SR 14 near Cantil 30 Jan 1995 and 27 Jan 1998 (KD), but more frequently, this butterfly flies late February to October.

**73. Checkered White—*Pontia protodice*** (Boisduval & LeConte (1830).

Heavily marked individuals of this species are frequently mis-identified as Western Whites (*Pontia occidentalis*).

**Type Locality:** “New York”

**National Park Records: Sequoia NP: Tulare County:** Mineral King Valley

5 July 1985 & Timber Gap 9000’-9800’, 22 July 1991 (both KD), flying on high elevation hilltops and ridges in place of the expected *Pontia occidentalis*. **Yosemite NP: Mariposa County:** Yosemite Creek Trail 9 to 17 July 1956 (JSG). **Tuolumne County:** West of Tioga Pass and trail to Gaylor Lakes 29 July 2019 (YBC).

**Distribution:** This butterfly occurs throughout the Sierra Nevada and was seen commonly even in the Hudsonian Life Zone near Saddlebag Lake on 29 July 2019 (KD & YBC). This species tends to be most common in drier montane habitats and in the western Sierra Nevada foothills and on the east slope of the Sierra Nevada.

**Habitat:** Lower Sonoran to Hudsonian, straying upwards into the Arctic-Alpine Life Zone. This is a common species in wastelands, vacant fields, deserts and in more desirable habitats as well.

**Flight:** Normally March to early November, but on January 29, 2019, I found five individuals flying on a tall hill on the east side of Lake Isabella, Kern County, California.

**74. Western White—*Pontia occidentalis*** (Reakirt, 1866).

This butterfly is very frequently confused with more heavily marked individuals of *Pontia protodice*. Garth & Tilden (1963) treated the high elevations dark form as a subspecies: *calyce* (W. H. Edwards, 1870). That name is now treated as an altitudinal form, likely the result of these butterflies living in a very cold climate.

**Type Locality:** Empire Creek, Clear Creek County, Colorado.

**Records: California: Fresno County:** Near Huntington Lake 17 June to 7 July 1930 (LM/CI). **Madera County:** Minaret Summit near Mammoth Lakes 4 Aug 2000 (BG). **Mono County:** E above Saddlebag Lake 10,500’-11,500’, 3 Aug 1975 (KD); ridge 10,000’ below Mt. Conness 26 July 1981 (KD); hilltops S Sonora Pass 10,500’ 7 & 9 July 1987 (KD); one in Lower Rock Creek (in Gorge), south for base of the east slope (9 Apr 2007 (KD); above SE Saddlebag Lake 10,500’ 4 Aug 1970 (KD); S of Sonora Pass 7 & 9 July 1987 (KD); NW side Mono Lake 2-4 Aug 1975 (KD). **Nevada County:** Boreal Ridge 13 Apr 1987 (AMS). **Plumas County:** Round Lake Loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Babbitt Peak, Tahoe

National Forest 4 July 2007 (SEABA-c); Loyalton 5000' 23 Mar 1984 (AMS); Sierra Valley 5000' 24 Aug 1985 (AMS) and 17 Feb 2015 EARLY (AMS). **Tuolumne County**; Leavitt Peak 29 Aug 1967 (PAO).

**National Park Records: California: Sequoia NP: Tulare County:** Tyndale Creek 11,000' 29 July 1954 (C. H. Ericksen); Bighorn Plateau 11,500', 31 July 1954 (C. H. Ericksen), these are the southernmost records for the Sierra Nevada. **Yosemite NP: Mariposa County:** Vogelsang Camp 3 Aug 1958 (JSG); Tenaya Lake 21 June 1973 (B. Smith). **Tuolumne County:** Crest W of Tioga Pass 8 July and 18-20 Aug 1957 (AOS); Upper Gaylor Lake 9 July 1958 (AOS).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. This is a species of the High Sierra found in the Canadian and Hudsonian Life Zones but which in Mono County drops down to the eastern base of the Sierra Nevada and can be found reliably at Mono Lake and Bridgeport northward. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** In the Great Basin, adults visit wetlands, dry brushy wastelands or sagebrush flats and visit blooming sagebrush and other flowering plants. In higher elevations, adults can be found in rocky areas or along the edges of steep slopes with sagebrush or on lower ridges below the higher mountain peaks.

**Flight:** April (at lower elevations) to September.

## 75. Spring or California White---*Pontia sisymbrii* (Boisduval, 1852).

There are two subspecies reported for the Sierra Nevada.

### a. Spring White—*Pontia sisymbrii* (Boisduval, 1852).

**Sierra Nevada Type Locality:** 1-mile NE of Storrie on Hwy. 70, North Fork Feather River Canyon, 2000', Plumas County, California.

**Records: California:** Regular records are not given because this species is usually common and widely distributed, though less so in the High Sierra.

**National Park Records: Sequoia NP: Tulare County:** Mineral King 7000-10,000' (No dates, JHM); Timber Gap above Mineral King Valley 9800' 22 July 1991 (KD). **Yosemite NP: Tuolumne County:** W side of Mt. Dana 19 July 1952 & 16 Aug 1953 (JWT); Upper Gaylor Lake 4 to 8 July 1957 (AOS); Crest W of Tioga Pass 9 July 1958 (AOS); Tioga Pass 10 July 1958 (AOS).

**Distribution: California:** All counties. This butterfly tends to be the most common on the west slope of the Sierra Nevada, and somewhat less commonly on the east slope and in the High Sierra. It is also common in the southeastern Sierra Nevada in Mojave Desert plant communities where males frequently hilltop.

**Habitat:** Unrestricted from the deserts to the tops of mountain peaks in the Arctic-Alpine Life Zones. This species frequents riparian areas with steeply walled canyons in Mojave Desert plant communities, foothill woodland and chaparral, mixed coniferous forest becoming less common at higher elevations in the Canadian Life Zone (but still frequently seen on hilltops and ridges). In the Tioga Pass area, *P. sisymbrii* is an early flier that tends to be scarce, but goes to ridges.

**Flight:** Late February to July.

**b. Spring White—*Pontia sisymbrii elivata*** (Barnes & Benjamin, 1926).

**Type Locality:** Glenwood Springs, Garfield County, Colorado.

**Taxonomic notes:** Austin (2008a) applied the name *elivata*, a darker marked subspecies to the records below. In California it appears to be only nominotypical *sisymbrii* that occurs in the Sierra Nevada. Emmel, Emmel and Mattoon (1998h) list *elivata* as in California, but nothing was said in that publication about where in California it occurs.

**Records Nevada: Douglas County:** Carson Range, Kingsbury Grade, 2 mi W of Nv 206, 21 May 1984 & 5 May 1987 (GTA). **Nevada: Washoe County:** Hunter Creek and Canyon 25-26 Apr 2010 (Alex Grkovich).

**Distribution: Nevada:** Records are available only for Nevada.

**Flight:** April-May.

### **Coppers, Hairstreaks and Blues. Family Lycaenidae.**

**76. Sierra Nevada American Copper—*Lycaena phlaeas shieldsi*** Kemal & Koçak, 2007.

**Taxonomic notes:** The subspecies name *hypophlaeas* was used for high elevation Sierra Nevada populations until 1998 when John Emmel and Gordon Pratt replaced that name with *alpestris* (that name now known to be preoccupied) because the lectotype of *hypophlaeas* was from “the vicinity of Boston, Massachusetts” and was of the common eastern USA populations. The replacement name *shieldsi* (Centre Entomol. Stud. Ankara. Misc. Pap (135): 7) honors Allen Oakley Shields who did so much in contributing to our knowledge of Sierra Nevada butterflies and especially so with this butterfly that is so very hard to find and collect or photograph on the rocky avalanche slopes well above timberline it inhabits. This subspecies would be a Sierra Nevada endemic, but John Emmel discovered a colony in the White Mountains on similarly difficult terrain. Some suspect these arctic-alpine zone “American Coppers” may be a different species than the eastern populations which are easier to find in totally different habitats in the lowland eastern United States.

**Sierra Nevada Type Locality:** Sierra Nevada Mountains: North slope of Mt. Dana 11,200’-11,800’, Mono County, California.

**Records: California:** Many records were published in Ferris (1974). **Fresno County:** Mono Pass 2 Aug 1961 (RES); Mt. Starr near Mono Pass 12,800' 27 Aug 1969 (RLL); near Baboon Lake 1 Aug 1960 (seen, J. C. Montgomery); ridge S Golden Trout Lake 4 Aug 1960 (J. C. Montgomery); N and S side of peak above Yahoo Lake 3 & 5 Aug 1960 (J. C. Montgomery). **Inyo County:** Mono Pass 2 Aug 1961 (RES); 31 Aug 1965 & 30 Aug 1967 (both PAO). **Madera County:** W slope above Emerald Lake 10,000' 0.25 mi S. Thousand Island Lake 14 Aug 1961 (T. P. Webster). **Mono County:** Mammoth Mountain 27 July 1934 (LACM); above Ellery Lake N side of Dana Plateau 7 Sep 2009; 29 July 2013; 29 July 2014 & 28 July 2018 (KD); slope W of Saddlebag Lake 10,100' 31 Jul 1987 (JGP) & 30 July 2007 (Ricky Patterson); Saddlebag Lake 25 July 1988 (Al & Tom Rubbert); north facing slopes and canyons S of Sonora Pass 10,200'-11,000' 7, 17 & 21 Aug 1971 (JRM); 19 July 1976 (KD); 7 July 1987 (KD) & 12 July 1994 (KD & Kevin Davenport); Virginia Lakes 10,000' 2 July 1994 (JFE); Summit Lake via Virginia Lakes Trail 7 Aug 1996 (Bret Boyd); Lower Twin Lakes east side of Sierra 19 Oct 2016, very LATE (Robert Dowell).

**National Park Records: Yosemite NP: Tuolumne County:** N slope of Mt. Dana above 11,000' 6-7, 9 & 13 Aug 1960; 28 July, 6 & 8 Aug 1966 (all AOS): Bert Lake below Mt. McClure 11,700' 6 Aug 1933 (in LACM, NC); Mt. McClure 12,500' 5 Aug 1933 (LACM, NC) Cathedral Lake 9000-9500' 16 July 1929 (AMNH, NC); Kuna Crest 11,000' 6 Aug 1933 (NC).

**Distribution: California:** Alpine, Fresno, Inyo, Madera, Mono and Tuolumne counties.

**Nevada:** No records in the Sierra Nevada.

**Habitat:** Arctic-Alpine Life Zone, occasionally straying lower into the Hudsonian Zone. This rarely seen species occurs in rocky north facing slopes in areas where the host plant (alpine sorrel, *Oxyria digyna* (Linn.) grows, sometimes in riparian canyons where the host grows.

**Flight:** July to early September.

### **77. Lustrous Copper—*Lycaena cupreus lapidicola* J. Emmel & Pratt, 1998.**

**Taxonomic notes:** The Sierra Nevada populations were called subspecies *cupreus* before J. Emmel & Pratt (1998) recognized the Yosemite populations as different. The name *lapidicola* refers to the wet rocky ground where these butterflies are often found.

**Sierra Nevada Type Locality:** Tioga Pass, Mono County, California.

**Records: California: Amador County:** 4 mi W of Silver Lake near Immigrant Trail to near Carson Spur turnoff 11-15 July 1986 (KD); Salt Springs Rd, Carson Pass area 12 June 2003 (KD). **Calaveras County:** Big Meadows 5 July 1969 (RLL). **Fresno County:** Horsehead Lake 23 Aug 1995 (MW); **Inyo County:** Mono Pass 2 Aug 1961 (RES) & 31 Aug 1965 (PAO); upper Rock Creek Rd at Mosquito Flat 10,000' 25 June 1979 (JGP), 19 July 2019 (PO-EBO); North Lake Camp, SF Bishop Creek 13 July 2009 (KD); fisherman's flat near Table Mountain along SF Bishop Creek 13 July 2014 (KD). **Madera County:** Fresno Dome Trail 19 & 27 June 2014 (KD); in meadow below Big Creek crossing downstream; Fresno Dome Camp 3 July 2008 (KD)

& 15 June 2016 (KD & SR); Big Sandy Camp 16 June 2016 (KD). **Mono County:** Warren Creek (E below Tioga Pass) 9000' 21 June 1986 (KD); Saddlebag Lake 13-14 Aug 1970 (KD) & 10,100' W side Saddlebag Lake 31 July 1987 (JGP); road to Saddlebag Lake along road ravine near Gardisky Trailhead 26-27 June 2012 (KD); North slope Dana Plateau 11,000' 26 July 2016 (KD). **Nevada County:** Castle Peak 9000', 16 Sep 1995 LATE (AMS); Donner Pass 7000' 15 Sep 1995 (AMS); 2 mi E Kingvale 6200' 11 June 1997 (V/L). **Sierra County:** Sierra Valley 5000' 3 June 1993 (AMS). **Tulare County:** Monache Meadows 20 Aug 1917 (JAC); Big Meadow (Kern Plateau) 13 & 25 June 1972 (JB/CS); 23 June 1973 & 16 June 1974 (JB) & 6 June 1986 (KD), this was the southern range limit but is now probably extirpated there; Stony Creek 16 June 2006 (KD);, **Tuolumne County:** Mill Creek (SR 108) 7 & 9 July 1987 and Eagle Meadow Rd near Niagara Creek 7-8 July 2009 (KD). **Nevada: Carson City County:** Kings Canyon 15 May 1986 (GTA). **Douglas County:** Carson Range, Clear Creek Canyon, 4.7 mi W of US 395, 28 May 1980 & 27 May 1984 (both GTA).

**National Park Records: Kings Canyon NP: Fresno County:** Pacific Crest Trail 11,000' 2 July 2012 (EL). **Tulare County:** John Muir Trail 10,800'-11,000' 2 July 2012 (EL). **Sequoia NP: Tulare County:** Mineral King Valley 9 June 1988 & 19 July 1993 (KD); Mineral King at Timber Gap 9000' 22 July 1991 (KD); White Chief Trail 9500' 23 July 1992 (KD); Pacific Crest Trail, Bighorn Plateau & vicinity 30 July 1953 (C.H. Erickson) and 4 July 2012 (EL); Halstead Meadow 3 July 1981 (PN) & 13 June 1990 (KD); Lodgepole 11 June 1990 (KD); Silver City 9 June 1988 (KD); E of Timberline Lake 11,100', 5 July 2012 (EL); Bighorn Plateau 11,400' 4 July 2012 (EL).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Sierra, Tulare, and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Canadian, Hudsonian and Arctic-Alpine Life Zones found in wet rocky areas. Host plants include *Oxyria digyna*, *Rumex paucifolius* and other docks. This spectacularly crimson colored butterfly occurs in wet rocky meadows with water or at *Polygonum* flowers, forest glades, and on the wet rocky trail on the SE side of Saddlebag Lake. I have also found Lustrous Coppers on avalanche slopes flying with the American Copper on the north facing slope of the Dana Plateau and on the south side of Sonora Pass. Fortunately for those looking for butterflies, this species tends to be in much more accessible areas than the Sierra Nevada American Copper.

**Flight:** June to August, sometimes into September in years with delayed snowmelt.

## **78. Tailed Copper—*Lycaena arota* (Boisduval, 1852).**

There are two subspecies that occur in the Sierra Nevada. While this species is widespread in the West, it can be difficult to find on the Sierran west slope and visitors may have difficulty locating this butterfly, so some records are given here.

**Taxonomic notes:** This distinctive species with “tails” has been placed in the genus *Tharsalea* by many authors, used here as a subgenus.



**a. Tailed Copper**—*Lycaena arota* (Boisduval, 1852).

**Sierra Nevada Type Locality:** Highway 70 at Soda Creek, E. Branch of North Fork Feather River Canyon 2500', Plumas County, California.

**Records: California: Inyo County:** SF Bishop Creek 8 Aug 1998 (KD); Whitney Portal 25 Aug 1998 & 9 July 2009 (KD). **Kern County:** Kern Canyon at Democrat Hot Springs 9 June 1971 (KD); Piute Mountains 2-3 mi S of Bodfish 8 to 21 May 1976 & 30 May 2002 (KD); Havilah 11 Sep 1995 (KD); Greenhorn Mountains: S of Tiger Flat 17 June 2001 (KD). **Madera County:** 2 mi S of Oakhurst 22 June 1987 (PAO); Sugar Pine 28 July 1989 and 3 July 1991 (KD).

**Mariposa County:** Fish Camp 28 July 1989 and 4 Aug 1990 (KD); Jerseydale 23 June 1987 (KD). **Mono County:** Subalpine forest W below Saddlebag Lake 13 Aug 1970 & 31 July 2004 (KD). **Nevada County:** Donner Pass 7000' very LATE 18 Oct 1995 (AMS). **Plumas County:** 1 mi. E of Clio, Feather River 3 July 2017 (PAO-EBO). **Tulare County:** S of Limestone Camp 1 July 2013 (KD); W of Sherman Pass at 7800' 3 July 2011 (KD); Stony Creek near Sequoia NP 4 Sep 1991 (KD); N of Kennedy Meadows 9 July 1988 (KD); 5-7 mi. S Kennedy Meadows along Pine Creek and Spring 26 Aug 1983 and 9 Aug 1988 (KD).

**National Park Records: Sequoia NP: Tulare County:** Tokopah Valley 13 Aug 1960 (J. H. Gerdes); Tokopah Falls Trail 8 Aug 1979 (PN); 3 mi W Cabin Cove 5 July 1985 (KD).

**Yosemite NP: Mariposa County:** Yosemite Valley at Museum 8 July 1933 (JSG) and near Ahwahnee Hotel 5 Sep 1974 (RLL).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties.

This subspecies occurs primarily on the western slope of the Sierra Nevada but occurs on the east slope in Inyo and Tulare counties.

**Habitat:** This species occurs in Upper Sonoran, Transition and Canadian Life Zones where the *Ribes* (=Gooseberry) hostplant grows in a wide range of habitats, though colonies tend to be highly localized.

**Flight:** May-early September.

**b. Nevada Tailed Copper**—*Lycaena arota virginiensis* (W. H. Edwards, 1870).

**Taxonomic notes:** Howe (1975) stated this was a lighter subspecies.

**Near Sierra Nevada Type Locality:** Virginia City, Storey County, Nevada.

**Records: California: Mono County:** Lee Vining and Mono Lake Park 4 Aug 1975 (KD); Little Walker River Rd 17 Aug 2000 (KD); very abundant along stream off US 395 at Devils' Gate Pass (=9.1 mi N of Bridgeport) 9 Aug 1998 (KD) & 25 July 2014 (KD); Green Canyon Rd 2-4 mi SW of US 395 and Green Canyon 1 Aug 2004 (KD). **Nevada County:** Washington 2550' 3 June 1992 (AMS). **Nevada: Douglas County:** Carson Valley, Scossa Ranch 2 July 1987 (JD). **Washoe County:** Carson Range, First Creek area 30 July 2003 (GTA).

**Distribution: California:** Alpine, Mono and Nevada counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** This species fairly swarms in many areas of Mono County along US 395, and is quite common near Devil's Gate Pass and on flowers along the Little Walker River Road.

**Flight:** July-September.

**79. Edith's Copper—*Lycaena editha* (Mead, 1878).**

There are two subspecies in the Sierra Nevada, though the status of *pseudonexa* as a subspecies, hybrid or form has proven controversial.

**a. Edith's Copper—*Lycaena editha* (Mead, 1878).**

**Sierra Nevada Type Locality:** The borders of Lake Tahoe near Carnelian Bay, Placer County, California.

**Records: California: Amador County:** 4 mi W of Silver Lake 11 & 15 July 1986 (KD). **El Dorado County:** 2 mi. E of Myers, Hwy 50, 7 July 2019 (PAO-EB)). **Inyo County:** SF of Bishop Creek 8400-8600' 23 June 1986; 8 Aug 1998 and upstream in fishing turnout area near Table Mountain 10 & 13 July 2014 (KD). **Madera County:** Fresno Dome Camp 26 July 1992; 11 July 1999 and 8 July 2008 (KD); Sugar Pine 29 June 2004 (KD). **Mariposa County:** Fish Camp 28 July 1989; 16 June & 4 Aug 1990 (KD); Summerdale Camp near Yosemite NP entrance 29 June 2004 (KD). **Mono County:** Saddlebag Lake 13-14 Aug 1970 (KD); below Ellery Lake Dam 16 Aug 1975 (KD); Lower Rock Creek 24 June 2006 (KD) where *Lycaena xanthoides obsolescens* also can fly on the same days there. **Tulare County:** Big Meadow (Kern Plateau) 25 June 1972 (JB), the historical southern range limit in the Sierra Nevada is Jim Brock's record for Big Meadow on the Kern Plateau at Big Meadow, but that record has not been duplicated since and the habitat there has changed. The actual southern limit now is likely Monache Meadows NE of Big Meadow.

**National Park Records: Sequoia NP: Tulare County:** Mineral King Valley 11 & 24 Aug 1980 (PN); 5 July 1985 & 22 July 1991 (KD); E Timberline Lake 11,100' 5 July 2012 (EL).

**Yosemite NP: Madera County:** Tamarack Flat 4 July 1954 (JWT); Crane Flat 19 July 1957 (JWT). **Madera/Tuolumne Counties:** Trail from Lyell Base Camp to Kuna Crest 7 Aug 1933 (KD). **Tuolumne County:** Gin Flat and Tuolumne Meadows 15 Aug to 3 Sep 1958 (JWT); Dana, W slope 17 Aug 1957 and 29 July 2019 (YBC); Gaylor Lakes Trail 29 July 2019 (YBC).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** This butterfly is found in high Transition, Canadian, Hudsonian and Arctic-Alpine Life Zones in elevated sagebrush and in openings in meadows, along streams and on rocky terrain.

**Flight:** June-early September.

**b. Edith's Copper—*Lycaena editha pseudonexa*** J. Emmel & Pratt, 1998.

**Taxonomic notes:** The status of this species and *pseudonexa* has been in dispute since some have claimed that *editha* is conspecific with *Lycaena xanthoides* and that *pseudonexa* is a hybrid population of the two. Two localities where both species occur but not in numbers are the South Fork of Bishop Creek in Inyo County near Bishop Creek Lodge 8400' and above, and in the lower Rock Creek Gorge in Mono County. Some of those individuals can resemble *pseudonexa*. Hybridization? In the original description, J. F. Emmel & Pratt (1998) shared that there are differences in the larvae between *L. xanthoides* and *L. editha*.

**Type Locality:** California: Shasta County: Railroad Park, Dunsmuir.

**Records: California: Tuolumne County:** 1 mi. E of Mather 24 June to 1 Aug and 4 Sep 1964-66 (AOS); road to Mather, N of SR 120, 27 June 1981 (JGP).

**Habitat:** Mixed coniferous forest. This subspecies is better known from the Mt. Shasta region.

**Flight:** Mid- June to Late July.

**80. Great Copper—*Lycaena xanthoides*** (Boisduval, 1852).

There are two subspecies that occur in the Sierra Nevada. Some have proposed the idea that this butterfly is conspecific with Edith's Copper, but that view has been widely rejected, though the subspecies *pseudonexa* may have originated by interbreeding between the two species. The two species are rare but sympatric along the South Fork of Bishop Creek in Inyo County and in the Lower Rock Creek Gorge in Mono County, the two localities are about 15 air miles apart.

**a. Great Copper—*Lycaena xanthoides xanthoides*** (Boisduval, 1852).

**Taxonomic notes:** See the note above under *pseudonexa*. My extensive collecting in much of California shows extensive variation in this species with regard to the lightness or boldness of the black spotting below. In the southern Sierra from the east slope of the Sierra from at least the Owens Valley and Whitney Portal south to the Kern River Valley at Lake Isabella, some populations tend to look like nominate *xanthoides*, others consistently represent the small spotted *obsolescens* described from Hunter Mountain in Death Valley that has a larger distribution than was known in 1998, extending even into the Sierra Nevada as far north as Lower Rock Creek Gorge in Mono County.

**Type Locality:** Sacramento, Sacramento County, California.

**Records: California: Inyo County:** Nine Mile Canyon 6 July 1983 (KD); Olancho 2 July 1983 (JGP); Olancho Pass Trail above Sage Flat, E side of Sierra 21 May 2003 (JFE); upgrade to Whitney Portal 5 July 2004; 18 June 2006 & 9 July 2009, individuals at this locality can resemble nominotypical *xanthoides* or *obsolescens*; SF of Bishop Creek 8400' near Bishop

Creek Lodge 28 June 1986 (KD). **Kern County:** Piute Mountains: 2-3 mi S of Bodfish 14-21 May 1976 (KD); Erskine Creek Canyon E of Lake Isabella (town) 17 June 2001 & 5 June 2005 (KD). **Madera County:** Tributary to Woods Creek, Lake Lorraine 22 Aug 1932 (NC). **Nevada County:** Washington 16 June 1991 (AMS); Dog Bar Rd S of Grass Valley 15 July 1990 (C. Hageman). **Placer County:** Alta 2800', 22 July 1991 (AMS). **Tulare County:** Sherman Pass Rd, Dry Creek Canyon 18 June 1983 (KD) and at Alder Creek 6800' 22 July 2006 & 24 July 2011 (KD); Chimney Peak Rd, Lamont Peak area 4 & 6 July 1983 & 14 June 1986 (KD); Spring (Pine Creek) 5-7 mi S of Kennedy Meadows 10 July 1982 & 30 June 1988 (KD); meadow with *Juniperus occidentalis* 2-3 mi N of Chimney Peak Ranger Station 22 July & 5 Aug 2008 (KD).

**National Park Records: Yosemite NP: Tuolumne County:** Hetch-Hetchy 13 July 1956 (JSG); Aspen Valley 14 July 1956 (JSG). These individuals need to be checked to see if they are actually *Lycaena editha pseudonexa*.

**Distribution: California:** Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Tulare, Tuolumne and Yuba counties.

**Habitat:** Upper Sonoran, Transition, (Canadian, as a stray) Life Zones. This subspecies tends to occur on the west slope of the Sierra Nevada, but in Kern, Tulare and Inyo Counties this subspecies can also occur on the eastern and southern slopes of the Sierra Nevada and in the Owens Valley. However, colonies of the *obsolescens* phenotype and subspecies can occur within the range of nominotypical *xanthoides* for reasons not understood. This butterfly favors wet pastures, fields, meadows or drainages where the *Rumex* hostplants grow.

**Flight:** Late May-August.

**b. Obsolescent Great Copper—*Lycaena xanthoides obsolescens*** J. Emmel & Pratt, 1998.

**Taxonomic notes:** As mentioned under the nominotypical *xanthoides*, this subspecies described from Death Valley National Park is characterized by a reduction of the black spotting ventrally, often tending to obsolescence. One problem I have noted with this species is that populations of what are considered subspecies *xanthoides* in the Tehachapi Mountains of Kern County or in the Coast Ranges in Santa Barbara, San Luis Obispo and Monterey Counties also tend towards obsolescence.

**Type Locality:** California: Inyo County; Hunter Mountain east of Nelson Range, small stream and meadow, 0.4 air miles southeast of peak 7107, Death Valley National Monument (now Park).

**Records: California: Inyo County:** Whitney Portal 18 June 2006 (KD). **Kern County:** Below Lake Isabella Auxiliary Dam 2 & 7 June 2003 and 10 June 2004 (KD); Lake Isabella (town) in wet meadow E SR 178 and S SR 155 at Lake Isabella, 4 June 2016 (KD); Kernville 14 & 21 June 1998; Isabella Highlands up Sawmill Rd in Greenhorn Mountains 27 June 2015 (KD). **Tulare County:** Freeman Creek Grove 25 July 1980; 16 & 29 July 1983; 28 July & 15 Aug 2016 (KD). **Mono County:** Swall Meadow 27 June 1999 (KD); Lower Rock Creek 27 June

1999 (JGP/KD) common 24 June & 6 July 2006 (KD); sometimes flying with *L. editha*; Lower Glass Creek Meadow S June Mountain 8600' 17 June 2016 (KN), north for the Sierra Nevada.

**Distribution: California.** This butterfly is known in Inyo, Kern, Mono and Tulare counties.

**Habitat:** Upper Sonoran and Transition Life Zones. riparian canyons, meadows, pastures and in otherwise dry areas bordering a Giant Sequoia Grove at Freeman Creek near the upper Kern River Canyon 20 air miles north of Johnsondale.

**Flight:** June to August.

### **81. Gorgon Copper—*Lycaena gorgon* (Boisduval, 1852).**

There are three subspecies in the Sierra Nevada: *Lycaena gorgon* is a near California endemic, barely entering Nevada. Populations in the Kern River Valley show intergradation between nominotypical *gorgon* and *micropunctata*.

#### **a. Gorgon Copper—*Lycaena gorgon* (Boisduval).**

**Near Sierra Nevada Type Locality:** Hwy. 70 at Bear Ranch Creek, vicinity of Cresta, North Fork Feather River Canyon, 1500', Butte County, California.

**Records: California: Kern County:** Greenhorn Mountains: Kern Canyon, Democrat Hot Springs 9 June 1971 and Lucas Creek 1 June 1993 (KD); Old State Rd 4-5 mi W of Wofford Heights Jct with SR 155, 20 June 2002 & 2 July 2005 (KD); Piute Mountains, 2-4 mi S of Bodfish 14 to 21 May 1976 & 30 May 1979 (KD). Populations on the west slope of the Piutes, Greenhorns and the upper Kern River and most of the southern Sierra Nevada tend towards the nominate subspecies. **Mariposa County:** Darrah 29 May 1959 (JWT); Indian Flat 30 May 1959 & 13 May to 10 June 1961 (JWT); Merced River at Briceburg 24 Apr 1966 (RES, JL & Henry Holmes). **Placer County:** American River near Auburn 14 June 2003 (KD). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20 June 2005, 19 June 2006 (SFSU-BSNC); **Tulare County:** 2-4 mi S of Johnsondale 20 June 1980 and 18 June 1983 (KD); Sherman Pass Rd near Brush Creek 18 June 1983 and 17 May 1984 (KD); E of Ant Canyon and Kern River 9 & 15 May 2007 and 22 May 2012 (KD). Most populations seem to be nearest nominotypical *gorgon*. **Nevada: Washoe County:** Carson Range, above Incline Village, First Creek area 10 & 30 July 2003 (GTA).

**Distribution: California:** El Dorado, Fresno, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Washoe County.

**Habitat:** Upper Sonoran, Transition Life Zones on steep drier sandy slopes where the *Eriogonum nudum* larval host grows. This butterfly occurs in foothill woodland and mixed coniferous Forest. Adults patrol overgrown dirt roads, flats, ravines and canyons and sandy bottoms near the *Eriogonum nudum* hostplant.

**Flight:** May-July.

**b. Small-spotted Gorgon Copper**—*Lycaena gorgon micropunctata* J. Emmel & Pratt, 1998.

**Taxonomic notes:** This subspecies differs from nominotypical *gorgon* by having very small spots on the ventral side, hence the name *micropunctata* which refers to its very small spots.

**Sierra Nevada Type Locality:** Lower Rock Creek 6200', 2.8 road miles SE of Highway 395, Mono County, California.

**Records: California: Inyo County:** Upper Nine Mile Canyon 25 May & 8 June 1985 (KD & RPM); Pine Creek Canyon NW of Rovana in steep canyon with yellow flowered *Eriogonum nudum* 31 May 1999 & 26 May 2009 (KD). **Kern County:** Chimney Peak Rd upgrade to road summit W of Lamont Peak on yellow flowered *Eriogonum nudum* 4, 6 & 13 June 1983 (KD); canyon S of Butterbrecht Peak 9 May 1986 (KD, (southernmost locality in the Sierra Nevada for this species) and ravine 0.7 mi SW of Sageland N of Kelso Valley 27 May 1993 (KD); E slope of Piute Mountains 24 May 2005 (KD). **Mono County:** Lower Rock Creek Gorge 27 June 1999; 24 June & 6 July 2006 (KD). **Tulare County:** North of Lamont Peak near Lamont Meadows on Chimney Peak Rd 4 & 6 July 1983 and 14 June 1986 (KD).

**Distribution: California:** Inyo, eastern Kern, southern Mono and extreme southern Tulare counties. This subspecies range is centered on the east slope of the Sierra Nevada and drier areas with sandy soils (Upper Sonoran Life Zone) in the southern Sierra Nevada where Mojave Desert plant communities predominate or else very dry Great Basin woodland exists.

**Habitat:** This subspecies occurs on very steep sandy canyon walls and road cuts where *Eriogonum nudum* grows. The northern range limits seem to be the Lower Rock Creek Gorge in Mono County with the southernmost locality in a canyon 1.5 mi SW of Butterbrecht Peak. Few colonies are known and Lower Rock Creek is a classic locality for it. The Chimney Peak Road colony area can be a good place to see this butterfly if winter and spring rains were good.

**Flight:** Mid-May to mid-July.

**c. Jackie's Gorgon Copper** – *Lycaena gorgon jacquelinae* J. Emmel & G. Pratt, 1998

**Taxonomic notes:** Described by John F. Emmel and Gordon F. Pratt (1998). Previously, this subspecies had not been reported from the Sierra Nevada. This subspecies is characterized by having marked enlargement of the black spotting ventrally.

**Type locality:** Pine Creek Canyon, Warner Mountains, Modoc County, California.

**Records: California: Nevada County:** Brockway Summit, Tahoe National Forest 29 June 2018 (PAO-EBO). **Sierra County:** Smithneck Road, SE Loyalton, Plumas National Forest 27 June 2017 (SFSU – BSNC).

**Distribution:** The butterfly ranges from Lake County, Oregon in the Warner Mountains and east to Goosenest in Siskiyou County (Emmel and Pratt, 1998). In California, Modoc, Nevada, and Sierra counties. Also, presumably Plumas and Lassen counties. Not known from Nevada.

**Habitat:** Stands of *Eriogonum nudum* in highway edges or road cuts in Ponderosa Pine Forest or successional brushland.

**Flight:** mid-June – mid-July.

**82. Ruddy Copper—*Lycaena rubidus monachensis*** K. Johnson & Balogh, 1977.

**Taxonomic notes:** George T. Austin (1998c) stated: “Johnson and Balogh indicated that lowland populations of this species in western Nevada and eastern California were non-melanic *Lycaena rubida sirius* (W. H. Edwards). Material I have seen from this area agrees with this.” If so, populations at Mono Lake and along the eastern base of the Sierra Nevada would be *sirius*, a belief not shared by John F. Emmel (pers. comm. and in the Emmel, Emmel & Mattoon (1998g) California state checklist). I’ll leave this issue for others to resolve.

**Sierra Nevada Type Locality:** Monache Meadows, Tulare County, California.

**Records:** **California:** **Amador County:** Silver Lake and vicinity, common 11-15 July 1986 (KD). **El Dorado County:** 1 mi N of Showers Lake (N of Carson Pass) 5 Sep 1993 (W. D. Patterson). **Inyo County:** Coyote Creek 10,000’ W of Bishop, 20 July 1984 (E/P). **Madera County:** Agnew Pass 5 Aug 1959 (AOS). **Mono County:** Little Walker River Rd near Jct with US 395, 17 Aug 2000 & 28 July 2019 (KD); below Ellery Lake Dam 16 Aug 1975 & 7 Sep 2009 (KD); trail SE side of Saddlebag Lake 31 July 2004 & 12 Aug 2006 (KD); N slope of Dana Plateau at about 11,000’ above timberline 27 July 2015 (KD). **Nevada County:** Castle Peak N of Donner Pass 28 July 1976 (AMS). **Sierra County:** Henness Pass Rd, W Nevada state line 17 June 2016 (JD). **Tulare County:** Monache Meadows 2 July to 17 Aug 1917 (JAC), likely the southern range limit in the Sierra Nevada. **Tuolumne County:** Eagle Meadow Rd on lava sloped hill 1 mi S SR 108, 8 July 1987 (KD); Eagle Creek 6 mi S SR 108, 24 July 1999 (V/L). **Nevada:** **Washoe County:** Mt. Rose Trail, Carson Range 9000’ 7 Aug 1990 (JD); Tahoe Meadows, Mt. Rose Hwy 24 July 1987 (JD).

**National Park Records:** **Sequoia NP:** **Tulare County:** W side of the Sierran Crest Mineral King Valley 24 Aug 1980 & 18 July 1981 (both PN); 5 July 1985 & 19 July 1993 (KD); White Chief Trail 9000’ 15 Aug 1979 (Wayne Dawes) and same trail at 9500’, 23 July 1992 (KD); south end of Mineral King Valley, Farewell Gap Trail at 8500’ 19 July 1993 (KD). **Yosemite NP:** **Tuolumne County:** Gaylor Lakes Trail 16 Aug 1952 (JWT).

**Distribution:** **California:** Alpine, Amador, El Dorado, Fresno, Inyo, Madera, Mono, Nevada, Placer, Plumas, Tulare and Tuolumne counties. **Nevada:** All counties but which subspecies in the adjacent Great Basin may be contentious.

**Habitat:** Upper Sonoran, Transition, Canadian, Hudsonian, (Arctic-Alpine) Life Zones. In the southern Sierra Nevada this species only occurs at very high elevations but as one goes north this butterfly can be found at the eastern base of the Sierra Nevada and the west shore of Mono Lake. This species occurs mostly along the east slope of the Sierra Nevada in sagebrush scrub, elevated brushy meadows, east side of Saddlebag Lake and even above timberline in the Tioga Pass area. West slope localities include a seemingly bare hill off the Eagle Meadow Rd about a half mile south of the Sonora Pass Rd and several places in Mineral King Valley in what is now Sequoia

National Park, older records were collected before Mineral King became part of the Park, the author's specimens were taken under NPS permit and are now in the Ash Mountain NPS collection or at the LACM.

**Flight:** Mid-June to mid-September with the main flight in July and August.

**83. Blue Copper—*Lycaena heteronea*** Boisduval, 1852.

**Taxonomic notes:** This butterfly has also been given the common name, the “Varied Blue”, a result of past confusion of this species with blues. The venation of the wings clearly shows this species is a Copper even if the wings lack scaling. This species has gone through a number of revisions and name changes of subspecies. There are at least 3 subspecies in the Sierra Nevada.

**Records:** **California:** not assigned to subspecies: **Fresno County:** Duck Lake, 6 mi SE of Crystal Crag 3 Aug 1961 (RES). **Nevada County:** Castle Peak N of Donner Pass 28 July 1976 (AMS). **Sierra County:** Forest road 52, S of Bassetts [assoc. *Eriogonum nudum*], Tahoe National Forest, 5 July 2007 (SEABA-C); Packsaddle Campground, near Packer Lake [assoc. *Eriogonum nudum*], Tahoe National Forest, 6 July 2007 (SEABA-C); **Tulare County:** 13 mi S of Johnsondale 12 July 2007 (Steve Spomer).

**Distribution:** **California:** Because identification to subspecies can be difficult, all Sierra Nevada Counties are given here: Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tuolumne and Yuba counties. Many east slope counties will have subspecies *austin* while most west slope subspecies will be *submaculata*. Ranges for subspecies still need to be worked out in this species. **Nevada:** All counties.

**a. Blue Copper--*Lycaena heteronea austin*** Kemal & Koçak, 2007.

**Taxonomic notes:** The Sierra Nevada populations (called *klotsi* in Emmel & Pratt, 1998) are very pale violet blue dorsally in males, and females are dull grayish tan dorsally, with reduction to absence of the spotting pattern on the ventral hindwing of both hindwings. This Sierra Nevada east slope populations associated with yellow flowered *Eriogonum umbellatum* have been called both nominotypical *heteronea* and *klotsi* in past publications. The subspecies named *rutila* Austin, 1998 is a synonym of *austin* (Pelham, 2019)

**Type Locality:** Nevada: Lincoln County: Wilson Creek Range, Wilson Peak Rd. 2470 m, Trail Canyon.

**Records:** **California:** **El Dorado County:** Carson Pass 8700'-9200' 13 July 1986 (KD). **Inyo County:** SF of Bishop Creek in sagebrush hills 8200'-9200' 10 July 1994 (KD); 8 Aug 1998 & 27 July 2019 (KD). **Mono County:** Big Meadow Campground, Rock Creek Road, Inyo National Forest 19 July 2019 (PO-EBO); N above Tioga Pass 16 Aug 1975 (KD); Warren Creek 9000' off Tioga Pass Rd 6 Aug 1978 and 24 July 1993 (KD); Lee Vining 21 July 1986 (Norbert Kondla); dry slopes NE of Sonora Pass 9 Aug 1998 (KD); Virginia Canyon 7 Aug 1996 (BRB); Wolf



Canyon 11 Aug 1996 (BRB). **Nevada: Washoe County:** Carson Range, Tahoe Rim Trail 28 Aug 2006 (JD).

**Distribution: California:** Alpine, El Dorado, Inyo and Mono counties. This subspecies is also likely to occur in Amador, Nevada, Placer, Plumas and Sierra counties. There are problems in separating Sierra Nevada east slope subspecies *austin* from west slope subspecies *submaculata* and the two sometimes overlap! **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** East slope of the Sierra Nevada in sagebrush scrub with the buckwheat host.

**Flight:** July-August.

**b. Blue Copper—*Lycaena heteronea submaculata*** J. Emmel & Pratt, 1998.

**Taxonomic notes:** This subspecies is distinguished (Emmel & Pratt, 1998) from nominotypical *heteronea* by its smaller size, bluer (less violet) ground color dorsally in the males, greater development of light tannish orange ground color in the dorsum of females, and the small prominent but small black spots on the ventral hindwing.

This subspecies uses white flowered *Eriogonum nudum* as a larval host. An interesting situation exists at Warren Creek at 9000' off the Tioga Pass Rd below Ellery Lake. Both this subspecies and subspecies *austin* occur together at the same times on their respective host plants.

**Type Locality:** California: Plumas County: Warner Valley, at south boundary of Lassen National Park.

**Records: California: Amador County:** Silver Lake area 11-15 July 1986 (KD). **Madera County:** Fresno Dome Camp 1-2 July 1996 (KD). **Mariposa County:** Merced Lake Trail 4 Aug 1958 (AOS). **Mono County:** Warren Creek crossing N Tioga Rd. 6 Aug 1978 & 29 July 2019 (KD); trail NE side of Saddlebag Lake 31 July 2004 & 12 Aug 2006 (KD). **Tulare County:** Hillside above confluence of Stony & Woodward Creeks 29 June 1987 & 2 Aug 1993 (KD); trail to Slide 29 June 1987 (KD). **Tuolumne County:** Near Niagara Creek on dry slopes off Eagle Meadow Rd 12 July 1994 (KD).

**National Park Records: Sequoia NP: Tulare County:** Silver City and 2 mi W of Cabin Cove 5 July 1985 (KD); Lodgepole and Tokopah Falls Trail 16 Aug 1957 (PAO); 8 Aug 1975; 3 July & 1 Aug 1981 (PN) and 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** Merced Lake Trail 4 Aug 1958 (AOS). **Tuolumne County:** Gaylor Lakes Trail 3 Sep 1958 (JWT); Lyell Base Camp 26 July 1957 (AOS).

**Distribution: California:** Confirmed in Calaveras, El Dorado, Fresno, Madera, Mariposa, Mono, Plumas, Tulare, Tuolumne and Yuba counties.

**Habitat:** Transition, Canadian and Hudsonian Life Zones in mixed coniferous forest, coniferous forest, riparian canyons, bases of steep slopes and sagebrush scrub with *Eriogonum nudum*.

**Flight:** July-early September.

**c. Bright Blue Copper**—*Lycaena heteronea clara* Hy. Edwards, 1877.

**Taxonomic notes:** These populations tend to have very bluish females.

**Type Locality:** Tehachapi Pass, Southern Pacific Railroad, Kern County, California.

**Records: California: Kern County:** Piute Mountains: Piute Mountain Vista 11 July 1976 (JB); 4 July 2000 (KD) and Piute Mountain Rd MP 5-7 from Bodfish-Havilah Rd summit 4 & 17 July 2000 and 5 July 2002 (KD). **Tulare County:** Ridge in Pine Flat area south end of Kern Plateau near Kern County line 5 July 2003, 15 July 2006 & 12 July 2017 (KD).

**Distribution: California:** Kern and Tulare counties.

**Habitat:** High elevation slopes in sagebrush with *Eriogonum umbellatum* in the Piute Mountains on Piute Mountain Vista, Piute Mountain Rd from Bodfish/Havilah summit milepost 5-7 and on a ridge at Pine Flat on the Kern/Tulare County line. This butterfly is synchronic and sympatric with *Icaricia chlorina* and *Euphilotes glaucon comstocki* at all of those locations.

**Flight:** July-early August.

**84. Purplish Copper**—*Lycaena helloides* (Boisduval, 1852).

This is normally a lowland species that can be very abundant, especially in the fall in the eastern Kern River Valley at Weldon and Onyx in Kern County. Late season flying females can have a much brighter orange-red ground color than those that fly earlier in the year. This species is normally scarce outside valleys and ranchlands in the Sierra Nevada, but does occur in the “High Sierra”, even in the Hudsonian Life Zone.

**Type Locality:** San Francisco, San Francisco County, California.

**Records: California. Inyo County:** Owens River E of Bishop 7 Aug 1978 (KD). **Kern County:** Kern River Valley: Weldon, Onyx & Canebrake very abundant 13-19 Nov 2005 and most years in October and early November (KD). **Madera County:** Thousand Island Lake 9850' 30 July 1953 (C.H. Erickson); **Mono County:** Mill Creek Canyon, 16-July 2019 (PAO-EBO). Shadow Creek 12 July 1955 (C.H. Erickson) in Hudsonian Life Zone. Saddlebag Lake Rd. ¼ mi. NW near the creek 28 Aug 2011 (RPM). **Nevada County:** Donner Pass 7000' very LATE for high elevation 20 Nov 1995 (AMS). **Placer County:** Emigrant Gap off I-80, 15-June 1987 (RPM) and 19 June 1993 (RPM). **Sierra County:** Jones Valley, Babbitt Peak Road, Tahoe National Forest, 4 July 2007 (SEABA-C). **Nevada: Douglas County:** Clear Creek Canyon 18 May 1986 (JD). **Washoe County:** Washoe Lake State Park 21 Sep 1985 (JD).

**National Park Records: Sequoia NP: Tulare County:** Halstead Meadow 15 Sep 1987 (KD); Crystal Cave “July 1943” (Tom & H. Blevins).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare (scarce), Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Edges of pastures, abandoned fields and weedy areas in wet watered drainages. Adults can be very abundant on blooming rabbitbrush and other yellow composites in late September to early November in the Kern River Valley.

**Flight:** April to November, most common in the fall months.

**85. Lilac-bordered or Nivalis Copper—*Lycaena nivalis nivalis* (Boisduval, 1869).**

**Sierra Nevada Type Locality:** Gold Lake, Sierra County, California.

**Records: California: El Dorado County:** 2 to 4 mi E of Silver Lake area 11-15 June 1986 (KD). **Fresno County:** Upper Little Line Creek 29 June to 21 July 1930 (LMI); Fall Creek 24 Aug 1995 (MW). **Madera County:** Ethelfreda Creek, 28 mi E Bass Lake 22 June 1987 (PAO); Fresno Dome area (Starr Lake turnoff FS 10), 5 & 11 July 1999 (KD); Big Sandy Camp 1 July 2004 (KD). **Mono County:** Hudsonian Zone Forest west below Saddlebag Lake 13 Aug 1970 (KD); trail SE side Saddlebag Lake 18 Aug 2011 (KD); road to Saddlebag Lake near Gardisky Trailhead, common 26-27 June 2012 (KD). **Nevada County:** Donner Pass 7000' 18 Oct 1995 (AMS); Castle Peak 9000' 2 Oct 1995 (AMS). **Plumas County:** Round Lake loop, Plumas National Forest 10 July 2012 (SFSU - BSNC). **Sierra County:** Forest road 54, S of Bassetts, Tahoe National Forest 9 July 2012 (SFSU - BSNC); Howard Creek Road, Tahoe National Forest 30 June 2018 (PAO). **Tulare County:** Hillside above Stony & Woodward Creeks 29 June 1987; 13 June 1990 and 2 Aug 1993 (all KD); Big Meadow (near Kings Canyon NP, 23 June 1997 (KD); Boulder Creek E of Big Meadow 28 June 2003 (KD) & 30 June 2017 (KD/SR). Quaking Aspen 7000' 10 Aug 2002 & 2 June 2013 (KD); near Needle Point SE of Ponderosa in meadow 3 & 5 July 2009 (Kim Kuska & Paul Levine), southern range extension for the Sierra Nevada. **Tuolumne County:** Niagara Creek Camp 7-8 July 1987 & 12 July 1994 (KD); Eagle Meadow Rd on lava ridge S of SR 108, 13 July 1994 and 7-8 July 2009 (KD). **Nevada: Washoe County:** Carson Range, Tahoe Rim Trail 13 Sep 2006 (JD).

**National Park Records: Sequoia NP: Tulare County:** Mineral King: Mineral King Valley 5 July 1985 & 19 July 1993 (KD); Farewell Gap Trail 28 Aug 1983 (PN); Timber Gap Trail 11 Sep 1983 (PN); Monarch Lakes Trail 26 July 1985 (KD); Two mi E of Lodgepole 16 Aug 1957 (PAO); Alta Meadow 18 July 1960 (J. H. Gerdes); Tokopah Falls Trail 8 Aug 1975 & 19 July 1980 (PN) and Wolverton 24 July 1987 (KD). **Yosemite NP: Madera County:** Yosemite Creek Trail 9 July 1956 (JSG); Tenaya Canyon 11 July 1958 (AOS). **Tuolumne County:** Gaylor Lakes Trail 19 July to 3 Sep 1958 (JWT) and 30 July 2018 (YBC); Kuna, trail from Lyell Base Camp to Kuna Crest 7 Aug 1933 (JSG); Crest W of Tioga Pass 20 to 23 July 1960 (AOS); Dog Lake Trail to Tuolumne Meadows 19 July 1956 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Canadian, Hudsonian and lower Arctic-Alpine Life Zones. This species occurs in a wide variety of habitats: meadow edges where the larval host (knotweed, *Polygonum douglasii*) occurs on sandy soils, ravines along roads and elsewhere and rocky slopes, even above timberline. Mineral King Valley and the surrounding slopes inside Sequoia National Park and the Tioga Pass area of Yosemite National Park are classic localities for this butterfly.

**Flight:** Mid-June through September.

**86. Mariposa Copper—*Lycaena mariposa mariposa*** (Reakirt, 1866).

**Taxonomic notes:** A review of this species with many new subspecies was recently published (Pyle & Hammond, 2018) that covers nine new subspecies. The Sierra Nevada populations are the nominotypical subspecies.

**Sierra Nevada Type Locality:** Gold Lake, Sierra County, California.

**Records: California: Alpine County:** Large colony, Stanislaus Meadow, July-August (JRM). **Madera County:** Agnew Meadow 13 Aug 1957 (AOS). **Mono County:** N slope of Mt. Dana 20 Aug 1965 (KCH & Jan Hughes); subalpine forest west below Saddlebag Lake 13 Aug 1970; 11 Aug 1991; 16 Aug 2000; 28 July 2002 & 31 July 2004 (all KD): Tioga Lake and Pass 3 Aug 2000 (BG); lower slopes of ridge SE of Mt. Conness, 31 July 2004 (KD). **Nevada County:** Donner Pass 12-23 Sep 1978 (AMS); NW Grouse Ridge Camp 6900' 4 Sep 1983 (A. Ludtke). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 29 June 2017 (SFSU – BSNC). **Tuolumne County:** Jack Main Canyon mid-Aug 1954 (PAO). **National Park Records: Sequoia NP:** Mineral King, no specifics (JHM). **Yosemite NP: Madera County:** Mt. Lyell Base Camp 26 July 1957 and 10 Aug 1958 (AOS); **Mariposa County:** Merced Lake Trail 4 Aug 1958 (AOS). **Tuolumne County:** N slope of Mt. Dana SW of Tioga Pass 20 Aug 1965 (KCH & Jan Hughes); Gaylor Lakes Trail 31 July 1987 (seen, JGP); Dana Meadows 17 Aug 1980 (seen, JGP); Mt. Gibbs 10 Aug 2003 (Adam Winer); .Kuna, trail from Lyell Base Camp to summit of Kuna Crest 7 Aug 1933 (JSG); Elizabeth Lake 27 July to 22 Aug 1958 (AOS).

**Distribution: California:** Alpine, El Dorado, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. This subspecies is endemic to the higher elevations in the Sierra Nevada extending from Tulare County in the Mineral King area (per John H. Masters, unpublished paper on Mineral King butterflies but no specific locality or dates provided) of Sequoia National Park north to the Mt. Lassen area north of the Sierra Nevada.

**Habitat:** This butterfly appears to be rather rare (but well reported in Yosemite National Park) and sporadic in occurrence and occupies wet habitats and forest glades around subalpine lakes, seepage bogs and more extensive *Darlingtonia* bogs.” My experience with this butterfly is that it

inhabits moist Hudsonian Zone subalpine forests in small forest openings near small streams. The host plant is reported to be *Vaccinium caespitosum*.

**Flight:** Late June to mid-September.

**87. Golden Hairstreak—*Habrodais grunus grunus*** (Boisduval, 1852).

This is a highly sought hairstreak that is often highly localized and little seen since adults are usually flying in wild erratic fashion high up in the trees, perching out of range from nets or cameras.

**Sierra Nevada Type Locality:** Highway 70 at Chambers Creek, North Fork Feather River Canyon, Plumas County, California.

**Records: California: Alpine County:** Clark Fork Rd NE SR 108, 5 July 1997 (MS). **Fresno County:** Kaiser Creek 7400' 12 June to 1 July 1930 (LMI); SR 168, 14 mi NW of Shaver Lake near Auberry 12 Sep 2003 & 11 June 2004 (KD). **Inyo County:** Upper Nine Mile Canyon 26 Aug 1983; 16 Aug 1985 & 22 Sep 1997 (KD, this population is very pallid); Sage Flat Rd 10 May 2000 (E/P); E of Whitney Portal 7 July 2006 (JGP). **Kern County:** S end of Kern Plateau at Pine Flat 5 July 2003 & 15 July 2006 (KD). **Mariposa County:** Jerseydale 23 June 1987 (KD). **Nevada County:** Donner Pass 7200', rare at this locality 21 July 1989 (AMS); Castle Peak Trail 7500'-9000' 15 July 1999 (V/L). **Plumas County:** Butterfly Valley Road above Twain, Plumas National Forest 4 July 2017 (SFSU-BSNC). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20 June 2005, 19 June 2006 (SFSU-BSNC); Wild Plum Road, Sierra City 3 July 2007 (SEABA-C). **Tulare County:** Canyon just W of Lamont Meadows off Chimney Peak Rd 4 & 6 July 1983 (KD); summit of Nine Mile Canyon 17 July 2001 (JB, this population is very pallid); Greenhorn Mountains: Baker Ridge on small oaks below trail 24 July 1995 & 25 June 1997 (KD). **Nevada: Carson City County:** Carson Range, Hwy 28, 2 mi S Washoe County line, 19 July 1985; Kings Canyon-Spooner Summit Rd 4 Aug 2002 (GTA). **Washoe County:** Kennedy Point, Lake Tahoe 10 Sep 1984 & 17 July 2000 (GTA).

**National Park Records: Yosemite NP: Mariposa County:** Oaks below Vernal Falls 3 Aug 1963 (KD).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran and Transition Life Zones. Adults tend to stay high up in the oak hosts, occasionally coming down lower to perch on the lower branches. Adults do sometimes go to mud or alight on favored plants along streams or seeps.

**Flight:** Mid-May to early October.

**88. Great Purple Hairstreak--*Atlides halesus corcorani*** (Cramer, 1777).

Also known as the Great Blue Hairstreak.

This beautiful purple or bluish hairstreak is a favorite of collectors, watchers and photographers. Like other species (*Callophrys spinetorum* and *C. johnsoni*) that feed on mistletoes as hostplants, adults are usually not reliably found unless favored flowers occur near mistletoe-infested trees. The best times to find this butterfly seems to be in early spring and in the fall months.

**Type Locality:** Riverside, Riverside County, California.

**Records:** **California:** **Calaveras County:** Big Trees State Park 9 Aug 2002 (JRM). **Kern County:** Greenhorn Mountains near Tiger Flat Camp 28 June 2014 (KD); Weldon 20 June 1985 (KD) near jct SR 178 & Kelso Valley Rd 6 Nov 2012 (KD). **Madera County:** Sugar Pine, Lewis Creek 5 Sep 1995 (KD) & 24 June 2005 (WB). **Mariposa County:** Merced River near Briceburg 24 Apr 1966 (JL/RES); El Portal along Merced River 4 May 1968 (KCH, Jan Hughes, JL). **Nevada County:** Donner Pass 7000' 25 Sep 1985 (AMS). **Sierra County:** Sierra Nevada Field Campus, 3 July 2007 (SEABA-C); Sierra Valley 5 Oct 1985 (AMS). **Tulare County:** Upper Kern River S of Corral Creek 5 & 23 Oct 2002 (KD); Fairview along Kern River 23 Oct 2002 (KD). **Tuolumne County:** 1 mi E of Mather, no date (AOS).

**National Park Records:** **Sequoia NP:** **Tulare County:** Ash Mountain 17 Apr 1959 & 24 May 1962 (R. C. Burns); Potwisha 24 Sep 1977 (PN); Mineral King Rd, no date (JHM). **Yosemite NP:** **Mariposa County:** Yosemite Valley at Museum 5 Aug 1934 (NC); Yosemite Creek Trail 9 July 1956 (JSG).

**Distribution:** **California:** Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Sierra, Tulare, Tuolumne and Yuba counties.

**Nevada:** Douglas County.

**Habitat:** Lower and Upper Sonoran, Transition Life Zones. This species occurs in foothill woodland, Juniper woodland, Mojave Desert plant communities where mistletoe (the larval host) grows and in mixed coniferous forests. Adults tend to stay high in the trees near where the mistletoe grows, occasionally leaving trees to seek nectar from various flowers, including blooming rabbitbrush in the fall.

**Flight:** March to early November.

**The Sooty Hairstreak Complex. *Satyrium fuliginosa* complex.**

This was one of the most difficult groups for the author to assess from the literature. Which species (*fuliginosa* or *semiluna*?) is at the Norden, El Dorado County, California type locality for *Satyrium fuliginosa*? Emmel, Emmel & Mattoon (1998a) proposed changing the type locality to Gold Lake, Sierra County, California who stated: "The selection of a neotype from

Norden near Donner Pass by Opler (in Brown, 1970) is invalid because the phenotype of specimens from this locality does not match Edward's description."

However, I contacted Arthur Shapiro (Who works for UC Davis that has an extensive collection from Donner Pass) who has collected Donner Pass heavily and it is unquestionably *fuliginosa* that lacks the stigmata on the forewings. See comments by Andrew D. Warren, 2005 under this species complex in Oregon. Paul Opler who worked on the research done on these two species agreed with that assessment. So, the type locality stays at Norden near Donner Pass but the Gold Lake record is given below.

**89. Sooty Hairstreak--*Satyrrium fuliginosa* (W. H. Edwards, 1861).**

**Taxonomic notes:** Recent studies (Warren, 2005) indicate that this hairstreak, formerly considered a single species, is actually is two species. *Satyrrium fuliginosa* lacks any trace of forewing stigmata and there are other subtle, but consistent differences in structure and wing shape between this species and *Satyrrium semiluna*.

**Sierra Nevada Type Locality:** Norden, El Dorado County, California.

**Records: California: Sierra County:** Packer Lake, Tahoe National Forest 9 July 2012 (SFSU – BSNC); SE shore of Gold Lake, 7200' 10 July 1976 (SOM). **Plumas County:** SSW Mills Peak, Plumas National Forest 11 July 2012, 30 June 2018 (SFSU - BSNC).

**Distribution: California:** El Dorado, Nevada, Placer, Plumas, Placer and Sierra counties. This species occurs from Norden and Donner Pass north up the Sierra Nevada and discontinuously as far north as Mt. Ashland, Oregon and south down the Coast Ranges. **Nevada:** No records in the Sierra Nevada.

**Habitat:** Elevated hills in brushy areas with the lupine hosts.

**Flight:** Mid-June to mid-August.

**90. Half-Moon Hairstreak--*Satyrrium semiluna maculadistinctum* Mattoon & Austin, 1998.** This species is easily mistaken for a blue because it acts like and resembles a blue (especially *Icaricia icarioides*) in flight, is inconspicuous and is easily overlooked.

**Taxonomic notes:** This species and subspecies were formerly considered subspecies of *Satyrrium fuliginosa*. This species is distinguished by having male forewing stigmata, and gray ventral hindwings similar to those of *Icaricia icarioides*.

**Type Locality:** Nevada: Lyon County, Sweetwater Mountains, west slope of East Sister 2633m.

**Records: California: Alpine County:** Slopes above Carson Pass 9200', 13 July 1986 (KD); Leviathan Peak, Monitor Pass, Humboldt-Toiyabe National Forest 15 July 2019 (PAO-EBO). **Amador County:** Carson Spur 8000' 11 Aug 1984 (RLL/DP). **Madera County:** Minaret Summit, Starkweather Trail 0.5 mi to summit 4 Aug 2001 (BG); Minaret Summit near Mammoth

Lakes 16-17 July 1999; 2 & 4 Aug 2000 (BG). **Mono County:** W of Upper Lee Vining Creek Camp 24 June 1976 (KD); hills NE of Sonora Pass 10,000', 9 Aug 1998 (KD); 0.5 mi W Hilton Creek, 3 mi S Convict Lake 16 July 2005 (E/P, Derham Giuliani), southernmost California locality, common Log Cabin Mine Rd to Warren Bench 31 July 2017 (KN). **Sierra County:** Babbitt Peak, 8670', Bald Mountain Range, Tahoe National Forest (SFSU-BSNC); 1 mi. E Calpine, 20 June 2016 (SFSU-BSNC). **Tuolumne County:** W of Sonora Pass 3 July 1959 (RES/PAO and Nora Opler). **Nevada: Carson City County:** Carson Range, Snow Valley Peak and ridge to north 30 June & 25 July 1981 (GTA). Carson Range: Mt. Rose area 1 July 1985 (GTA); Mt. Rose Trail 2 Aug 1988; 27 Aug 1989 and 7 Aug 1990 (JD); Radar Rim Trail, Radar Peak Rd 28 Aug 2006 (JD); Marlette Lake Rd 2.3 mi S of Snow Valley Peak Rd 30 June 1981 (GTA). **Washoe County:** Carson Range: Tahoe Meadows 1 July 1985 (GTA).

**Distribution: California:** Alpine, Amador, Madera, Mono, Sierra, and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** This hairstreak often occurs in elevated hills with sagebrush (Paul Opler calls this species a "Western sagebrush specialist") and the *Lupinus arbustus*, *L. argenteus*, *L. lepidus* and *L. polyphyllus* hostplants, at least in Nevada (Austin & Leary, 2008). In the Sierra Nevada, several localities are known on the east slope of the Sierra Nevada, but the ridge north of Sonora Pass above the trailhead parking lot seems to be the best-known locality.

**Flight:** Mid-June to August.

### 91. Behr's Hairstreak—*Satyrium behrii behrii* (W. H. Edwards, 1870).

This is a very common hairstreak on the east slope of the Sierra Nevada in areas where *Purshia* bushes grow. *Satyrium behrii* penetrates well westward into the Sierra Nevada and occurs even in the California Coast Ranges and Tehachapi Mountains.

**Sierra Nevada Type Locality:** Mono Lake, treated here as in the Sierra Nevada because this species is common on the west shore of the lake at the eastern base and slope of the Sierra ranging westward up to the Sierra Divide.

**Records: California: Alpine County:** Leviathan Peak, Monitor Pass, Humboldt-Toiyabe National Forest 15 July 2019 (PAO-EBO). **El Dorado County:** Jct. Hwy 89 & Fallen Leaf Rd. 6280' 27 June 2002 (JFE). **Inyo County:** Whitney Portal 9 July 2009 (KD); Big Pine Creek Canyon 26 May 2009 & 6 May 2012 (KD); SF Bishop Creek at 8300' 7 July 1979 & 10 July 1994 (KD). **Kern County:** Walker Pass 4 June 2004 (KD); 0.7 mi SW of Sageland, N of Kelso Valley 14 June 1978; 14 June 1980; and 27 May 1993 (KD), near southern end of range in the Sierra Nevada. **Mono County:** Lee Vining 4 & 17 July 1973 (KD); Tioga Rd at Warren Creek 9000' 6 Aug 1978 (KD); Sonora Pass 9 Aug 1998 (KD); Lower Rock Creek Gorge 24 June & 6 July 2006 (KD). **Sierra County:** Smithneck Road, SE Loyalton, Tahoe National Forest, 21 June 2016 (SFSU-BSNC). **Tulare County:** N of Kennedy Meadows 10 July 1982 (KD); Bald Mountain 9360' 23 June 1994 & 2 mi W of Bald Mountain on Sherman Pass Rd 6 July 1992 (KD); Chimney Peak Rd N side of Lamont Peak 4 & 6 July 1983 (KD); N of Kennedy Meadows



10 July 1982 (KD). **Tuolumne County:** 2 mi W of Sonora Pass 9100' 3 July 1959 (RES/PAO/Nora Opler); Sonora Pass 9 Aug 1998 (KD).

**Distribution: California:** Alpine, Amador, El Dorado, Inyo, Kern, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Drier slopes of pinyon-juniper woodland on the Sierra Nevada east slope and in the Kelso Valley region in Mojave Desert plant communities with abundant *Purshia*. It is also regular in the Kennedy Meadows area on the Kern Plateau.

**Flight:** Late May-early September.

## 92. California Hairstreak—*Satyrrium californica* (W. H. Edwards, 1862)

There are two subspecies in the Sierra Nevada. This is a common and widespread butterfly in the Sierra Nevada. General records are not given.

### a. California Hairstreak—*Satyrrium californica californica* (W. H. Edwards, 1862).

**Type Locality:** Capell Creek, 9 mi. NNE of Napa, Napa County, California.

**National Park Records: Sequoia NP: Tulare County:** Potwisha 25 May 1989 (KD); Mineral King Rd at Redwood Creek 5 July 1985 (KD) and Mineral King Rd Park entrance 15 June 1993 (KD). **Yosemite NP: Mariposa County:** Yosemite Creek Trail, Yosemite Valley 3 Aug 1963 (KD) and Mirror Lake 2 July 1954 (JWT); Tamarack Flat 4 July 1954 (JWT). **Tuolumne County:** Hetch-Hetchy Rd 13 July 1956 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties.

**Habitat:** Upper Sonoran, Transition and lower Canadian Life Zones. This hairstreak is widely distributed on the Sierran west slope in foothill woodland and chaparral, often found going to nectar on milkweed flowers. Host plants include oaks, buck brush and *Cercocarpus*. Adults are frequent flower visitors.

**Flight:** One brood from late May-July.

### b. Great Basin California Hairstreak—*Satyrrium californica cygnus* (W. H. Edwards, 1871).

**Taxonomic notes:** This subspecies has more prominent orange spotting on the hindwings than nominotypical *californica*. Until recent years, few recognized *cygnus* as a valid subspecies, so historical records may be untrustworthy as to subspecies.

**Near Sierra Nevada Type Locality:** 3 miles southwest of Virginia City, 6700', Storey County, Nevada.

**Records: California: Inyo County:** SF of Bishop Creek 8300' 8 Aug 1998 (KD); Whitney Portal 29 July 2014; and common 27 June 2018 (KD). **Mono County:** Mono Lake 12 July 1976 (KD); Lee Vining 17 July 1973 (KD); 9.1 mi N of Bridgeport (Devil's Gate Pass) on US 395, 19 July 1976 & 25 July 2014 (KD); Tom's Place 22 June 1986 (KD); Swall Meadow 8 Aug 1998 (KD). **Sierra County:** Verdi 25 June 1987 (JD). **Tulare County:** Spring, Pine Creek scarce 10 July 1982 (KD & AR); common 30 June 1988 (KD); Kennedy Meadows 8 & 29 July 1988 (KD). **Nevada: Douglas County:** Carson Range, Kingsbury Grade, 4.9-5 mi W Nv 2006, 18 July 1981 (GTA). **Washoe County:** Carson Range, First Creek area, 30 July 2003 (GTA) and Galena Creek Park 18 July 1983 (GTA).

**Distribution: California:** Inyo, Mono and extreme SE Tulare County but it seems likely *cygnus* may also be in Alpine, El Dorado and Placer counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** This subspecies occurs in wetlands and meadows, often near willows, adults readily visits flowers. In the Kennedy Meadows area of Tulare County, adults perch on willows and at Whitney Portal in Inyo County, adults visit flowers on dry soils near the parking lots.

**Flight:** Late June to mid-August.

### 93. Sylvan Hairstreak—*Satyrrium sylvinus* (Boisduval, 1852).

There are three subspecies in the Sierra Nevada.

#### a. Sylvan Hairstreak—*Satyrrium sylvinus sylvinus* (Boisduval, 1852).

This is the most widely distributed *sylvinus* subspecies in the Sierra Nevada range.

**Sierra Nevada Type Locality:** Vicinity of Queen Lily Campground, near Belden, North Fork Feather River Canyon, 1850', Plumas County, California.

**Records: California: Fresno County:** Shaver Lake 16 July 1966 (KD). **Kern County:** Greenhorn Mountains: Poso Creek 5 mi N of Glennville 26 June 1996 & 10 July 1998 (KD); Glennville 24 & 26 June 1996 (KD), south for the Sierra Nevada for this subspecies. **Madera County:** Coarsegold 3 July 1991 (KD); 8 mi SE of Raymond 15 June 1984 (PAO). **Mariposa County:** Fish Camp 25 July 1992 (KD); Jerseydale 21 June 1961 (AOS). **Nevada County:** Donner Pass 7000' 18 Oct 1995, very LATE (AMS). **Plumas County:** 1 mi. N of Clio, Feather River 3 July 2017 (PAO-EBO). **Sierra County:** Hwy 49, NW Sattley 27 June 2017 (SFSU – BSNC); Wild Plum Road, Sierra City, 29 June 2019 (PAO). **Tulare County:** Freeman Creek Grove 16 & 25 July 1980 (KD); Spring, Pine Creek 5-7 mi S of Kennedy Meadows 22 July 2008 (KD), south for east slope Sierra Nevada populations of this subspecies. **Nevada: Washoe County:** Carson Range, First Creek area 30 July 2003 (GTA).

**National Park Records: Sequoia NP: Tulare County:** Mineral King Rd, 5 mi below Cabin Cove 5 July 1985 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley at Museum 8 July 1933 (JSG). **Tuolumne County:** Hetch-Hetchy Rd 13 July 1956 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Washoe County.

**Habitat:** Upper Sonoran, Transition and lower Canadian Life Zones. These hairstreaks are found in willow thickets, meadows and along rivers and creeks.

**Flight:** Late May into September.

**b. Great Basin Sylvan Hairstreak—*Satyrium sylvinus megapallidum* Austin, 1998.**

**Taxonomic note:** This pallid subspecies can have tails or lack them, misleading some into believing a subspecies of the Sylvan Hairstreak and the Dryope Hairstreak both occur in the area as two separate species, as Garth & Tilden (1963) treated them. The true *dryope* occur in southern California and in the California Coast Ranges.

**Type Locality:** Nevada: Elko County: Elko, 12<sup>th</sup> street at Humboldt River 1536m.

**Records: California: Mono County:** Mono Lake Park 10 & 12 Aug 1991 (KD); Devil's Gate Pass area US 395 9-10 mi N of Bridgeport 5 Aug 1978 & 25 July 2014 (KD); Swall Meadow 8 Aug 1998 (KD), southern limit for this subspecies; lower Rock Creek Gorge 24 June and 6 July 2006 (KD). **Nevada: Douglas County:** Carson Range, Genoa Lane, 2.3 mi. W of US 395, 6 Aug 2001 (GTA); Carson Valley, Centerville, 1.6 mi E of Nv 206, 6 Aug 2001 (GTA).

**Distribution:** This subspecies likely occurs up the east side of the Sierra Nevada from Mono County to Placer County as Austin stated this subspecies occurs in the lower Truckee River drainage and it occurs in Douglas County, Nevada near the California line.

**Habitat:** Upper Sonoran and Transition Life Zones in willow thickets, meadows with willows and along creeks, rivers and lakes.

**Flight:** Early July-September.

**c. Desert Sylvan Hairstreak—*Satyrium sylvinus desertorum* (F. Grinnell, 1917).**

**Taxonomic notes:** This subspecies is very lightly colored on the ventral side, has tails and is often misidentified as nominotypical *sylvinus*.

**Type Locality:** Oak Creek, Tehachapi Mountains, Kern County, California.

**Records: California: Inyo County:** Upper Nine Mile Canyon 5 Aug 2008 (KD); Pine Creek Canyon NW Rovana 10 & 11 June 2014 (KD), possibly the northern limit for this subspecies; Owens River E of Bishop 7 Aug 1978; Olancha 2 July 1983 (JGP); Lubken Canyon 2 mi S of Lone Pine 13 Aug 2001 & abundant 8 June 2019 (KD). **Kern County:** Kernville 14 & 21 June 1998 (KD); Canebrake off SR 178, 18 June 2005 (KD); Sageland, Kelso Creek 14 June 1980; Greenhorn Mountains: Sawmill Rd 2 June 2002 (KD); Wofford Heights 24 June 1995 (KD);

Kern Canyon at Democrat Hot Springs 23 June 1963 (KD); Havilah in the Piute Mts. 29 May 1979 (KD). The southern range limit is probably in the Piute Mountains southwest of Sageland. **Tulare County:** Springville 30 May 1987 (KD); Kaweah River at Dry Creek Rd 25 May 1989 (KD); Elderwood 26 May 1994 (KD); upper Kern River at Roads End 14 May 1972 and 21 June 1982 (KD). Since the 2002 forest fire eliminated nominotypical *sylinus* further north along the Kern River and the west slope of the Kern River, *desertorum* has recolonized that area and replaced nominate *sylinus* there.

**Distribution: California:** Inyo, Kern and Tulare Counties. The name *desertorum* implies this subspecies is a desert dweller but it was described from the Tehachapi Mountains near, but not in the Mojave Desert. This subspecies occurs north into the Sierra Nevada up the east side of the Sierra Nevada into the Owens Valley and eastward draining canyons of the range to Pine Creek Canyon near Rovana. It occurs in the Kelso Creek area draining the east slope of the Piute Mountains and Clear Creek through Havilah on the west side of the Piutes. It occurs up the Kern River from at least Democrat Hot Springs to the Sherman Pass Rd and also occurs in the Sierra Nevada foothills on the west side of the San Joaquin Valley to near Fresno County.

**Habitat:** This subspecies occurs along river and creek edges and meadows in the Upper Sonoran and Transition Life Zones. *Satyrium sylinus desertorum* is replaced by the nominotypical subspecies in the Poso Creek drainage in the Glennville/Poso area in the Greenhorn Mountains and on the Kern Plateau at higher elevations and in the Kennedy Meadows area.

**Flight:** Late May to mid- August.

#### **94. Gold-hunter's Hairstreak—*Satyrium auretorum auretorum* (Boisduval).**

There are two subspecies in the Sierra Nevada: These hairstreaks are generally dull brown above and nondescript, poorly marked below. But they are highly sought anyway since this species is a near California endemic, highly desired for one's life list.

##### **a. Gold-hunter's Hairstreak—*Satyrium auretorum auretorum* (Boisduval, 1852).**

**Sierra Nevada Type Locality:** Vicinity of Queen Lily Campground near Belden, North Fork of Feather River Canyon 2400', Plumas County, California.

**Records: California: Amador County:** 3 mi N of Ione 19 & 23 May 1969 (REW). **Fresno County:** San Joaquin River Gorge, 1 mi below the Powerhouse bridge 14 May 2004 (KD). **Inyo County:** Sage Flat Rd 10 May 2000 (E/P). **Madera County:** 8 mi SE of Raymond 15 June 1984 (PAO); 2 mi S of Oakhurst 22 June 1987 (PAO); Coarsegold 3 July 1991 (KD); 23 May & 8 June 1992 (KD). **Mariposa County:** Jerseydale 21-22 June 1958 (AOS); Briceburg and Mariposa 26 June 1954 (JWT); Triangle Rd E of Mariposa 12 June 1976 (MS). **Nevada County:** Lang Crossing 26 June 1974 and swarming 5-14 July 1980 (AMS); Washington 2650' 17 June 1994 (AMS). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 4 July 2017, 3 July 2019 (PAO-EBO). **Sierra County:** N Camptonville, 14 June 1964 (JWT) & 27-29 June 1964 (PAO); Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20

June 2005, 19 June 2006 (SFSU-BSNC); **Tulare County:** Balch Park 29 July 1977 (KD); Sherman Pass Rd 6800', Alder Creek 5 Aug 1982 (KD), this colony was destroyed by the 2002 forest fire. The butterfly still occurs near Limestone Camp visiting milkweeds along the Kern River road in late June and early July.

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 1700' 17 May 1985 (KD). **Yosemite NP: Tuolumne County:** Hetch-Hetchy Rd 13-15 July 1956 (JSG).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. This is generally an uncommon species rarely seen, but sometimes this hairstreak can appear in good numbers.

**Habitat:** Upper Sonoran and lower Transition Life Zones. This hard-to-find species is sometimes common in foothill woodland and mixed coniferous forest with the host oaks: Blue, Scrub and Interior Live oaks. Adults frequent horehound, narrow-leaved milkweeds and *Yerba santa* when in bloom.

**Flight:** Mid-May to mid-August.

**General:** This is a species that many diligently look for, often in vain. I once saw about 6000 individuals in one day along a road on horehound in the Temblor Range in the Coast Ranges, something I have not seen since. I have seen them in good numbers on narrow-leaved milkweeds south of Limestone Camp on a late June butterfly count, in the Sierra Nevada in Tulare County.

**b. Nut-brown Hairstreak—*Satyrrium auretorum spadix*** (Hy. Edwards, 1881).

This subspecies is even more nondescript than the nominotypical subspecies. Subspecies *spadix* appears to blend with the nominotypical subspecies in the Sherman Pass area in Tulare County.

**Type Locality:** Tehachapi Pass, Tehachapi Mountains, Kern County, California.

**Records: California: Kern County:** Greenhorn Mountains: Alta Sierra 4 July 1974; 6 July 1975 and 20 June 1987 (KD); Black Mountain summit 13 July 1973 (JB); Old State Rd on flowering *Eriogonum umbellatum* midway between Wofford Heights and Alta Sierra 19 June 1993; hundreds 8 July 2001 and 3 July 2004 (KD). **Tulare County:** Upper Kern River, Ant Canyon 9 May 2007 (KD); N slope of Lamont Peak on Chimney Peak Rd 4 July 1983 (KD). Greenhorn Mountains: 3-4 mi E of White River 14-15 June 1957 (PAO).

**Distribution: California:** Kern and southern Tulare Counties. The Sage Flat Road record from Inyo County may represent *spadix*.

**Habitat:** This butterfly occurs in foothill woodland and mixed coniferous forest in the Upper Sonoran and lower Transition Life Zones. Adults perch on the host oaks, and visit milkweed flowers and *Eriogonum fasciculatum*.

**Flight:** Late May to mid-July.

**95. Mountain Mahogany Hairstreak**—*Satyrium tetra* (W. H. Edwards, 1870).

**Taxonomic notes:** Formerly known as *Satyrium adenostomatis* (Hy. Edwards). An alternate common name was the “Gray Hairstreak” which of course led to confusion with the other Gray Hairstreak (*Strymon melinus*).

**Type Locality:** Neotype from Arroyo Bayo, Santa Clara County, California.

This is a near California endemic that does reach three Nevada Counties.

**Records: California: Fresno County:** Ridge overlooking Redinger Lake, common 11 June 2004 (KD); SR 168 at Buckeye Helipad 11 June 2004 (KD). **Kern County:** Greenhorn Mountains E of Alta Sierra on SR 155, 20 June 1987; Old State Rd, common 20 June 1987; 19 June 1993 and 7 July 2001 (KD). Piute Mountains, lower Piute Mountain Rd upgrade from Bodfish/Havilah Rd 19 June 1981 & 8 July 1982 (KD); Havilah 10 June 1985 (KD). **Madera County:** 5 mi NNE of Coarsegold 15 June 1984 (PAO); 2 mi S of Oakhurst 22 June 1987 (PAO); 3 mi S of North Fork (town) on Auberry Rd 14 May 2004 (KD). **Mariposa County:** Mariposa 26 June 1954 (JWT); Darrah 29 May 1959 (JWT); Triangle Rd E of Mariposa 12 June 1976 (MS). **Nevada County:** Washington 2650’ 17 June 1994 (AMS). **Sierra County:** Verdi 20 July 1986 & 25 June 1987 (JD). **Tulare County:** Badger-Eshom Rd 8-9 July 1983 (KD); 2-4 mi S of Johnsondale 29 June 1978 (KD); Sherman Pass Rd 4300’ to 6000’ 25 June 1985 & 4 July 2003 (KD); Greenhorn Mountains: Baker Ridge Lookout 24 July 1995 & 3 July 2004 (KD). **Nevada: Carson City County:** Kings Canyon 7 Aug 1980 (GTA). **Douglas County:** Carson Range, lower Daggett Creek 18 July 1981 (GTA) and Kingsburg Grade 4 mi W of Nv 206, 18 July 1985 (GTA); Scossa Ranch, Carson Valley 2 July 1987 (JD). **National Park Records: Kings Canyon NP: Fresno County:** Hwy. 180, E Boydon Caverns 2 Aug 1969 (P. Arnaud Jr.). **Sequoia NP: Tulare County:** Generals Hwy at Amphitheater Point 16 July 1992 & 2 Aug 1993 (KD); Mineral King Road milepost 8 to 12, 15 June and 19 July 1993 (KD).

**Distribution: California:** Alpine, El Dorado, Fresno, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran and Transition Life Zones. This hairstreak is found in foothill woodland, chaparral and mixed coniferous forest where Mountain Mahogany grows, scarce in some years and common in others. An amazing thing I observed with *tetra* was the year following an extremely devastating hot forest fire on the Sherman Pass Rd in the summer of 2002 that left the former habitat looking like the aftermath of an atomic blast. In July 2003, what few flowers survived on the roadcuts shielded from the fire were shared by thousands of Mountain Mahogany Hairstreaks, how did they survive and so commonly?

**Flight:** Late May to August.

**96. Hedgerow Hairstreak**—*Satyrium saepium saepium* (Boisduval, 1852)

Depending on authority, there are 3 or 4 subspecies in the Sierra Nevada. I recognize three.

**a. Hedgerow Hairstreak**—*Satyrrium saepium saepium* (Boisduval, 1852).

**Sierra Nevada Type Locality:** Vicinity of Queen Lily Campground, near Belden, North Fork of the Feather River Canyon, 2400,' Plumas County, California.

**Records: California: Mono County:** Little Walker River Rd W of US 395 17 Aug 2000 (KD); Devil's Gate Pass 17 Aug 2000 (KD); Warren Creek Canyon N side Tioga Rd 7 Sep 2009 (KD).

**Sierra County:** Forest road 52, S of Bassetts, Tahoe National Forest 4 July 2007 (SEABA-C); Smithneck Road, SE of Loyalton, Tahoe National Forest 4 July 2007 (SEABA-C). **Tulare**

**County:** Sherman Pass Rd 4300-8000' 20 June & 8 Aug 1980 (KD); road S of Freeman Creek Grove 16 & 29 July 1983 (KD). These are the areas which are the southern range limits for this subspecies. Subspecies *chalcis* blends with *saepium* in this area. **Nevada: Douglas County:** Carson Range, Kings Canyon 7 Aug 1980 (GTA) and Lower Daggett Creek 18 July 1981 (GTA).

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 25 May 1989 (KD); Mineral King Rd above Park entrance 19 July 1993 (KD). **Yosemite NP: Tuolumne County:** Hetch-Hetchy Rd. 13 July 1956 (JSG); Gin Flat 17 Aug 1957 (JWT).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare (upper Sherman Pass Rd), Tuolumne and Yuba counties. This is the most widely distributed *saepium* subspecies in the Sierra Nevada. **Nevada:** All counties.

**Habitat:** Upper Sonoran, Transition and lower Canadian Life Zones. This hairstreak occurs in foothill woodland, mixed coniferous forest and chaparral where the *Ceanothus* hostplant grows. Adults are frequent flower visitors, perch on the buckthorn hosts and visit mud avidly. An interesting situation occurs on the Sherman Pass Rd which connects the Kern River north of Kernville in Tulare County with the Kennedy Meadows area. Subspecies *chalcis* occurs at the lower western end of that road and is soon replaced by the nominotypical subspecies and then by *subaridum* going further southeast into Kennedy Meadows.

**Flight:** Late May to early September.

**b. Bronzed Hairstreak**—*Satyrrium saepium chalcis* (W. H. Edwards, 1869)

**Taxonomic note:** The named subspecies *fulvescens* (Hy. Edwards, 1877) has a type locality of Havilah, Kern County, California. I collected a long series of this hairstreak there which are inseparable from *chalcis* which is widespread in the southern Sierra Nevada as far north as the Sherman Pass Rd along the Kern River in Tulare County. Thus, I consider *fulvescens* a synonym of *chalcis*. It is interesting that Comstock (1927) illustrates "*fulvescens*" from Monache Meadows, not far to the northeast of the Sherman Pass Rd.

**Type Locality:** Isabel Creek, Santa Clara County, California.

**Records: California: Kern County:** Chimney Peak Road S of Lamont Peak. 4 & 6 July 1983 (KD); Pine Flat south end of Kern Plateau 2 Aug 1985 (KD); Kernville 6 June 1999 (KD); Greenhorn Mountains: Tiger Flat area 17 June 2001 (KD); Old State Rd, hundreds 8 July 2001 & 2 July 2005 (KD). Very common at Havilah 8 June 2009, the type locality for *fulvescens*.

**Tulare County:** Fairview and Calkin's Flat along Kern River 12 June 1999 (KD); Lamont Peak area along Chimney Peak Rd 4 & 6 July 1983 (KD); Greenhorn Mountains at Baker Ridge Lookout 11 & 26 June 1981 and 24 July 1995 (KD).

**Distribution: California:** Kern and Tulare counties. This subspecies occurs in virtually all of southern California including the California Coast Ranges south of San Francisco which ranges east into the Tehachapi Mountains, curving north into the Piutes, Greenhorns (subranges of the Sierra Nevada) to the southern Sierra Nevada north up the Kern River Drainage.

**Habitat:** Upper Sonoran and Transition Zones. This subspecies occupies drier foothill woodland and the chaparral where buckthorn is a dominant species in the Sierra Nevada foothills and in mixed coniferous forest on the west slope of the Sierra Nevada.

**Flight:** Late May to late August.

**c. Desert Mountains Hedgerow Hairstreak**—*Satyrrium saepium subaridum* J. Emmel, T. Emmel & Mattoon, 1998.

**Taxonomic notes:** This subspecies was described (Emmel, Emmel & Mattoon, 1998e) from Hunter Mountain in the Death Valley area, but as it turns out, this subspecies also occurs on the east slope of the Sierra Nevada and on the top of Bald Mountain in Tulare County at 9400' NW of Kennedy Meadows in Tulare County where the larval host *Ceanothus greggii* grows. This hairstreak seems rather pallid below, but is darker basally. It was named for the arid habitat from which it was described.

**Type Locality:** California: Inyo County: Hunter Mountain east of the Nelson Range, small stream and meadow, 0.4 air miles southeast of Peak 7107.

**Records: California: Kern County:** Walker Pass 8 Aug 1977 (KD); Indian Wells Canyon, 20 June 2002 (SS). **Tulare County:** Kennedy Meadows Rd 2-4 mi N of Chimney Peak Rd Jct 22 July 2008 (KD); Spring/Pine Creek 5-7 mi S Kennedy Meadows 10 July 1982 (KD & AR); Bald Mountain just below summit 3 July & 14 Aug 2010 (KD). **Mono County:** Lower Rock Creek Gorge 27 June 1999 (JGP & KD) and 24 June & 6 July 2006 (KD); Swall Meadow 8 & 25 Aug 1998 and 27 June 1999 (KD), this is the northern limit of the range for this subspecies. The southern limit is Walker Pass, but long-term drought may have extirpated this butterfly there.

**Distribution: California:** Inyo, Kern, SE Tulare and southern Mono counties.

**Habitat:** This hairstreak occurs in arid Pinyon-Juniper woodland bordering the Mojave Desert and Great Basin Desert on the east slope of the Sierra Nevada, penetrating further west in the Kennedy Meadows area. Adults often visit the blooms of *Eriogonum fasciculatum*.

**Flight:** June-August.



## 97. Bramble Hairstreak—*Callophrys dumetorum* (Boisduval, 1852)

**Taxonomic notes:** Emmel, Emmel & Mattoon (1998a) applied the name *dumetorum* to what was previously known as the Coastal Green Hairstreak *Callophrys viridis* (W. H. Edwards, 1862) based on the lectotype from San Francisco which was controversial as to what it represented. Since that action, the name *dumetorum* was reapplied by the ICZN (Opinion 2291, Scott, Guppy, Pelham, Calhoun, Davenport, Fisher and Toliver in 2012) to the Bramble Hairstreak that was then known as *Callophrys perplexa*. The name *Callophrys viridis* was reapplied to the Coastal Green Hairstreak. It seems likely that what we are now calling *viridis* may actually be a *Callophrys sheridanii* subspecies.

There are three subspecies that are tentatively listed for the Sierra Nevada. There are questions as to defining what subspecies *dumetorum* is and how it is different from *perplexa* in terms of how far north *perplexa* goes in its range coastally and in the Sierra Nevada. There are also questions as to what species subspecies *superperplexa* really is. There can be a good case made that *superperplexa* actually belongs with *sheridanii*. But it is also possible that *dumetorum* and *sheridanii* in some areas may be phenotypically inseparable.

Because there are questions as to what nominotypical *dumetorum* represents (or whether or not nominotypical *dumetorum* and *perplexa* are really the same insect and should be combined and how far north *perplexa* may go, distributions by county for those two entities combined are given here: **Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, extreme southern Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. It is possible some counties may have scattered colonies of both entities within their county boundaries on the west slope of the Sierra Nevada.

At this point in time, resolving distributions regarding *dumetorum* subspecies distributions are impossible because of there being no real consensus of which populations should be assigned to nominotypical *dumetorum* and which are *perplexa*. In other cases, the subspecies *superperplexa* may represent a *dumetorum* or a *sheridanii* subspecies, which may occur with similar looking individuals of the other similar looking species. Some populations of these green hairstreaks use *Lotus* as hostplants while others use *Eriogonum fasciculation* or *Eriogonum nudum*. Some assert that those using buckwheats are likely *sheridanii* and in at least many cases, they are probably right. Obviously, museum collections will need to be checked thoroughly and rearing studies will need to be done. Unpublished DNA work done so far seems to suggest that *dumetorum* and *sheridanii* have similar DNA

### a. Bramble Hairstreak—*Callophrys dumetorum dumetorum* (Boisduval, 1852).

**Taxonomic notes:** There are Sierra Nevada populations presumed to be *dumetorum* (Redinger Lake, Madera County and the Tule River drainage in Tulare County) that appear to be greener and have less brown or gray on the forewings and often a well-developed spot band on the underside hindwings. These are very similar appearing to *Callophrys viridis* but the larval hosts appear to be *Lotus* species.

**Type Locality:** Brannon Island, Sacramento, Sacramento County, California.

**Records: California: Madera County:** Auberry Rd 4800' 2 mi S of Bass Lake 12 Apr 2002 (RKS); common west end Redinger Lake along San Joaquin River Trail 20 Mar 2004 (KD); ridge NE of Powerhouse/San Joaquin River Crossing Rd 235, 10-11 Apr 2004 (RES/KD).

**Mariposa County:** El Portal 16 Apr 1961 (JWT); Briceburg 10 Mar 1979 and 28 Mar 1981 (KD). **Tulare County:** Near Jct SR 190 at Camp Wishon area 30-31 Mar and 6 Apr 1989 (host appears to be *Lotus*) (KD); 2 mi W Camp Wishon 20 Apr 1993 (KD); Mineral King Rd (outside the Park) 27 Mar 2004 (KD). **Tuolumne County:** Mather 14 May 1961 (JWT).

**Distribution: California:** Covered above, but both *perplexa* and nominotypical *dumetorum* may occur in the above counties. To make matters more difficult, how can we be sure some of the above records are not *sheridanii* populations?

**Habitat:** Upper Sonoran and lower Transition Life Zones. These green hairstreaks occur near creeks, rivers and lakes in foothill woodland and in canyons in both sparsely and heavily vegetated areas with *Lotus* or buckwheats. Adults sometimes are found on hilltops and ridges.

**Flight:** March to early May.

**b. Bramble Hairstreak—*Callophrys dumetorum* near *perplexa*** W. Barnes & Benjamin, 1923.

**Taxonomic notes:** The likely host in the southern Sierra Nevada south of SR178 over Walker Pass is *Eriogonum fasciculatum*. Most individuals resemble southern California *perplexa* but occasional individuals resemble *superperplexa* in the Kelso Valley region.

**Type Locality:** San Diego, San Diego County, California.

**Records: California: Kern County:** Greenhorn Mountains: Kern Canyon, Upper Richbar 24 Mar 1979 (KD); 2 mi S of Kernville E side of range 21 Apr 2006; N of Kelso Valley 0.7-1 mi S of Sageland 13 Apr 1984; 29 Mar 1986 and 1 Apr 2000 (KD). Piute Mountains: Erskine Creek Canyon 20 & 28 Mar 1987 (KD). **Tulare County:** Many green hairstreaks found along the upper Kern River and the lower Sherman Pass area east of the Kern River appear to be similar to *perplexa* sympatric with the “*superperplexa*” phenotypes present.

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 17 Apr 1959 (R.C. Burns); W of Potwisha Camp 17 May 1985; 18 Apr 1986 & 13 Apr 1990 (all KD); Buckeye Flat 18 Apr 1986 (KD). These collected individuals deposited with the NPS and LACM collections need to be re-examined and host plants and butterflies need to be examined to help place these foothill woodland populations as to whether they are using buckwheats or *Lotus* for hostplants. Placement here with *perplexa* is tentative.

**Distribution: California:** Most individuals found in Kern County seem to be *perplexa*, but a few others that resemble what may be the more greenish *superperplexa* or a *sheridanii* also turn up in the Sageland area in the Kelso Valley area and along the Chimney Peak Rd in Kern

County, up road in the Lamont Meadow area in southern Tulare County there may be a *perplexa* X *superperplexa* blend zone. Nine Mile Canyon populations in extreme southern Inyo County and in the Whitney Portal area also appear to be made up of both *perplexa* and *superperplexa* phenotypes (or is it a case of *sheridanii* and *perplexa* sympatric occurrence?).

**Habitat:** Upper Sonoran and lower Transition Life Zones. These green hairstreaks occur in elevated Mojave Desert plant communities in canyons, ravines and flats, foothill woodland, creeks and often at the bases of steep slopes or rocky canyon walls. The hostplant used in these areas appears to be *Eriogonum fasciculatum*.

**Flight:** March to mid-May.

**c. Superperplexing Hairstreak—*Callophrys dumetorum superperplexa*** J. Emmel, T. Emmel & Mattoon, 1998.

**Taxonomic note:** As noted above, the question of what species *superperplexa* represents is difficult to resolve as discussed in the original description (Emmel, Emmel & Mattoon, 1998e). Both *superperplexa* and *C. dumetorum perplexa* can use *Eriogonum fasciculatum* as a larval host. Some green hairstreaks I have collected at Big Pine Creek and near Whitney Portal appear to be *C. sheridanii lemberti*.

**Sierra Nevada Type Locality: Inyo County:** Big Pine Creek 6500', east slope of the Sierra Nevada.

**Records: California: Inyo County:** Lone Pine Creek Canyon near Whitney Portal 25 Apr 2005; 28 Apr 2006 and 31 Mar 2018 (KD). **Kern County:** Chimney Peak Rd S of Lamont Peak 7 Apr 1997; 28 & 31 Mar 2003 (KD). **Tulare County:** Chimney Peak Rd N side of Lamont Peak in canyon W of Lamont Meadows 22 May 1982 & 10 Apr 1985 (KD); Sherman Pass Rd at Alder Creek 6800' 2 June 2013 (KD); Sherman Pass Rd E of Kern River 4900' 29 June 2014 (SR); Goldledge Creek area 24 Apr 1981 & 2 Apr 1987 (KD) upper Kern River E of Ant Canyon 6 to 21 Apr 2006 and 20 Feb-4 Mar 2007 (KD); **Mono County:** Lower Rock Creek, larvae on *Eriogonum kennedyi* 24 May 2000, raised to adults, emerged 1 Mar 2001 (JB); Lower Rock Creek 9 Apr 2007 (KD).

**Distribution: California:** Inyo, northern Kern County, extreme southern Mono and Tulare counties. This subspecies occurs at the south end of the Kern Plateau and in the Kern River drainage from Ant Canyon north to the Sherman Pass Rd east of the Kern River up to about 6800'. Many *perplexa* or *dumetorum* phenotypes occur along the Kern River with *superperplexa* phenotypes. It is possible that this may be a blend zone between subspecies or else both *dumetorum* and *sheridanii* co-occur in this area.

**Habitat:** Sagebrush areas in canyon bottoms or at the base of canyon walls, often near water.

**Flight:** Late March to May (rarely late May into early June).

**98. Lember's Hairstreak—*Callophrys sheridanii lemberti* Tilden, 1963.**

**Taxonomic notes:** *Lemberti* was described as a full species and was so considered in Emmel, Emmel & Mattoon's 1998 (g) state checklist. However, it seems that now, most treat *lemberti* as a subspecies of *sheridanii*. This species tends to be smaller with a lighter shade of green than similar looking *C. dumetorum*.

**Sierra Nevada Type Locality:** West above Tioga Pass, Yosemite National Park, California (Tuolumne County), where the Gaylor Lakes Trail reaches its highest point before dropping down to Gaylor Basin, thence southerly along the ridge to rock outcrops, about two to three hundred yards.

**Records:** **California:** **Alpine County:** S of Fredericksburg 9 Apr 1972 (AOS & REW). **El Dorado County:** Camp Richardson 6200' 7 June 1968 (David Bauer); Loon Lake 6352' 9 Apr 1988 (DP). **Fresno County:** Kaiser Crest 10,300' 17 June to 21 June 1930 (LMI, reported as *C. dumetorum perplexa* but before *lemberti* was known at an altitude where *dumetorum* does not occur). **Inyo County:** SF Bishop Creek 8400-8700' 18 May 1993; 23 June 1986 & 27 May 1997 (KD); Onion Valley, lower trail to Kearsarge Pass 19 May 2013 (KD). **Fresno County:** Kaiser Pass 10,000' 15-26 June 1966 (RES, KCH); Kaiser Ridge 10,000' 1968, no specific date (JL). **Madera County:** Trail up Fresno Dome to summit and saddle 13 June 2002 (KD); Big Sandy Camp 29 May 2007 (KD). **Mono County:** Warren Creek 9000' 21 June 1986 (KD); 1 mi E Tioga Pass 5 July 2006 (KD); Saddlebag Lake 10,000' 28 June 1981 (RLL); trail on E side Saddlebag Lake 18 Aug 2011 (KD); ridge SE side Sonora Pass at 11,000' 7 July 1987 (KD); Dechambeau Creek NW side Mono Lake 17 Apr 2016 (KN); near Lundy Lake Dam 7 June 2019 (KD); Hot Creek E Mammoth 31 May 1979 (MS, reported as *comstocki*). **Nevada County:** Lang Crossing 5000' 15 June 1977 (AMS); Castle Peak 9000' 12 Aug & 8 Sep 1982; 2 Sep 1995 (all AMS). **Placer County** (at Nevada Co. line): Martis Creek Recreation area 14 June 2003 (KD & Bruce Webb). **Sierra County:** Packer Saddle, Tahoe National Forest, 22 June 2016 (SFSU-BSNC). **Tulare County:** Bald Mountain below Lookout 12 & 20 June 1999 (KD); E of Kern River, Sherman Pass Rd at Alder Creek 6800', 29 May (KD) & 30 May (JB) 2018. **Nevada:** **Carson City County.** **Washoe County:** Hungry Valley area off Eagle Cyn Rd 8 & 18 Apr 2016 (JD); Carson Range, Nv 431, 1.1 mi E of Mt. Rose Summit 18 July 1983 (GTA); Radar Rim Trail, Radar Peak segment 7 July 2013 (JD).

**National Park Records:** **Sequoia NP:** **Tulare County:** Timber Gap Trail 9200' 11 June 2006 (Alan Wight). **Yosemite NP:** **Mariposa County:** Murphy Creek Trail (N from Tenaya Lake) 8000-8500' 4 July 1981 (RLL). **Tuolumne County:** W of Tioga Pass, highest point of Gaylor Lakes Trail (the type locality) and duplicated 30 July 2018 and 29 July 2019 (YBC); White Wolf 10 July 1956 (JSG).

**Distribution:** **California:** Alpine, Amador, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Canadian, Hudsonian and Arctic-Alpine Life Zones. Alpine-Fell fields, sagebrush areas on rocky slopes with *Eriogonum umbellatum*, the larval host. This butterfly is rarely seen in numbers.

**Flight:** Mid-April to mid-August depending on temperature, weather, timing of snow melt and locality.

**99. Juniper Hairstreak—*Callophrys siva*** (W. H. Edwards, 1874).

Also known as *Callophrys gryneus* (Hübner, 1819) by those who believe *siva* is conspecific with *C. gryneus*.

**Taxonomic notes:** Distribution data in southern California and the southern Sierra Nevada and allozyme studies of *Callophrys* by Pratt, Ballmer & Wright (2011) appear to support treating juniper feeding *C. siva* and Incense Cedar feeding *C. nelsoni* as different from *C. gryneus* and from each other. This species was long placed in the genus *Mitoura*, considered a subgenus now.

**a. Juniper Hairstreak—*Callophrys siva juniperaria*** (J. A. Comstock, 1925)

**Taxonomic notes:** This is the Juniper Hairstreak subspecies in the Sierra Nevada that has green coloration below. It tends to be smaller than the nominotypical subspecies and lacks “the W” (a white line shaped like a “W”) on the underside of the hind wings near the tails.

**Type Locality:** Mint Canyon, Sierra Madre Mountains, Los Angeles County, California. This location is now in what are called the San Gabriel Mountains and the Sierra Madre are in the Coast Ranges in Ventura, San Luis Obispo and Santa Barbara Counties.

**Records: California: Kern County:** Piute Mountains: Bodfish 8 to 27 Apr & 8 May 1976 (KD); 2-3 mi S of Bodfish 14-30 May 1976 (KD); Piute Mountain Rd above Bodfish-Havilah Rd summit 21 May 1979 & 4 June 2004 (KD); Greenhorn Mountains: Old State Rd 3000’-4000’ 9 May 1981 & 5 May 1984 (KD); Butterbredt Peak and ridges to the southwest, 20 Apr 1977; 7 May 1978 & 30 July 1982 (KD); 2 mi NW of Birdspring Pass 14 & 22 Apr 2000 (KD) & 28 Apr 2012 (Paul Levine & KD). **Tulare County:** Kern River S of Corral Creek on rocky hill with junipers 14 & 20 Apr 2002 (KD).

**Distribution: California:** Kern and Tulare counties. This butterfly has been found at only one small juniper stand east of the Kern River south of Corral Creek in Tulare County. In Kern County it has a more extensive range, found at lower elevations in the Juniper belt in the Piute and Greenhorn Mountains and also in the Kelso Valley-Butterbredt Peak area at the south side of the Sierra Nevada.

**Habitat:** This subspecies occurs in Juniper woodland and chaparral and also stands of Junipers in higher levels of the Mojave Desert plant community where junipers grow. Adults perch on their host (junipers) and frequent various flowers.

**Flight:** March to June, one record for late July.

**b. Great Basin Juniper Hairstreak**—*Callophrys siva* near *chalcosiva* Clench, 1981.

**Taxonomic notes:** Some of these brown Juniper Hairstreaks were formerly believed to be Barry's Hairstreak (*Callophrys* or *Mitoura barryi* K Johnson, 1976).

**Type Locality:** South Willow Creek, Stansbury Mountains, Tooele County, Utah.

**Records: California: Mono County:** Lee Vining Canyon 14 July 2017 (KN) and nearby Horse Meadows 14 July 2017 (KN).and base of east slope of the Sierra Nevada, W side Mono Lake 29 May & 25 June 2017 (KN). **Sierra County:** Between Sierraville and Loyalton, abundant 21 June 1990 (an unusual late date, AMS). **Tulare County:** Pine Mountain area N of Kennedy Meadows 3 July 1978; 25 June 1982 and other dates; Spring (Pine Creek) 5-7 mi S Kennedy Meadows 25 June 1982 (KD) and 10 July 1982 (KD/AR); Fish Creek area, common 18 June 2007 (KD) N of Chimney Peak Ranger Station 18 June 2005 (KD); below Bald Mountain Lookout 20 June 1992 (KD), no longer there after a major 1990 forest fire. **Nevada: Carson City County:** Brunswick Canyon 4 May 1984 (GTA). **Washoe County:** Washoe Lake State Park 15 May 1985 (JD).

**Distribution: California:** El Dorado, Mono, Nevada, Plumas, Sierra and Tulare counties. This subspecies occurs in Inyo County but this is in desert ranges east of the Sierra Nevada. It is likely it may occur somewhere on the Sierran east slope in that county. It occurs near Nine Mile Canyon Summit on the Kern Plateau. **Nevada:** All counties.

**Habitat:** This butterfly is known to feed on various junipers including Western Juniper *Juniperus occidentalis* Hook. on the Kern Plateau and at some Nevada sites and other juniper species elsewhere. This hairstreak visits wet spots and flowers in meadows below the very tall trees that serve as their host plant. If adults fly up in the crowns of these very tall trees, no extension net is long enough.

**Flight:** Mid-May to July, depending on locality.

**100. Nelson's Hairstreak**—*Callophrys nelsoni* (Boisduval, 1969).

**Taxonomic notes:** Formerly placed in the genus *Mitoura*. I treat Nelson's Hairstreak and the Juniper Hairstreaks as separate species. Both *nelsoni* (on Incense Cedar) and either *Callophrys siva juniperaria* (California Juniper) or *C. siva* near *chalcosiva* (on Western Juniper) occur in the southern Sierra Nevada and Greenhorn Mountains N of SR 178, separated by about 2000' elevation or more without blending. It may be possible *nelsoni* and *chalcosiva* may overlap flights on the Sherman Pass Rd in July NW of Kennedy Meadows.

**Sierra Nevada Type Locality:** Hwy. 70 at Chambers Creek, 6 road miles SW of Belden, North Fork Feather River Canyon, 1850', Plumas County, California.

**Records: California: Kern County:** Greenhorn Mountains: Cedar Creek 6 June 1977 (KD); Alta Sierra 20 June 1987 & 25 June 1995 (KD); Greenhorn Crest near Tiger Flat 20 to 30 June

1987; 10-24 June 1996 and 17 June 2001 (KD). **Tulare County:** Greenhorn Mountains Crest area N of Tiger Flat 26 June 1981; 10 to 24 June 1996 (KD). Huge populations occurred on the Sherman Pass Rd at mid-elevations (especially Alder Creek 6800') where Incense Cedar predominated prior to a major 2002 forest fire. At present an occasional stray is found within the burn area, but there has been no real recovery of the butterfly from that fire. In contrast Nelson's Hairstreak had recovered well on the Tiger Flat Rd 1990 fire, but a colony of *nelsoni* on Baker Ridge 11 June 1981 (KD) has not returned and a more recent fire decimated the Tiger Flat colony area, though adults appeared the following year only to disappear the next year. **Nevada: Carson City County,** Carson Range, Spooner, Kings Canyon Rd, 9.4 mi N of US 50, 6 June 1980 (GTA). **Washoe County:** Carson Range, Interstate 80 between exits 1 and 2, 26 June 1988 (GTA); Carson Range, above Incline Village, Fish Creek area, 10 July 2003 (GTA).

**National Park Records: Sequoia NP: Tulare County:** Redwood Creek, Mineral King Rd 5 July 1985 (KD); Silver City 5 July 1985 (KD); Lodgepole and Tokopah Falls Trail 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** Museum, Yosemite Valley 5 July 1933 (JSG); Crane Flat 24 June 1959 (JSG); Happy Isles, Yosemite Valley 31 May 1964 (KD). **Tuolumne County:** Hetch-Hetchy 13 July 1956 (JSG) and Hetch-Hetchy Rd 14 May 1961 (JWT);

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuma counties. There are no records for Inyo County. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Transition and lower Canadian Life Zones. Adults occur in areas where Incense Cedars grow, the larval host. This common hairstreak avidly goes to mud and visit various flowers.

**Flight:** Late May to July.

**101. Thicket Hairstreak—*Callophrys spinetorum*** (Hewitson, 1867).

**Taxonomic note:** This species was formerly placed by various authorities in the genera *Mitoura*, *Loranthomitoura* or *Cisincisalia*.

**Sierra Nevada Type Locality:** Vicinity of Gold Lake Lodge, near Gold Lake, Sierra Nevada, Sierra County, California.

**Records: California: Fresno County:** Ten Mile Creek near Hume Lake 29 Aug 1972 (SR); Edison Lake 3 & 8 July 2002 (RE); two on flowering tree Auberry Rd, 1 mi above jct with Jose Basin Rd 10 Sep 2015 (KD). **Kern County:** Greenhorn Mountains: Old State Rd. 3500' 22 Aug 2003 and near Tiger Flat 27 June 2015 (KD). Piute Mountains: E slope on rocky outcrop near entrance to Sequoia NF above Piute Mtn. Rd 3 May 2005 (KD). **Madera County:** Ethelfreda Creek 28 mi E Bass Lake 22 June 1987 (PAO); Fresno Dome Rd (FS 10) above Redwood Creek 11 June 1993 (KD); Fresno Dome Trailhead and vicinity 19 June 2014 & 29 June 2016 (KD). **Mariposa County:** El Portal 4 May 1968 (KCH, Jan Hughes, JL); Chowchilla Mtn. Summit 15 June 2003 (Adam Winer); Jerseydale 27 July 1962 & 26 Sep 1996 (AOS). **Mono County:** Topaz

Lake 10 June 1973 (AOS & REW); Lower Rock Creek 14 May 2006 (KD). **Plumas County:** Round Lake Loop, Plumas National Forest, 24 June 2016, 3 July 2017 (SFSU-BSNC). **Sierra County:** Packer Saddle, Tahoe National Forest 6 July 2007 (SEABA-C). **Tulare County:** Spring (Pine Creek) 5-7 mi S Kennedy Meadows 25 June & 10 July 1982; 14 July 1985 (KD); 3 mi W of Sherman Pass 5 July 1986 & 3 July 2005 (KD); Chimney Peak Rd N Lamont Peak 20 June 1992 (KD); hilltop E Kern River and Goldledge Camp 19 Mar 1996 (KD). **Tuolumne County:** Niagara Creek Rd 22 July 1995 (photo, Jeffrey Glassberg). **Nevada: Douglas County:** Carson Range, Kingsburg Grade 18 July 1964 (AOS) and 5 Apr 1988 (MS).

**National Park Records: Sequoia NP: Tulare County:** Mineral King Rd 6000' "July 1979" (JHM); Redwood Creek, Mineral King Rd 5 July 1985 (KD). **Yosemite NP: Mariposa County:** Tamarack Flat 4 July 1954 (JWT); Tioga Rd. 24 June 1959 (JSG).

**Distribution: California:** All counties. Like *Callophrys johnsoni*, this species would superficially appear to be a common species frequently seen, but its mistletoe host tends to grow high in a wider variety of trees than *C. johnsoni*, including junipers. Similarly, it is believed that this butterfly also spends most of its time perched high up in the forest canopy, rarely descending below to mud or flowers, with flowering *Ceanothus* a favorite. However, this butterfly is more frequently seen than Johnson's Hairstreak, but going to a particular destination in hopes of seeing any or many of these hairstreaks may likely be unrealistic. They are more apt to turn up when you don't expect to find one. **Nevada:** All counties.

**Habitat:** See above. This butterfly occurs in the Upper Sonoran, Transition and Canadian Life Zones in chaparral, foothill woodland, on hilltops and ridges, in mixed coniferous forest and coniferous forests. Adults will hilltop or flit around the tops of junipers, visit mud at seeps or wet spots and visit flowers.

**Flight:** These butterflies appear to be double brooded, maybe triple brooded in some places and have been found from March well into September.

**102. Johnson's Hairstreak—*Callophrys johnsoni*** (Skinner, 1904).

**Taxonomic notes:** This species was formerly placed by various authorities in the genus *Mitoura*, *Loranthomitoura* or *Cisincisalia*.

**Type Locality:** "British Columbia"

**Records: California: Amador County:** White Azalea Camp & Beaver Creek, 3-4 mi W Salt Springs Dam 24 Apr 1977 (REW); American River below Auburn 23 Mar 1985 (N LaDue). Peddler Hill 7000' 7 & 8 June 1992 (REW). **Calaveras County:** Hwy 4 at Herman Springs Rd 6500' 25 June 1971 (JRM); several 10 mi E Camp Connell at Poison Creek 7000' 4 June 1992 (REW). **El Dorado County:** 1 mi NW of Iron Mtn. Ski area 7000' 11 June 1992 (REW); 4-5 mi NE of Hwy 88 on FR5, 7 June 1997 (KR); Mormon Emigrant Trail, .5 mi NW Hwy 88, 7 June 2004 (JB). **Madera County:** SR.41 at 4000' W of Sugar Pine 22 June 1979 (JGP). **Mariposa County:** Jerseydale 4 to 17 Aug 1983 (scarce, AOS); 14 Apr 1997 (AOS); near Coulterville 11



Mar 1972 (JRM & AOS). **Plumas County:** Round Lake Loop, Plumas National Forest, 24 June 2016, 3 July 2017 (SFSU-BSNC). **Sierra County:** Forest road 52, S Bassetts, Tahoe National Forest 26 June 2017 (SFSU – BSNC); Gold Lake 30 June 1968 (JAS); Yuba Pass area 7 June 2018 (Ray Bruun). **Tuolumne County:** SR 108 at Eagle Meadow Rd 7000' 10 June 1992 (REW).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Madera, Mariposa, Nevada, Placer, Plumas, Sierra and Tuolumne counties. With this species widely recorded from the central Sierra Nevada northward, one might think that this butterfly is well distributed and common, but in reality *johnsoni* is an unreliable butterfly hard to find, though there have been times when there have been population outbreaks.

**Habitat:** It is believed this butterfly stays up high in the forest canopy where its mistletoe hostplant (*Arceuthobium campylopodum*) is a parasite on western hemlock which grows high above the ground, the butterfly rarely coming down to ground level to be found at wet spots or flowers. This butterfly is totally absent or has not been found south of Madera County with the record from east of Oakhurst west of Sugar Pine being the southernmost record in the Sierra Nevada.

**Flight:** June to late August.

### **103. Brown Elfin—*Callophrys augustinus* (Westwood, 1852).**

There are two subspecies found in the Sierra Nevada.

#### **a. Western Brown Elfin—*Callophrys augustinus iroides* (Boisduval, 1852).**

**Taxonomic notes:** This species has also been placed by some taxonomists in the genus *Incisalia* or *Deciduphagus*.

**Sierra Nevada Type Locality:** Hwy. 70 at Soda Creek, E. Branch North Fork Feather River Canyon, Plumas County, California.

**Records: California: Inyo County:** Upper Nine Mile Canyon 25 May 1985 (RPM), subspecies undetermined, *concava* was not yet known. **Tulare County:** Kings Canyon Overlook 23 June 1989 (KD). **Nevada: Douglas County:** Carson Range, Kingsbury Grade 4 mi W of Nv 206, 19 May 1981 & 3 May 1984 (GTA). **Washoe County:** Carson Range, Galena Creek Park 25 May 1984 (GTA); Clear Creek Canyon 18 May 1986 (JD); and Carson Range, above Incline Village, Fish Creek area 10 July 2003 (GTA).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo (?), Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties. This subspecies rather than subspecies *concava* may be what occurs in upper Nine Mile Canyon (but is very rare there) or at higher elevations on the east slope of Inyo County. It should be noted that what I am calling *concava* below is mixed with *iroides* and *concava* phenotypes with the latter more common.

**National Park Records: Kings Canyon NP: Tulare County:** Buena Vista Peak 28 June 1987 (KD). **Sequoia NP: Tulare County:** Buckeye Flat 17 May 1985 & 18 Apr 1986 (KD); Potwisha and Ash Mountain 28 Feb & 18 Apr 1986 (KD); Mineral King, Timber Gap Trail 8200' 22 July 1991 (KD); Crystal Cave 27 June 1987 (KD); Wolverton 24 July 1987 (KD). **Yosemite NP: Mariposa County:** Trail from Camp Curry to Glacier Point 9 July 1933 (JSG); Glacier Point 23 June 1959 (JSG) and Crane Flat 3 July 1954 (JWT); Happy Isles, Yosemite Valley 31 May 1964 (KD).

**Habitat:** This is a common widespread butterfly that occurs in the Upper Sonoran, Transition and Canadian Life Zones in a wide variety of habitats. Adults are frequently found on various flowering plants along streamsides and roadsides.

**Flight:** March to July.

**b. Great Basin Brown Elfin—*Callophrys augustinus* near *concava* Austin, 1998.**

This butterfly has only recently been recognized to occur on the eastern slope of the Sierra Nevada. In favored locations, this butterfly can be fairly common.

**Type Locality:** Nevada: Elko County; Independence Mountains, Jacks Creek, 1.3 miles east of Jacks Creek Campground 2042m.

**Records: California: Inyo County:** SF Bishop Creek 8400' on trail S above Bishop Creek Lodge 9 May 1997 (KD); Big Pine Creek & Canyon 30 Apr 2000 (KD); Lone Pine Creek & canyon below Whitney Portal 25 Apr 2005 & 31 Mar to 20 Apr 2018 (KD). **Mono County:** Lower Rock Creek 10 & 14 May 2006 and common 9 Apr 2007 (KD); 1 mi E Tioga Pass 5 July 2006 (KD, possibly *C. mossii windi*, determination difficult); Little Antelope Canyon 14 June 1996 (BRB); Swall Meadow 9 & 20 May 1997 (KD) & 30 May 1999 (KD/Jack Levy). **Tulare County:** Spring (Pine Creek) S of Kennedy Meadows 8 May 2018 (KD).

**Distribution: California:** Inyo, Mono and extreme SE Tulare counties on the Kern Plateau. **Nevada:** Contrary to what might be expected, this is not the subspecies in the Carson Range.

**Habitat:** Foothill woodland, mixed coniferous forest and sagebrush scrub with the hostplants on the eastern slope of the Sierra Nevada.

**Flight:** Late March to mid-July.

**104. Wind's Moss Elfin—*Callophrys mossii windi* (Clench, 1943).**

**Taxonomic notes:** This species has also been placed by some in the genus *Incisalia* or *Deciduphagus*.

**Sierra Nevada Type Locality:** Placer County, California.

**Records: California: Amador County:** American River 3 mi SE Auburn 16 Mar 1985 (DP); Salt Springs Reservoir Rd W Fork Panther Creek, 12 mi S of Hwy. 88, larva collected 4 June 1988, emerged 30 Mar 1989 (JB). **El Dorado County:** SE shore Loon Lake 6300' 9-10 June

1973 (RLL). **Mariposa County:** Indian Flat 16 Apr 1961 (JWT); Skelton Canyon near Jerseydale in April (AOS). **Placer County:** Donner Peak 8000' 23 July 1991 (JFE). **Plumas County:** Frazier Falls trail, Plumas National Forest 25 June 2017 (PAO-EBO). **Sierra County:** 1 mi NE Washington 2700' 24 Mar 1984 (RLL/D Parkinson). **Plumas County:** Frazier Falls trail, Plumas National Forest. **Tulare County:** Larvae collected on *Sedum* along Tule River drainage E. of Coffee Camp near Camp Wishon 28 May 1988 and reared to adults (JB).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Madera, Mariposa, Nevada, Placer, Plumas, Sierra and Tulare counties. **Nevada:** No records.

**Habitat:** This species tends to occur with *Sedum* (the larval hosts) on steeply walled rocky canyons, cliffs and steep hillsides and the adults are very local and rarely seen. Most collectors who have any specimens, found larvae on their stonecrop hosts and reared them to adults. It can be very dangerous to collect adults or access hostplants to obtain larvae. While this species is recorded from a fair number of counties, it is not a butterfly that is seen or collected often and published records are few.

**Flight:** Late March to July at the highest elevations this species inhabits. Most records of adults are found in late March and April.

#### **105. Western Pine Elfin—*Callophrys eryphon eryphon* (Boisduval, 1852).**

Also known as the Western Banded Elfin, there are two subspecies in the Sierra Nevada region.

##### **a. Western Pine Elfin—*Callophrys eryphon eryphon* (Boisduval, 1852).**

**Taxonomic notes:** This species was formerly placed in the genus *Incisalia*, used as a subgenus in the *Pelham Catalogue*.

**Sierra Nevada Type Locality:** Hwy. 70 at Soda Creek, E. Branch North Fork Feather River Canyon, Plumas County, California.

**Records: California: Inyo County:** Upper Nine Mile Canyon 25 May & 8 June 1985 (KD), these seem lighter and may be closer to *pallescens*. **Kern County:** Cannell VABM near Pine Flat, south end Kern Plateau 9 June 1994 (KD & RPM); Pine Flat, common 10 June 2006 (KD/RPM); Greenhorn Mountains: Alta Sierra 4 July 1974 (KD); N of Shirley Meadows 6 July 1975 & 13 June 1977 (KD); N of Tiger Flat 20 June 1987 (KD); Breckenridge Mountain at Squirrel Meadow 10 June 1985 (KD); Piute Mountains: Piute Mtn. Rd. N Piute Peak 19 June 1981 & 8 July 1982 (KD), likely near south end of range in the Sierra Nevada. **Mono County:** Lake Ellery Dam 29 July 2019 (KD); Hudsonian Zone forest west below Saddlebag Lake Dam 29 & 30 July 2019 (KD). **Nevada: Carson City County:** Carson City, Carson Range, 2.3 mi N of Spooner Summit 14 June 1978 (GTA). **Douglas County:** Carson Range, Kingsbury Grade, 2 mi W of Nv 206, 21 May 1984 (GTA). **Washoe County:** Carson Range, Galena Creek 25 May 1984 (GTA).

**National Park Records: Sequoia NP: Tulare County:** Little Baldy Saddle 9 June 1960 (G. H. Gerdes); Tokopah Falls Trail 12 June 1990 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley on trail between Camp Curry and Happy Isles 31 May 1964 (KD); Tamarack Flat 4 July 1954 (JWT); Tenaya Canyon 11 July 1958 (AOS). **Tuolumne County:** Smoky Jack 4 July 1954 (JWT).

**Distribution: California:** All counties. Despite the wide distribution, this high elevation species is often scarce.

**Habitat:** This hairstreak occurs in Transition, Canadian and Hudsonian Life Zones in areas with suitable pine tree hosts. Adults often fly around and perch on tree branches or visit nearby flowers or alight on willows in willow thickets or along streams.

**Flight:** Late April-August. Peak flights in the southern Sierra Nevada tend to be late May to mid-July.

**b. Great Basin Pine Elfin—*Callophrys eryphon* near *pallescens* Austin, 1998.**

**Type Locality:** Nevada: Nye County; Toiyabe Mountains, Jett Canyon, 2012m.

**Records: California: Mono County:** Lower Rock Creek 14 May 2006 and 9 Apr 2007 (KD); Mill Canyon 15 June 1996 (BRB); W of Mono Lake off US 395, 26 June 1999 (KD); Green Canyon 10 June 1996 (BRB).

**Distribution: California:** Mono County only, **Nevada:** Sierra Nevada records are all the nominotypical subspecies. It is possible that when Inyo County and southern Kern Plateau material (Kern and extreme southern Tulare County) is checked more closely, that *pallescens* may have a more extensive range in California.

**Habitat:** The classic Sierran locality appeared to be Lower Rock Creek in mid-May.

**Flight:** April to July

**106. Gray Hairstreak—*Strymon melinus pudica* (Hy. Edwards, 1877).**

This is one of the most common and widespread species in the USA and tends to be most common in the lowlands, but can breed or stray up much higher into the Canadian Life Zone. Despite its distinctive pattern and field marks, it is commonly misidentified by newcomers to watching butterflies.

**Type Locality:** Contra Costa County, California.

**National Park Records: Sequoia NP: Tulare County:** Potwisha 6 Sep 1985 and 25 May 1989 (KD); Buckeye Flat 13 Apr 1990 (KD); Tokopah Falls Trail 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** Museum, Yosemite Valley 8 July 1933 (JSG).

**Distribution: California:** All counties. General records are not given since it is a widespread and common species frequently seen.

**Habitat:** This butterfly is most common in city gardens and agricultural fields (found in some areas within the Sierra Nevada) and sometimes common in the Upper Sonoran and Transition Life Zones, especially in late season on rabbitbrush and other late summer/fall flowers.

**Flight:** Late February to early November.

**107. Mallow Scrub-Hairstreak—*Strymon istapa clenchi* Austin & J. Emmel, 1998.**

This is a Mojave Desert species which has only been found in the Sierra Nevada in the Weldon area in the Kern River Valley. There are no other Sierra Nevada records.

**Type Locality:** California, Riverside County, Blythe.

**Records: California: Kern County:** There are four Sierra Nevada records from the Kern River Valley near Lake Isabella at Hanning Flat 10 Sep 2001 (SOM); Weldon off Paul's Place Rd 23 Oct 2013 (SR) and Weldon off junction of SR 178 and Kelso Valley Rd 4 Nov 2014 and 8 Oct 2019 (KD). Alkali Mallow (the host) does grow in this area.

**Habitat:** Normally found in desert scrub or agricultural fields where the alkali mallow hostplant occurs. Males are known to hilltop but all Sierran captures were on flats near hills, blooming rabbitbrush and water.

**Flight:** Potentially as early as March but all known Sierra Nevada records are in the fall. This species may not be able to survive the winters.

**108. Marine Blue—*Leptotes marina* (Reakirt, 1868).**

**Type Locality:** Orizaba, Mexico near Veracruz.

**Records: California: El Dorado County:** Pope Marsh, South Lake Tahoe 9 Sep 2015 (T. Will Richardson). **Fresno County:** SR 168, 14 mi NW Shaver Lake 26 May 2016 (KD). **Inyo County:** Owens River E of Bishop 7 Aug 1978 (KD); Nine Mile Canyon 25 May 1985 & 30 Apr 2019 (KD); Whitney Portal 9 July 2009 (KD). **Madera County:** Cedar Valley 3350', 26 June 1995 (L/S); Coarsegold 9 Aug 1993 (KD); Sivels Mountain, Fresno Dome area 11 June 1993 (Kevin Davenport). **Mono County:** Tioga Rd, Junction Camp 21 June 1986 (KD); Warren Creek 9000' 29 July 2019 (KD); Lower Rock Creek 14 May, 24 June & 6 July 2006 (KD). **Nevada County:** Castle Peak at tree line 20 July 1993 (AMS). **Nevada County:** Donner Pass 7000' 25 July & 3 Oct 1993 (AMS). **Sierra County:** Sierra Valley 8 July 1993 (AMS); 1 mi. E Yuba Pass, Hwy 49, Tahoe National Forest 20 June 2005 (SFSU-BSNC). **Nevada: Washoe County:** Mt. Rose above timberline 18 July 1993 (AMS).

**National Park Records: Sequoia NP: Tulare County:** 2 mi E of Potwisha 18 Apr 1986 (KD).; Mineral King Rd, Park entrance 19 July 1993 (KD). **Yosemite NP: Tuolumne County:** Tuolumne Meadows 29 June 1954 (C. H. Ericksen)

**Distribution: California:** Alpine, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne (All counties except Amador and Yuba Counties). **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran, Transition, Canadian and Hudsonian Life Zones. This butterfly frequents weedy legumes in wetter areas, often in otherwise dry areas; often along small streams or in canyons.

**Flight:** Late March-October.

**109. Western Pygmy Blue—*Brephidium exilis* (Boisduval, 1852).**

This may be the smallest butterfly in North America and is easily overlooked.

**Type Locality:** Sacramento, Sacramento County, California.

**Records: California: Mono County:** E above Saddlebag Lake 28 July 1958 (AOS); below Ellery Lake Dam, E of Tioga Pass 16 Aug 1975 (KD).

**National Park Records: Sequoia NP: Tulare County:** Halstead Meadow 24 July 1987 (KD).

**Distribution: California:** All counties except Plumas County. **Nevada:** Carson City, Douglas & Washoe counties. This species should turn up commonly in the dry western foothills inside Kings Canyon and Sequoia National Parks. There are records from very near Yosemite National Park.

**Habitat:** Lower and Upper Sonoran Zones, straying higher. This is a very common species in wastelands, Mojave Desert plant communities, saltbush flats and drier areas of the Sierra Nevada on both the west and east slopes. Because it is such a common and widespread species, only two general records near the eastern boundary of Yosemite NP are provided here, but this species may be scarce in some counties.

**Flight:** March to early November.

**110. Eastern Tailed Blue—*Cupido comyntas sissona* (W. G. Wright, 1905).**

This is generally a very rare butterfly in the Sierra Nevada but locally common in the western foothills, but rarely penetrating very far up the higher western slope.

**Taxonomic notes:** This species was long placed in the genus *Everes*.

Type Locality: “Northern California, Sisson, Cal.” (Mount Shasta City, Siskiyou County, California).

**Records: California: Fresno County:** Sierra Nevada foothills: Lost Lake Park along San Joaquin River 12 Sep 2003 & 7 May 2004 (KD); below Friant Dam along San Joaquin River 20 Mar 2004 (KD); Kings River below Pine Flat Dam 28 Mar & 23 Apr 2011 (KD). **Kern County:** Kern River at Hart Park 4 Aug 1970; 8 Aug to 13 Oct 1985 (KD) and 20 Mar to 24 May 1986 (KD). These were transient colonies and there are no recent records. **Mariposa County:** Jerseydale 19-20 June 1997 (AOS). **Nevada County:** Lang Crossing 5000' 30 Aug 1985 (AMS). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 12 July 2012 (SFSU - BSNC). **Tulare County:** Springville 28 May 1989 & Three Rivers 13 Apr 1990 (KD); Kaweah River at Hwy 26, 6 Sep 1985 (KD). **Nevada: Douglas County:** Kingsbury Grade, Carson Range 5 May 1987 (GTA), determined by genitalia, but subspecies may not be *sissona*.

**Distribution: California:** Fresno, Kern, Mariposa, Nevada and Tulare counties. **Nevada:** There is a record for Douglas County for the species. This species has also been reported as being common in Inyo County in the Owens Valley, but these may be based on confusion with *Cupido amyntula* and may be outside my arbitrary boundary of the Sierra Nevada.

**Habitat:** This species is usually found in wet edges of the smaller creeks or rivers but is quite common in places in the flood plains along the Kings and San Joaquin Rivers in the Sierra Nevada foothills. It is sometimes found in alfalfa fields and along canal banks.

**Flight:** Late March to mid-October.

#### 111. Western Tailed Blue—*Cupido amyntula* (Boisduval, 1852).

There are two subspecies in the Sierra Nevada or in nearby west slope foothills.

##### a. Western Tailed Blue—*Cupido amyntula* (Boisduval, 1852).

**Taxonomic notes:** Long placed in the genus *Everes*. This species is often confused with the **Eastern Tailed Blue** (*Cupido comyntas*).

**Sierra Nevada Type Locality:** Bucks Lake Road at White Creek, 2 road miles W of Quincy, Plumas County, California.

**Records: California: Fresno County:** Shaver Lake 3 & 8 July 2002 (RE). **Inyo County:** Formerly found in Nine Mile Canyon in April and May but there have been no records there in many years. **Kern County:** Walker Pass 29 Apr 1993 (KD), but no recent records there. **Madera County:** Coarsegold 3 July 1991 & Oakhurst 12 June 1992 (KD); Nelda Grove Rd between Sugar Pine and Fresno Dome 14 June 2003 (Adam Winer). **Mariposa County:** Jerseydale 30 May 1959 (JWT); 3 mi W of El Portal 11 Apr 1964 (PAO). **Nevada County:** Lang Crossing 5000', 8 Aug 1995 (AMS). **Tulare County:** Dry Creek Rd near Kaweah River 6 May 1979 (PN) and Three Rivers along Kaweah River 13 Apr 1990 (seen, KD). **Tuolumne County:** 1 mi E of Mather June-July (AOS). **Nevada: Carson City County:** Carson Range, Nv. 28, 2 mi S of Washoe County line 1 July 1985 (GTA). **Douglas County:** Carson Range, US 50, Montreal Canyon, 17 June 1986 (GTA). Note: these records were reported as nominotypical *amyntula* (Austin & Leary 2008), Austin (1998b) stated *amyntula* from lower and middle elevations in the

Carson Range are the same as nominotypical *amyntula*, those higher are presumably *montanorum*.

**National Park Records: Yosemite NP: Tuolumne County:** Hetch-Hetchy Summit 13 July 1956 (JSG, seen).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Tulare, Tuolumne and Yuba counties. This subspecies is very rare in the Sierra Nevada in Inyo, Kern and Tulare counties. **Nevada:** Carson City and Douglas counties.

**Habitat:** Upper Sonoran and Transition Life Zones. Historically, this subspecies occurred at Walker Pass in Kern County in foothill woodland and in Nine Mile Canyon in Mojave Desert plant communities and in Juniper woodland but appears extirpated now in those locations, likely because of long-term drought.

**Flight:** April-early August.

**b. Mountain Tailed Blue—*Cupido amyntula montanorum* (Austin, 1998).**

**Taxonomic notes:** The adults of this subspecies are relatively small. Males are duller in color than nominotypical *amyntula* or Great Basin subspecies *herri* F. Grinnell. Females are duller brown, usually with less blue and the marginal pattern of the hindwing is more poorly developed (Austin, 1998c).

**Sierra Nevada Type Locality:** Carson Range: Tahoe Meadows, Nevada State Route 431, 2.4 road miles southwest of Mt. Rose Summit, 2590 m, Washoe County, Nevada.

**Records: California: Inyo County:** SF Bishop Creek 8300'-8700' 8 July 1979; 23 June 1986 & 8 May 1997 (KD); Pine Creek Canyon 30 May 1999 (KD). **Fresno County:** Millerton Lake 8 July 2002 (RE). **Mono County:** Ridge E above Saddlebag Lake 16 & 18 July 1973 and 6 Aug 1978 (KD); Trail SE side Saddlebag Lake 10 July 2004 (KD); sagebrush hills SE of Sonora Pass 10,000' 9 Aug 1998 (KD); Virginia Canyon 12 June 1996 (BRB).

**Distribution: California:** Alpine, El Dorado, Inyo, Mono and Tuolumne counties. **Nevada:** Washoe County.

**Habitat:** This blue occurs in Canadian and Hudsonian Life Zones in rocky areas, sagebrush scrub or near grassy swales. This subspecies is usually found in the Sierra Nevada "High Country" and in wet meadows in more level areas on the Sierra Nevada east slope. An exception was Pine Creek Canyon near Rovana at about 5000' elevation.

**Flight:** May-August.



**112. Echo or Western Azure—*Celastrina echo*** (W. H. Edwards, 1864).

**Taxonomic notes:** While azures in the eastern United States have been under serious study, those in the West have not been. The azure given the name “*echo*” is believed by many to be a species that does not occur in the East. Similarly, the Arizona Azure *cinerea* has not been studied but many believe it is conspecific with *echo*. While it is believed east slope azures in Inyo and possibly Mono Counties are the same as Arizona *cinerea*, no one really knows, so the arrangement here is tentative.

**a. Echo Azure—*Celastrina echo*** (W. H. Edwards, 1864).

This is a very common blue, so no general records are given.

**Type Locality:** California: neotype from San Francisco, San Francisco County, California.

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 17 May 1985 & 28 Feb 1986 (KD); Potwisha and Hospital Rock 28 Feb & 18 Apr 1986 (KD); Buckeye Flat 28 Feb & 18 Apr 1986 (KD); Four Guardsmen 29 June 1987 (KD); Crystal Cave 27 June 1987 (KD); Tokopah Falls Trail 12 June 1990 (KD) and Giant Forest Village 27 June 1987 (KD). **Yosemite NP: Mariposa County:** Crane Flat 3 July 1954 (JWT); Tamarack Flat 24 June 1959 (JSG); Badger Pass and Bridalveil Creek 23 June 1959 (JSG). **Tuolumne County:** Aspen Valley 14 July 1956 (JSG)

**Distribution: California:** All counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Sonoran, Transition and Canadian Life Zones. This common blue occurs in foothill woodland, riparian areas, mixed coniferous and coniferous forests and meadows. Males frequently mud puddle at wet spots, often along streams.

**Flight:** Late February to early August, occasional records after that.

**b. Arizona Azure--*Celastrina echo cinerea*** (W. H. Edwards, 1883).

**Taxonomic note:** To date, no one has studied the azure populations on the east side of the Sierra Nevada or the California desert mountain ranges or *cinerea* from Arizona to really know if the name *cinerea* applies to the Sierra Nevada populations. It is also possible *cinerea* may be another species than *echo*.

This blue is included in the Sierra Nevada fauna based on Emmel & Emmel’s (1963) statement: “This race is found in the mountain ranges of the eastern Mojave Desert and north along the east slope of the Sierra Nevada. It tends to be smaller and rather darker.”

**Type Locality of *cinerea*:** “Arizona” implied to be the vicinity of Fort Grant, Cochise County and on Graham Mountain by Clench.

**Records: California: Inyo County:** There are many records for Lone Pine Creek and the Whitney Portal area north to Pine Creek Canyon. **Kern County:** Rare azures seen in the Kelso

Valley-Sageland area may or may not be *cinerea*. **Mono County:** Lower Rock Creek 14 May; 24 June & 6 July 2006 (KD); Hot Creek E of Mammoth 14 May 2006 (KD).

**Distribution: California:** Inyo, Kern? and Mono? counties. It is not clear where “*cinerea*” reaches its northern limits in the Sierra Nevada, or even if what I am calling *cinerea* from California (including both the Sierra Nevada and desert ranges) is the same biological butterfly known from Arizona and other southwestern states. Mono County records are provisional.

**Habitat:** Streamsides in Sierra Nevada east slope canyons and drainages. Adults frequently mud puddle, often along streams.

**Flight:** March to July.

**113. Ceraunus Blue—*Hemiargus ceraunus gyas*** (W. H. Edwards, 1871).

This small Mojave Desert species may not be a resident in the Sierra Nevada, but a regular migrant or stray that establishes transient colonies.

**Type Locality:** Arizona, neotype from Tucson, Pima County, Arizona.

**Records: California: Inyo County:** Whitney Portal 18 June 2006 & 27 July 2018 (KD); common lower Nine Mile Canyon 23 & 30 Apr and 18 May 2019 (KD); upper Nine Mile Canyon 6 July 1983 (KD); Lubken Canyon S of Lone Pine, just west US 395, 10 Sep 2005 & 8 June 2019 (KD); SF Bishop Creek 8000-9000', common 27 July 2019 (KD). **Kern County:** Kern River Valley: Onyx 30 Aug 1986 (KD); Wofford Heights 8 July 2001 (KD); breeding in numbers at Hanning Flat after high lake levels receded creating high legumes growth 12, 16 & 22 Sep 2001 (KD); Piute Mountains, E slope 3 mi W of Sageland on Piute Mtn. Rd. 25 Sep 2009 (KD); 2-3 mi S of Bodfish 21 May 1979 & 10 Sep 1988 (KD). **Mono County:** Mouth Lee Vining Creek into Mono Lake 28 Aug 2015 (KN); Warren Bench 9800' 29 July 2019 (KN), NW of Mono Lake near mouth Lundy Cyn. 25 Aug 2019 (KN). **Tulare County:** Freeman Creek Grove 16 July 1983 (KD); Chimney Peak Rd N side Lamont Peak on road cuts 6 July 1983 & 20 June 1992 (KD); ridge 7 mi S Kennedy Meadows 18 June 2007 (KD); Sherman Pass Rd, Alder Creek 6800' 11 July 2007 (KD).

**Distribution: California:** Inyo, Kern, Mono and Tulare counties.

**Habitat:** Dry slopes with a variety of legumes utilized by the larvae. This species is usually found in the Lower and Upper Sonoran Life Zones, but it can stray into Transition Life Zone and Giant Sequoia Groves.

**Flight:** March-October.

**114. Sonoran Blue--*Philotes sonorensis*** (Felder & Felder, 1865): Sierra Nevada segregate.

This California endemic (in the USA) is believed by many to be the most beautiful blue with its cyanic blue coloration with reddish blotches that can be seen 50 yards or more away. It is a great favorite with collectors, photographers and watchers. Since it tends to occur on canyon walls and slippery slopes, it is also a risky butterfly to pursue.

**Type Locality** for the nominotypical *sonorensis*: La Tuna Canyon 1200' elevation, Verdugo Mountains, Los Angeles County, California.

**Records: California: Amador County:** Salt Springs Reservoir Rd 3500' 4 Apr 1979 (RLL/REW). **Calaveras County:** S Railroad Flat 2600' 5 Apr 1979 (REW); Hunter Dam Rd 18 Mar 2001 (JRM). **El Dorado County:** 7 mi NE Placerville 7 Feb 1971 (RLL); Placerville 26 Feb 1968 (David Bauer). **Kern County:** Indian Wells Canyon 6968' (E slope of the Sierra Nevada) 23 Feb 2002 (SS); Chimney Peak Rd 3.7 mi NE of SR 178 in side canyon 21 & 28 Mar 2003 (KD). Piute Mountains: Laura Peak N slope above Erskine Creek Canyon 28-29 Mar and 14 Apr 1987 (KD); 4 mi W of Sageland on Piute Mtn. Rd, on rocky hill 12 May 2005 (BSD); 16 Apr 2010 (KD & David Horner). **Mariposa County:** 4 mi N of Bear Valley 15 Apr 1961 (PAO); near Jerseydale along Skelton Creek 29 Mar 1970 (JFE/AOS); Briceburg along Merced River 10 Mar 1979 (KD). **Nevada County:** S Yuba River Lang Crossing 26 Feb 1991 & 16 Feb 2015 (AMS). **Placer County:** American River, 4 mi upstream from Auburn 31 Jan 1976 (REW); 3 mi SE of Auburn 13 Feb 1988 (RLL); Yankee Jim's Rd 1-3 mi W of American River 20 Mar 1997 (V/L). **Sierra County:** S Yuba River at Washington 2650' 24 Mar 1984 (RLL/DP). **Tulare County:** Rocky canyon near Lamont Meadows off Chimney Peak Rd 10 Apr 1985 and 13 Apr 1994 (KD); 0.8 mi E Chimney Peak Camp 13 Apr 1994 (KD); Sherman Pass Rd E of Kern River in rocky side canyon 4900' 27 Jan 2014 (KD), 6 individuals EARLY and at a locality believed extirpated! They have been seen again many times since so site has recolonized. **Tuolumne County:** 3 mi NE of Tuolumne City 2400' 20 Feb 1965; 23 Mar 1966 and 24 Mar 1978 (RLL/H Koopmann); Basin Creek NF Tuolumne River 18 Mar 1972 (JRM).

**Distribution: California:** Amador, Calaveras, El Dorado, Kern, Mariposa, Nevada, Placer, Sierra, Tulare and Tuolumne counties.

**Habitat:** Rocky Canyons with various stonecrops, often near streams.

**Flight:** Usually mid- February-April but sometimes as early as late January.

### 115. Small Blue—*Euphilotes (Philotiella) speciosa* (Hy. Edwards, 1877)

**Taxonomic notes:** This species had been placed in *Philotes* or *Philotiella*, but was placed with *Euphilotes* following genome research in by Zhang, Cong, Shen, Opler and Grishin (2019a & b).

There are two subspecies that occur in the Sierra Nevada. This is one of the smallest butterflies in North America and difficult to follow in flight, hence easily overlooked.

**a. Small Blue -- *Philotes (Philotiella) speciosa speciosa*** (Hy. Edwards, 1877).

**Sierra Nevada Type Locality:** Havilah, Kern County, California.

**Records: California: Inyo County:** Lubken Canyon just W of US 395, S of Lone Pine in ravines of barren looking north facing slopes 7 May 1992 (KD); 25 Apr 2005 (KD) & 30 Apr 2017 (KD & MW); Alabama Hills W of Lone Pine near Movie Rd 25 Apr 2005 (BSD). **Kern County:** Just E of Walker Pass 31 May 2003 (SS); E side Piute Mountains near Sageland 22 Apr

1984 (JGP). **Tulare County:** Cherry Hill Rd S of Jct with Sherman Pass Rd at 4700' 14 June 1977 (JB).

**Distribution: California:** Kern and Inyo counties.

**Habitat:** Barren looking rocky slopes with thin layers of soil in Mojave or Great Basin Desert terrain.

**Flight:** Late April-May.

**b. Boharts' Small Blue -- *Philotes (Philotiella) speciosa bohartorum*** (Tilden, 1969).

This subspecies has not been found or collected since 1970. Since California has put *bohartorum* on its threatened butterflies of concern list, it is not likely anyone will go looking for it.

**Sierra Nevada Type Locality:** Briceburg, Mariposa County, California.

**Records: California: El Dorado County:** Large canyon W below Chili Bar, 6.5 km N Placerville 14 Apr 1974 (seen, AOS). **Fresno County:** Hume Lake (JSG, no date). **Mariposa County:** Mariposa 30 May 1932 (G & R Bohart); Briceburg 3 June 1938 (R Bohart); Merced River at Briceburg 23-24 Apr 1966 (JL/RES); ¾ mi. E of Briceburg 11 Apr 1970 (JRM/AOS); along Merced River at El Portal 4 May 1968 (KCH & Jan Hughes, JL).

**Distribution: California:** El Dorado, Fresno and Mariposa Counties, but the true distribution of this butterfly is unknown.

**Habitat:** The few adults found have been found mostly along streams in the Upper Sonoran Life Zone. No one really knows where to look for this blue in the Sierra Nevada and no one knows what the hostplant might be.

**Flight:** Late April to early June.

**116. Square-spotted Blue--*Euphilotes battoides battoides*** (Behr, 1867).

**Taxonomic notes:** Twenty years ago, the names *bernardino* and *glaucon* represented *battoides* subspecies, but field observations and collecting show that several entities in this group can overlap ranges and even fly at the same time using different buckwheat hosts. The work of Oakley Shields, John F. Emmel and Gordon Pratt helped us to understand the complexities and difficulties of this group better. Yet, many issues remain to resolve in this species complex and *Euphilotes* in general.

**Sierra Nevada Type Locality:** Headwaters of the San Joaquin River 11,000' from near Mono Pass 12,000 NW Inyo County, California.

**Records: California: Fresno County:** Kaiser Crest 9800-10300' 12 June to 18 July 1930 (LMI). **Inyo County:** Mono Pass 2 Aug 1961 (RES); 30-31 Aug 1965 (PAO); John Muir Wilderness, Mosquito Flats 13 July 1990 (Howard Grisham collection). **Mono County:** Minaret

Summit, 8965', Inyo National Forest 17 July 2019 (PAO-EBO). Mono Pass 2 Aug 1961 (RES); NE slope Mt. Dana, Glacier Canyon 9800', 5 July 1981 (RLL); rocky outcrops below Saddlebag Lake Dam 5 July 1989 (KD) and Saddlebag Lake 10,050', 28 June & 11 July 1981 (RLL); Tioga Rd at Warren Creek 9000' 3 July 1989 (KD). **Tulare County:** Granite Domes and ridges near Big Meadow (near Kings Canyon NP) 23 June 1989 (KD).

**National Park Records: Kings Canyon NP: Fresno County:** Bullfrog Lake 10,634' August (NC); Pacific Crest Trail 10,500' 2 July 2012 (EL). **Tulare County:** John Muir Trail 10,300' to 10,500' 2 July 2012 (EL). **Sequoia NP: Tulare County:** Mineral King 8 July 1915 (JAC); Timber Gap above Mineral King 11 Sep 1983 (PN); Mineral King, White Chief Trail at 10,000' 23 July 1992 (KD); Alta Meadow 8 July 1960 (J. H. Gerdes); Monarch Lake above Mineral King in July (AOS). **Yosemite NP: Mariposa County:** Mt. Hoffman 14 July 1957 (AOS); Vogelsang Peak 23 July 1958 (JWT) & Vogelsang Pass 3 Aug 1958 (AOS). **Tuolumne County:** Gaylor Lakes Trail 16 Aug 1952; 6 Aug 1953 and 3 Sep 1958 (JWT); Cockscomb Peak 26 July 1958 (AOS); Helen Lake 18 to 29 July 1958 (AOS); Crest W of Tioga Pass 25 June 1961 & 8 Aug 1962 (AOS)

**Distribution: California:** Alpine, Amador, Calaveras, Fresno, Inyo, Madera? Mariposa, Mono, Sierra, Tulare and Tuolumne counties. Plumas and Placer County records may actually refer to *glaucou* while those were considered a *battoides* subspecies (but see under *E. glaucou*.)

**Habitat:** The Hudsonian and Arctic-Alpine Life Zones in the Sierra Nevada on rocky, pumice, or sandy soils associated with various buckwheat host plants, usually *Eriogonum marifolium*.

**Flight:** Late June to early September, depending on timing of snowmelt and seasonal weather conditions.

### 117. Glaucou Blue—*Euphilotes glaucou* (W. H. Edwards, 1871).

**Taxonomic notes:** Pratt & Emmel (1998a) treated *glaucou* as a subspecies of *Euphilotes battoides*. Others have recognized *glaucou* as a species-level taxon and is so recognized in the Pelham Catalogue. Readers are free to choose which arrangement seems best. Gordon Pratt (pers. communication) believes the entities *intermedia* and *comstocki* should be recognized as a species different from *battoides* or *glaucou*. Evidence of that can be found in the Whitney Portal area east of Mt. Whitney where both *australoglaucou* and *comstocki* occur on different *Eriogonum umbellatum* subspecies with *australoglaucou* flying first, then *comstocki*, some days or weeks later. Warren (2005) did not accept *glaucou* is a *battoides* for reasons given in his Oregon book and Mattoni (1989) gave reasons why *intermedia* cannot be a *battoides* because they are sympatric at Gold Lake.

#### a. Glaucou Blue--*Euphilotes glaucou* (W. H. Edwards, 1871).

**Near Sierra Nevada Type Locality:** Nevada: Storey County; near Virginia City.

This is a difficult subspecies to plot out distribution records by county because until recently, records of *glaucou* were marked down as "*battoides*." In addition, records of "*battoides*" in other

counties may refer to *intermedia*, so I largely follow (Shields (1977) in assessing such county distributions which was not done in Pratt & Emmel's revision of the *Euphilotes*.

**Records: California: Mono County:** Near Lundy Lake Dam 4 July 1959 (RES/PAO and Nora Opler) & 26 June 1999 (KD); E of Tioga Pass at Warren Creek 21 July 1958 (AOS); Green Canyon 10 June 1996 (BRB); Little Antelope Canyon 14 June 1996 (BRB); Hot Creek fishing area near Mammoth Lakes Airport 6 July 2009 (KD); this is the southern-most known locality for nominotypical *glaucou* but further exploration could extend the range southward.

**Distribution: California:** Alpine, El Dorado, Mono, Placer and Plumas (?) counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Dry sandy soils on the east slope of the Sierra Nevada east into the Great Basin. Adults tend to stay close to the hostplant, but avidly visit wet spots, sometimes some distance from the host.

**Flight:** Mid-May to mid-July.

**b. Southern Glaucou Blue--*Euphilotes glaucou australoglaucou*** Pratt & J. Emmel, 1998.

**Taxonomic notes:** This subspecies was split from nominotypical *glaucou*, differing by being more lightly marked dorsally and having cyanic blue over scaling in females.

**Sierra Nevada Type Locality:** East slope of the Sierra Nevada, Independence Creek, 6,300', Inyo County, California.

**Records: California: Inyo County:** Gray's Meadow Camp W of Independence 20 June 1977 (JFE) very near a population of *E. bernardino inyomontana* on a different host buckwheat the same day; Bishop Creek near Andrew's Camp 7000' 17-18 May 1993 (KD); SF Bishop Creek near Bishop Creek Lodge 17 June 2004 and at 8700' nearby 27 July 2019 (KD); Whitney Portal area in May (E/P); Pine Creek Canyon on *E. umbellatum* 23 May 2011 (KD). **Mono County:** Tom's Place 22 June 1986 (KD); Lower Rock Creek Gorge 20 May 1987 & 12 May 1989 (KD); Sherwin Summit US 395 18 May 1970 (AOS).

**Distribution: California:** Southern Mono and Inyo counties. In the original description the range limits given were near Lone Pine at the south end on the east slope of the Sierra Nevada and the northern range limit was given as Sherwin Summit near US 395. There was a range gap between Sherwin Summit and Mono Lake but since 1998 many colonies of *glaucou* have been found between those two localities (Hot Creek E of Mammoth and Mammoth Airport) and eastward not in the Sierra Nevada on roads to McGee Canyon and Taylor Springs.

**Habitat:** Dry slopes on sandy soils with *Eriogonum umbellatum* on the east side of the Sierra Nevada within Pinyon Pines and sagebrush.

**Flight:** Mid-May to June, one extreme record for 27 July 2019 (a female with blue over scaling with others seen) given above.

**c. Intermediate Blue**—*Euphilotes glaucon intermedia* (Barnes & McDunnough, 1917).

**Taxonomic notes:** See comments above under *E. battoides* and *E. glaucon*. This blue may warrant the name *E. intermedia* (Gordon Pratt, pers. comm.).

**Type Locality:** Shasta County: California (presumably the vicinity of Castella in the Upper Sacramento Valley)

**Records:** **California:** **Alpine County:** Trail above Clark Fork Rd, meadow at end of road 27 July 2010 (David Bartholomew). **Fresno County:** Fresno Dome Trail Saddle 19 June 2014 (SR). **Nevada County:** Frog Lake 8000' 19 July 1980 and Castle Peak 8500' 26 July 1980 (both, RK). **Plumas County:** Frazier Falls Road, Plumas National Forest 28 June 2017 (SFSU – BSNC). **Sierra County:** Gold Lake 15 July 1935 (LACM); Packer Saddle, Tahoe National Forest, 22 June 2016 (SFSU-BSNC). **Tuolumne County:** Barren looking hill about 1 mi S of SR 108 off Eagle Meadow Rd 7 & 8 July 2009 and 22 July 2015 (KD). **Nevada:** **Washoe County:** Carson Range, W of Mt. Rose summit 25 July 1980 (GTA) and ski area 10 July 2003 (GTA); Carson Range, Nv 431, 1.1 mi E of Mt. Rose summit 18 July 1983 (GTA).

**Distribution:** **California:** Alpine, Calaveras, El Dorado, Madera, Nevada, Placer, Plumas, Sierra and Tuolumne counties. This list of counties is tentative because of problems identifying members of the *battoides* group. The above records seem valid.

**Habitat:** Rocky slopes or volcanic rock slopes with *Eriogonum umbellatum* off the Eagle Meadow Road just south of the Sonora Pass Rd.

**Flight:** Late June-July.

**General:** The similar looking **Ancilla Blue** in the Sierra Nevada tends to mimic this blue's markings wherever the two occur together. I have collected similar looking *Euphilotes* in the Sierra Nevada in the Tioga Pass area, the south fork of Bishop Creek and even in Nine Mile Canyon in Inyo County that resemble *intermedia* and are associated with their commonly shared hostplant, but the Nine Mile Canyon records were in April, too early to be this species.

**d. Comstock's Blue**—*Euphilotes glaucon comstocki* (Shields, 1975).

**Taxonomic notes:** See comments under *E. battoides*. This blue may warrant the name *E. intermedia comstocki*. An interesting thing with scientists examining *comstocki* specimens is that some lack *battoides* genitalia and appear to be in the *enoptes* or *dammersi* groups. There is too little material that has been examined to draw conclusions as to identity.

**Type Locality:** Tehachapi, Kern County, California.

**Records:** **California:** **Inyo County:** Upper Nine Mile Canyon on *Eriogonum umbellatum* 5 Aug 2008 (KD, scarce); E of Whitney Portal on *Eriogonum umbellatum* 27 July 2018 (KD). **Kern County:** Greenhorn Mountains: Just S of Tiger Flat 6300' 22 July and 4 Aug 2000 (KD). Piute Mountains: Piute Mountain Rd MP 6.1 to 7, from Bodfish-Havilah Rd. summit on *Eriogonum umbellatum* 17 July 2000 (KD). Note: Immediately below this elevation at MP 6, *Eriogonum*

*umbellatum* was absent and replaced by *Eriogonum fasciculatum* and *Euphilotes bernardino* which uses that buckwheat as a larval host. **Tulare County:** Greenhorn Mountains: Old State Rd 4500'-5000' 8 July 2001 (KD) and 1 mi E. Black Mtn. Saddle 23 July 2001 (KD); E of Kern River at Alder Creek 6800', Sherman Pass Rd associated with *E. umbellatum*, both colonizing this site after 2002 fire 5 July 2009 and many subsequent records (KD); Sherman Pass Rd W of Pass 7800-8000' at rocky outcrops 12 June 2012 (KD); Cherry Hill Rd off Sherman Pass Rd from lower Alder Creek bridge to 5 mi south, abundant 12 July 2017 (KD); Bald Mountain Lookout area 9260- 9360'' 24 July & 5 Aug 1982 (KD).

**Distribution: California:** Inyo, Kern and Tulare counties. Once believed to be one of the rarest butterflies of North America, we now know this butterfly is widespread within three counties and can be very abundant within its limited range in the southern Sierra Nevada. These blues are highly localized near their larval host and seem to be expanding their range even at lower elevations following wildfires.

**Habitat:** This butterfly replaces *Euphilotes bernardino*, usually at higher elevations where *Eriogonum umbellatum* replaces *Eriogonum fasciculatum* as the dominant buckwheat in the Upper Sonoran, Transition and lower Canadian Life Zones. Localities for this blue are in foothill woodland, sagebrush scrub and chaparral, mixed coniferous forests and in rocky outcrops 8000' to 9400' on the Sherman Pass Road west below Sherman Pass as low as Cherry Hill Rd below 6000' and Bald Mountain E of that Pass and rocky slopes around Bald Mountain summit above 9300' and similar habitats at Piute Mountain Vista in the Piute Mountains. The Greenhorn Mountain localities are rather different and have suffered recent wildfires, but at least the Old State Road colony is recovering. The recent Cedar Creek Fire burned the Tiger Flat colony site very badly and it needs to be monitored for recovery there.

**Flight:** Mid-June to mid- August.

### **118. Bernardino Blue—*Euphilotes bernardino*** (Barnes & McDunnough, 1916).

**Taxonomic notes:** This blue (as now known as subspecies *inyomontana*) was recognized as a different species than *battoides/glaucon* because of consistent pattern differences and distributional data with *E. glaucon australglaucon* west of Independence on the east side of the Sierra Nevada (Mattoni, 1988(1989) and Davenport 2002a and b). Since then, *bernardino* has been found to also co-occur at several of the same localities together in the Piute and Greenhorn Mountains (Sierra Nevada subranges) and on the Kern Plateau with *E. glaucon comstocki*.

**a. Bernardino Blue--*Euphilotes bernardino bernardino*** (Barnes & McDunnough, 1916). This common species can often be recognized by its small size and bold black spotting pattern on the ventral side.

**Type Locality:** Camp Baldy, San Gabriel Mountains, Los Angeles County, California.

**Records: California: Kern County:** South end Kern Plateau, Fay Creek N of Weldon 14 June 1980 (KD); Greenhorn Mountains: mouth of Kern River Canyon near Bakersfield 31 May 2002



(KD); Kern River at Upper Richbar 21 May 1989 (KD); Old State Rd near Wofford Heights 20 June 2002 (KD); Kernville 20 & 27 May 2000 (KD); Piute Mountains 2-3 mi S of Bodfish 29 May 1979 (KD). **Tulare County:** Upper Kern River Canyon N of Kernville at Calkin's Flat 12 June 1999 (KD); south of Corral Creek 4 June 2003 (KD); S of Johnsondale 12 June 1981; 6 & 18 June 1983 (KD); Sherman Pass Rd E of Kern River up to 5400' 18 June 1983 & 9 July 1988 (KD); Ant Canyon E of Kern River 22 May 2012 (KD).

**Distribution: California:** Kern and southern Tulare counties.

**Habitat:** Drier canyons and mountain ranges where the *Eriogonum fasciculatum* host grows. Adults can be very abundant in close association with their hostplant when in bloom.

**Flight:** Late May to mid-July.

**b. Inyo Mountains Bernardino Blue—*Euphilotes bernardino inyomontana*** Pratt & J. Emmel, 1998.

**Taxonomic note:** This subspecies is intermediate in the size of the orange-red aurora on the upperside hindwings between nominotypical *bernardino* and the eastern Mojave Desert subspecies *martini* (Mattoni, 1954).

**Type Locality:** California: Inyo County; Panamint Range, S end; ridge just above Wood Canyon, 1,500'-1,700' m elev., 1.3 km NNW of Manly Peak.

**Records: California: Inyo County:** Upper Nine Mile Canyon 6 July 1983 & 18 May 2003 (KD); lower Nine Mile Canyon 18 May 2019 (KD); base of Whitney Portal and the back dirt road (not safe for cars but a short walk) that goes down to Lone Pine Creek Canyon 8 June 2019 (KD). **Kern County:** Jawbone Canyon 26 May 1978 (KD); Chimney Peak Rd S of Lamont Peak 31 May 1977 (MS); 25 June 1982 & 4 July 1983 (KD); Sageland area N Kelso Valley 14 & 26 May 1978 and 17 June 1997 (KD); Birdspring Pass 28 May 2006 (KD); Butterbrecht Peak 8 July 1982 (KD) and Walker Pass 31 May 1997 (MS). **Tulare County:** Chimney Peak Rd N side of Lamont Peak 25 June 1982 and 4 & 6 July 1983 (KD).

**Distribution: California:** East slope of the Sierra Nevada in Inyo, Kern and Tulare counties where they meet the Mojave Desert with some populations reaching westward where it meets nominotypical *bernardino*. The 1991 Season Summary reports that *bernardino* was found as far north as Bishop on the east slope of the Sierra Nevada (W. D. Patterson).

**Habitat:** Mojave Desert plant associations, Juniper woodland and sagebrush-covered slopes where *Eriogonum fasciculatum* (the larval host) grows. Lone Pine Creek near Whitney Portal and Nine Mile Canyon in Inyo County are classic localities for this subspecies.

**Flight:** Mid-May to early July.

**119. Mojave Blue**—*Euphilotes mojave mojave* (Watson & Comstock, 1920).

**Taxonomic notes:** Several lepidopterists have objected to considering this blue a full species instead of an *enoptes* subspecies. Host plant preferences and sympatry with other members of the *enoptes* group argue for its separation. In the spring Mojave Blues can fly with *enoptes* and *langstoni* in the same canyons and ravines at the same time on different buckwheat hosts in Mojave Desert plant communities in the Kelso Valley-Butterbrecht Peak region in Kern County and with *langstoni* in Nine Mile Canyon, Inyo County.

**Type Locality:** Mojave Desert, probably near Randsburg, Kern County, California.

**Records:** **California:** **Inyo County:** Carroll Creek 14 May 1969 (PAO); Lower Nine Mile Canyon 26 May 2001; 4 & 27 Apr 2003 (KD). **Kern County:** N Kelso Valley in the Sageland area 2 & 4 May 1976 (JB); 26 Apr 1979; 25 Apr 1980 and 29 Apr 1993 (KD); Butterbrecht Peak area in lower canyons 13 & 20 Apr 1977 and 15 Apr 1989 (KD); 2 mi NW of Birdspring Pass 13 May 2001 (KD).

**Distribution:** **California:** Inyo and Kern counties. This is actually a Mojave Desert species that reaches the Sierra Nevada only at the southern and eastern edges of the Sierra Nevada. Some apparently consider Mojave Blues a threatened species in California because it has not been seen in numbers in recent years, but like most desert species, flights and numbers depend on good winter and spring rainfall. California has been suffering from long term drought. What effect this may have had with this species may be seen when good rainfall years return.

**Habitat:** Mojave Desert hills and canyons or in similar plant communities in the areas where the Sierra Nevada meets the Mojave Desert.

**Flight:** April-May.

**120. Dotted Blue**—*Euphilotes enoptes* (Boisduval, 1852).

Also known as the **Pacific Dotted Blue**.

**Taxonomic notes:** This is a very difficult species complex to identify which *Euphilotes* entity is involved. When Oakley Shields was writing his series of papers on the *Euphilotes* over 30 years ago, it was believed that *enoptes* had several host plant races which were treated as different subspecies, but field data, chemical studies and observations in the field argues treating at least some of these hard to identify butterflies as separate species.

**a. Dotted Blue**—*Euphilotes enoptes enoptes* (Boisduval, 1852).

**Taxonomic notes:** This subspecies has relatively bold spots on the ventral side and males have broad black borders above.

**Sierra Nevada Type Locality:** Hwy 70 between Gansner Bar and Queen Lily Campground near Belden, North Fork Feather River Canyon, Plumas County, California.

**Records: California: Madera County:** Big Creek upstream from Fresno Dome Camp 1-2 July 1996 & 10 July 1999 (KD). **Mono County:** Saddlebag Lake 21 June 1986; 5 July 1989 and E above the lake 18 July 1973 and 31 July 2004 (KD); slope N of Tioga Pass 21 June 1986 (KD); Warren Creek E of Tioga Pass 3 to 5 July 1989 (KD). **Plumas County:** Mills Peak Road, SW of Lookout, Plumas National Forest 3 July 2007 (SEABA-C). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20 June 2005, 19 June 2006 (SFSU-BSNC); Forest road 54, S of Bassetts, Tahoe National Forest 5 July 2007 (SEABA-C); Wild Plum Road, Sierra City 29 June 2019 (PAO-EBO). **Tulare County:** Hillside above Woodward and Stony Creeks 29 June 1987 (KD); Boulder Creek E of Big Meadow near KCNP 28 June 2003 and 30 June 2017 (KD); Big Meadow near Kings Canyon NP 28 June 2003 (KD).

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 17 May 1985 (KD); Timber Gap Trail above Mineral King 11 Sep 1983 (PN) and 22 July 1991 (KD); White Chief Trail above Mineral King 23 July 1992 (KD); Elk Creek along middle fork 19 May 1979 (PN). **Yosemite NP: Mariposa County:** Yosemite Valley 17 June 1932 (JWT); trail from Camp Curry to Glacier Point 9 July 1933 (JSG); Tenaya Canyon 11 July 1958 (AOS). **Tuolumne County:** Tioga Pass 16 July 1952 (JWT); Smoky Jack 4 July 1954 (JWT).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties. The southern limit in the Sierra Nevada for nominotypical *enoptes* appears to be the Mineral King area.

**Habitat:** This is a very common and widespread species which occurs on dry or rocky soils with the *Eriogonum nudum* buckwheat hosts even in forested areas from the Upper Sonoran to the Hudsonian Life Zones.

**Flight:** Mid-May to mid-September.

**b. Dotted Blue—*Euphilotes enoptes tildeni*** Langston, 1964.

**Taxonomic notes:** This subspecies with narrower black borders above in the males can have spring or fall flights, individuals are not uncommonly observed even during the summer months. Possibly more than one entity is involved on the Sherman Pass Road as more than one species or varieties of buckwheats in the *Eriogonum nudum* group are involved, both white and yellow flowered varieties.

**Type Locality:** Del Puerto Canyon, 22 miles west of Patterson, Stanislaus County, California.

**Records: California: Kern County:** Greenhorn Mountains: S of Tiger Flat 15 to 29 July 2000 (KD) and Baker Ridge 26 June 1981 & 3 July 2004 (KD); Sawmill Rd 3-4 mi W of SR 155, 27 May & 11 Sep 2000; 28 Apr 2002 (KD); Old State Rd 24 June 1995 & 20 June 2002 (KD); Chimney Peak Rd 1 mi S Lamont Peak 6 Oct 2001 (KD). Piute Mountains: Hooper Hill 31 Aug to 10 Sep 1979 & 27 Aug 1982; Erskine Creek Canyon on roadside rocky outcrop 11 Sep 2000 (KD) **Tulare County:** Johnsondale area 6 & 18 June 1983; 21 May 1990 (KD); Sherman Pass

Rd E of Kern River 4000'-9000' 20 June 1980; 18 June 1983; 3 July 2016; 11 Aug 2016; 1 Sep 2003 and 2 Aug 2014 (KD); near Needle Rock on Lloyd Meadows Rd 25 June 1981 and S of Corral Creek along Kern River 4 June 2003 (KD); Greenhorn Mountains: Baker Ridge 26 June 1981 & 17 June 1996 (KD).

**Distribution: California:** Southern Inyo, Kern and southern Inyo Counties. Once believed limited to the California Coast Ranges, Gordon Pratt has found that *tildeni* extends into the southern Sierra Nevada and even into several Mojave Desert Ranges.

**Habitat:** This blue favors rocky or sandy soils canyon walls, road cuts and canyons where *Eriogonum nudum* grows.

**Flight:** April to early October.

**c. Dotted Blue—*Euphilotes enoptes* near *aridorum* Austin, 1998.**

**Taxonomic note:** This subspecies uses *Eriogonum elatum* as the larval host. Adults are most similar to nominotypical *enoptes*, but are slightly larger, the black outer margins are slightly narrower and males usually lack orange on the margin of the dorsal hindwings where *E. enoptes enoptes* has orange (Austin, 1998c). The fact that three subspecies of *E. enoptes* occur in a such a small area of southern Mono County and have somewhat different flight periods suggest that all three may be reproductively isolated.

**Type Locality:** Peavine Peak Road at US 395 1646 m, Washoe County, Nevada.

**Records: California: Mono County:** Near Mammoth Airport off US 395 4-5 July 2006 (PAO-EBO) and 6 July 2009 (KD). **Plumas County:** Below Frenchmen's Reservoir associated with *Eriogonum elatum* 7 July 2013 (JL).

**Distribution: California:** Mono and Plumas counties.

**Habitat:** Sagebrush-covered fields near the Mammoth Lakes Airport near the host.

**Flight:** Late June-July.

**121. Langston's Blue—*Euphilotes langstoni* (Shields, 1975). New combination.**

**Taxonomic notes:** Previously treated as a subspecies of *Euphilotes enoptes*; this blue is often sympatric with *Euphilotes mojave* and/or *Euphilotes enoptes tildeni* in the Butterbrecht Peak-Kelso Valley area in Kern County and in Nine Mile Canyon in Inyo County. It uses at least two different buckwheat hosts: *Eriogonum kennedyi* and a yellow flowered *Eriogonum nudum*. This species can have either blue or brown females, which contributed to some believing *langstoni* is a *Euphilotes mojave* subspecies. Gordon Pratt (pers. comm.) reported that both *Euphilotes mojave* and "*E enoptes langstoni*" occur together in late May on Pinyon Mountain (Kern County, Kelso Valley area) as it does at several other locations.

The idea of host plant races has now been replaced with the belief that blues that use different host plants and are sympatric with other “subspecies” at the same localities at the same time are better treated as species-level taxa. That is the thought here.

**Sierra Nevada Type Locality:** 1.6 road miles N of Mono/Inyo County line, Hwy. 395, 6 miles south Sherwin Summit, Mono County, California.

**Records: California: Inyo County:** Olancho Creek 5200’ 7 May 1990 (JFE); Pine Creek Canyon 30 May 1999 & 23 May 2011 (KD); Nine Mile Canyon 30 Apr & May 18, 2019 (KD). **Kern County:** Chimney Peak Rd S of Lamont Peak 25 June 1982 and 4 July 1983 (KD); side canyon 1.5 road mi S of Butterbrecht Peak 26 May 1978 and 21 May 1988 (KD); and also occurs commonly in Sageland area N Kelso Valley in hills with yellow buckwheats. **Mono County:** Sherwin Summit (US 395) 17 May 1993; Lower Rock Creek 12 May 1989 & 14 May 2006 (KD); Swall Meadow Rd jct. with Old Sherwin Meadow Rd 12 May 1989 (KD). **Tulare County:** Chimney Peak Rd N side Lamont Peak 4 & 6 July 1983 and ravine 10 mi S of Kennedy Meadows 22 June 1986 (KD).

**Distribution: California:** Inyo, Kern, Mono and Tulare counties. The southern limit in the Sierra Nevada seems to be in canyons just south of Butterbrecht Peak. The known northern limit is McGee Creek in Mono County.

**Habitat:** Dry slopes and canyons where the larval hosts grow. Pine Creek Canyon near Rovana is a classic locality, *langstoni* is very abundant in May and early June along the entrance to the canyon for over a mile along the road at the base of the sandy slopes in association with yellow-flowered *E. nudum*.

**Flight:** May to early July.

## 122. Ancilla Blue—*Euphilotes ancilla* Barnes & McDunnough

This species has only recently been recognized as occurring in California and in the Sierra Nevada, and has only recently been recognized as being a species separate from *Euphilotes enoptes*. The recognition of these blues is only sure if the male genitalia is checked and/or DNA work is done. Reportedly, these blues tend to closely resemble whatever *battoides* complex blue that shares their host plants, so field marks are unreliable. This being so, there is little known about the distribution of these butterflies.

**Comments:** We know that it is very likely that this species occurs at lower elevations east of the Yosemite region in association with the larval host *Eriogonum umbellatum* where *Euphilotes glaucon* also flies. We also know that genitalic checks of apparent *E. glaucon comstocki* from the southern Sierra Nevada have turned up a few individuals with male genitalia that were not of the *battoides* type.

**a. Sierra Nevada Ancilla Blue—*Euphilotes ancilla pseudointermedia*** Pratt & J. Emmel, 1998.

This subspecies was named what it was because it resembles *intermedia* in the *battoides* complex, but it has *enoptes* complex genitalia. Sometimes binoculars and cameras are just not good enough! Nor are collected specimens without male genitalic exams or DNA work.

**Sierra Nevada Type Locality:** Castle Peak near Donner Pass 2700 m, Nevada County, California.

**Records: California: Alpine County:** 2.7 air mi SE Carson Pass 8900' 26 June 2002 (JFE). **Mono County:** Tioga Pass; Sonora Pass, larvae 16 July 1984 (GP & JFE). **Nevada County:** Boreal Ridge S Donner Summit 18 June 2001 (PAO). **Sierra County:** 6 miles S of highway 263, Tahoe National Forest 1 July 2009 (PAO).

**Distribution: California:** Unknown because this blue's identity has to be confirmed by the shape of the male genitalia and this species very much resembles whatever *Euphilotes battoides* complex member it occurs with. As much as this might upset people, field marks alone don't always work and so it will take much time and difficulty to know the distribution of this species in the Sierra Nevada.

**b. Ancilla Blue—*Euphilotes ancilla gilvatunica*** Austin, 1998.

**Sierra Nevada Type Locality:** Nevada State Route 341, 3.3 miles east of US 395, 1525m, Washoe County, Nevada.

**Comment:** It is likely some apparent *ancilla* collected on the Sierra Nevada east slope and western Great Basin may possibly be this subspecies, but confirmation of that and much more research needs to be done.

**123. Pale Blue—*Euphilotes pallescens*** (Tilden & Downey, 1955).

This is one of the more highly prized *Euphilotes* blues. While it can be common at times in wet years, it tends to be scarce or absent in dry years. Many who look for this blue return home without finding it. It can be intensely local in occurrence. There are two subspecies recorded for the Sierra Nevada region.

**a. Elvira's Pale Blue—*Euphilotes pallescens elvira*** (Mattoni, (1966).

**Taxonomic note:** Some believe *pallescens* (Tilden & Downey, 1955) is not a valid species and use the names combination *E. rita elvira*, but others believe *elvira* itself may warrant species recognition.

**Type Locality:** 3.5 mi. SW of Pearblossom, Los Angeles County, California.

**Records: California: Inyo County:** W of Independence 10 July-10 Aug 1966 (S Johnson); Nine Mile Canyon 5500' 8 Sep 1980 (JFE); Whitney Portal in ravine off the upgrade 13 Aug 2001 &

9 July 2009 (KD). **Kern County:** Tom's Hill (SW Butterbredt Peak) and vicinity 21 Aug 1979 (scarce, KD); canyon 1.5 mi S of Jawbone Canyon Summit 14 Sep 1998; 2-4 mi E of Walker Pass 8 Aug 1977; 29 Aug 1979 & 25 Aug 1989 (KD). Piute Mountains: Harris Grade (SE side of range) 5 Sep 1979 (JFE), E slope 3 mi W of Sageland 25 Sep & 1 Oct 2009 (KD); 17 July & 16 Sep 2010 (KD).

**Distribution: California:** Kern, Inyo and Mono counties. Mojave Desert plant associations on the east side of the Sierra Nevada and the Piute Mountains including the Butterbredt Peak area, the south side of the Piute Mountains, Harris Grade, Kelso Valley area, Sierran east slope, E of Walker Pass, Nine Mile Canyon, Whitney Portal grade north to the Sherwin Summit area off US 395. Oakley Shield's reported a *pallescens* that was collected in July at Mammoth (Mono County).

**Habitat:** Dry slopes (often in Mojave Desert plant associations) with various buckwheat hosts. The east slope of the Piute Mountains is in the pinyon pine plant community and the larval host there is unknown. *Eriogonum microthecum* is used on the east side of the Sierra Nevada (Emmel & Emmel, 1973).

**Flight:** July-September.

**b. Confusing Pale Blue—*Euphilotes pallescens confusa* Pratt & J. Emmel, 1998.**

**Taxonomic notes:** This subspecies is quite variable and can resemble both *elvirae* and *pallescens*. Adults are distinguished by the generally broad aurora on the wings and the weak suffusion of the forewing, making the adults appear dusky with the spots not as bold as in other taxa within the species. The host plant is reported to be *Eriogonum deflexum* (Pratt & Emmel, 1998b).

**Type Locality:** California: Inyo County; Rest Spring 6,640', Cottonwood Mts., Death Valley National Monument (now Park).

**Records: Nevada: Carson City County:** Carson City, base of Carson Range, 1 mi S of Carson City 4900' 17 July 1969 (JFE & AOS), associated with *Eriogonum baileyi* S. Watson var. *divaricatum*. **Washoe County:** Carson Range, Davis Creek Park 4 Aug 2002 GTA.

**Distribution: Nevada:** These are the only reported records for the Sierra Nevada. It may be questionable if these records are actually *confusa*, based on host plant issues and the original description.

**Habitat:** This species was described from harsh conditions in Death Valley National Park. Habitats were not stated at the above localities.

**Flight:** Late July-August.

**124. Arrowhead Blue—*Glaucopsyche piasus*** (Boisduval, 1852).

Three subspecies occur in the Sierra Nevada.

**Taxonomic note:** At the time of Garth & Tilden's Yosemite Butterflies (1963), this species was placed in the genus *Phaedrotes*.

**a. Arrowhead Blue—*Glaucopsyche piasus piasus*** (Boisduval, 1852).

**Sierra Nevada Type Locality:** Hwy. 70 at Soda Creek, E. Branch of Feather River Canyon, Plumas County, California.

**Records: California: Fresno County:** Kaiser Pass 26 June 1966 (KCH). **Kern County:** Greenhorn Mountains: Cedar Creek 18 June 1977 (KD); south end of Kern Plateau at Pine Flat 10 June 2006 (KD) southern limit of range in the Sierra Nevada. **Madera County:** Near Fresno Dome 8 June 1992 (KR); near Fresno Dome off trail 13 June 2002 (KD); E of Redwood Camp (FS 10) 23 May 1993 (KD). **Mariposa County:** Fish Camp 16 June 1990 & 12 June 1992 (KD); Jerseydale, late April to mid-June, year not specified (AOS). **Sierra County:** Lincoln Meadow, Tahoe National Forest 5 July 2007 (SEABA-C). **Tulare County:** Big Meadow (Kern Plateau S of Sherman Pass Rd) 20 June 1980 (KD); 3-4 mi W of Sherman Pass 20 June 1999 & 21 June 1982 (KD); Pine Meadow area N of Kennedy Meadows 25 June 1982 (KD); 7 mi S of Kennedy Meadows 8 June 1985 & 13 June 1999 (KD); Stony Creek near Sequoia National Park 11 June 1990 (KD). **Tuolumne County:** Mather 30 June 1962 (JWT). **Nevada: Douglas County:** Carson Range, Clear Creek Canyon, 4.7 mi W of US 395, 22 May 1984 (GTA). **Washoe County:** Tahoe Rim Trail 3 July 2009 (JD).

**National Park Records: Sequoia NP: Tulare County:** Halstead Meadows 30 June 1979 (PN); Cabin Cove 9 June 1988 (KD); Dorst Camp 16 July 1992 (KD). **Yosemite NP: Mariposa County:** Research Reserve near Yosemite Creek S of Tioga Rd 9 to 14 July 1934 (Edmund Godwin); trail from top of Yosemite Falls to Eagle Peak 1 July 1933 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo (?), Kern, Madera, Mariposa, Mono (?), Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas and Washoe counties. The counties with question marks have *piasus* in them but it is unclear if it is the nominotypical subspecies the records are based on. The nominotypical subspecies occurs as far south as the Greenhorn Mountains and at Pine Flat on the Kern Plateau in Kern County.

**Habitat:** Transition and Canadian Life Zones, usually found in forest openings, roadsides at stands of lupines, the larval hosts.

**Flight:** Mid-April to early August.



**b. Bush Lupine Arrowhead Blue**—*Glaucopsyche piasus excubita* Emmel, Emmel & Mattoon, 1998.

**Taxonomic notes:** This subspecies differs from the nominotypical subspecies by its much greater contrast in ground color and smaller size, though I have found some colonies further south have larger sized individuals than those from the type locality.

**Sierra Nevada Type Locality:** California: Inyo County: Bishop Creek, vicinity of Andrews Camp, now known as Four Jeffrey Campground (California).

**Records: California: Inyo County:** Nine Mile Canyon 13 Apr 1994 (KD); SF Bishop Creek above 8300' 23 June 1986; 18 May 1993 and 27 July 2019 (worn) near Table Mountain Camp, fisherman's trail (KD). **Kern County:** 0.7 mi SW of Sageland N of Kelso Valley 3 to 23 Apr 1977; 23 Apr 1979 & 20 Mar 1995 (all KD); Piute Mountain Rd 1 mi W of Sageland 6 Mar 2003 (KD). **Tulare County:** Upper Kern River at Fairview 27 Apr 1964 (RLL); Chimney Peak Rd, Lamont Meadows 13 Apr 1994 & 25 May 1985 (KD); Spring (Pine Creek) 8 June 1985 & 20 June 1992 (KD), the latter locality population may be intergrading with nominotypical *piasus*.

**Distribution: California:** Inyo, Kern and Tulare counties. This subspecies occurs as far south in the Sierra Nevada as the Sageland area in the Kelso Valley area and up the Piute Mountain Rd W of Sageland and there is one record for Havilah. It occurs up the Kern River drainage at Calkin's Flat, Fairview and off the Sherman Pass Rd. below 6000' (nominate *piasus* replaces it above 6000' W of Sherman Pass) and on the east side of the Sierra Nevada is common in the Chimney Peak area (including Lamont Meadows) near the SE Kern Plateau and Nine Mile Canyon and along the South Fork of Bishop Creek as high as 9000'. The actual southern range limit for this subspecies is the Mojave Deserts western edge in the Tehachapi Mountains in Cameron Canyon and Oak Creek Pass.

**Habitat:** This blue with the arrowhead markings below occurs in Mojave and Great Basin Desert plant communities, juniper woodland, foothill woodland and east facing canyons on dry slopes with *Lupinus excubitus*, the host plant this butterfly is named after.

This subspecies tends to occur in the Upper Sonoran Life Zone, replaced at higher elevations and life zones by nominotypical *piasus*.

**Flight:** Late March through July.

**General:** This butterfly is an amazing sight in a Mojave Desert ravine 0.7 mi. SW of Sageland within the Sierra Nevada in the spring, an unusual habitat when dozens of these butterflies patrol the slopes and lupines along with ten other species of blues.

**c. Nevada Arrowhead Blue**—*Glaucopsyche piasus nevada* F. Brown, 1975.

This is a heavily marked distinctive subspecies, only recently recognized to occur within California.

**Type Locality:** Bob Scott Campground in the Toiyabe National Forest, Lander County, Nevada 7300'-7,500'.

**Records: California: Mono County:** Green Canyon 10 June 1996 (BRB); Little Antelope Canyon 14 June 1996 (BRB); Summit Canyon 16 June & 10 July 1996 (BRB); Virginia Canyon 12 June & 9 July 1996 (BRB); Lundy Lake Rd just below Dam 26 June 1999 (KD); Sonora Pass on ridge to the NE 9 Aug 1998 (KD) and south of pass 23 June 1999 (RLL).

**Distribution: California:** Mono County, but might range into Alpine County. This rare subspecies also occurs at high elevations (9000'+) in the Bodie Hills and in the White Mountains east of the Sierra Nevada in late June and July.

**Habitat:** Sparsely wooded slopes with lupines on the ridge NE of Sonora Pass. The population near Lundy Dam was on lupines right off the main road in a well vegetated brushy area with lots of flowering plants.

**Flight:** June to early August.

### 125. Silvery Blue—*Glaucopsyche lygdamus* (Doubleday, 1841).

There are up to five subspecies or segregates in the Sierra Nevada. How to define these is difficult as there is great variation, especially in females.

#### a. Unrecognized Silvery Blue—*Glaucopsyche lygdamus incognita* Tilden, 1974

**Taxonomic notes:** The Sierra Nevada west slope populations have gone under the subspecific names *columbia* (Skinner, 1917) and *behrii* (W. H. Edwards, 1862) the latter which actually applies as a form of *xerces* (Boisduval, 1852) which meant the name *behrii* was unavailable and was renamed *incognita* Tilden 1974. The name *columbia* really did not fit well with what is in the Sierra Nevada, but because these blues start exhibiting larger sized black dots, resembling the more northern Coast Ranges populations.

**Type Locality:** Alum Rock Park, Santa Clara County, California.

**Records: California: Fresno County:** SR 168, 14 mi NW of Shaver Lake 2000' 20 Mar 2004 (KD); San Joaquin River Crossing at Power House 11 Apr 2004 (KD). **Madera County:** Coarsegold 27 Apr 1992 (KD); Sugar Pine 27 Apr & 23 May 1992 (KD); Redinger Lake 20 Mar 2004 (KD). **Mariposa County:** Briceburg 10 Mar 1979 and 28 Mar 1981 (KD).

**National Park Records: Sequoia NP: Tulare County** Mineral King Rd to Park entrance 18 Mar 1992 & 8 May 1993 (KD); Ash Mountain 28 Feb 1986 (KD); Potwisha 28 Feb & 18 Apr 1986 (KD); Hospital Rock 28 Feb 1986 (KD); Buckeye Flat 18 Apr 1986 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley 31 May 1964 (KD).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Madera, Mariposa, Nevada, Placer, Sierra, Northern Tulare, Tuolumne and Yuba counties

**Habitat:** Upper Sonoran and lower Transition Life Zones. These blues fly in foothill woodland and at bases of hills and in canyons. **Flight:** Late March-early July.

**b. Great Basin Silvery Blue—*Glaucopsyche lygdamus orcus*** (W. H. Edwards, 1869)

**Type Locality:** Not stated, suggested to be Storey County, Nevada.

**Records: California: Inyo County:** Lone Pine Creek below Whitney Portal 25 Apr 2005 & 28 Apr 2006 (KD). **Mono County:** Green Canyon 10 June 1986 (BRB); Mill Canyon Rd SW of Walker 10 May 1997 (JGP); Hot Creek SE Mammoth Mountain 14 May 2006; Lower Rock Creek 14 May 2006 (KD).

**Distribution: California:** Alpine, El Dorado, Inyo, Mono and Placer counties. This subspecies occurs on the east slope of the Sierra Nevada from at least El Dorado County south into Inyo County and eastward into several Great Basin mountain ranges.

**Habitat:** Adults fly in foothill woodland and sagebrush scrub on the east slope of the Sierra Nevada and the western edge of the Great Basin.

**Flight:** April into at least early June.

**c. Silvery Blue—*Glaucopsyche lygdamus*-Southeastern Mojave Desert/ Sierra segregate.**

**Taxonomic notes:** The males of this segregate resemble the eastern Mojave Desert subspecies *deserticola* (Austin & J. Emmel, 1998a), but not in the very few females that have been collected. Some believe this segregate is not that different than the Sierra Nevada west slope segregate. Without more females to examine, that issue is not resolved here.

**Records: California: Kern County:** E of Walker Pass 19 Apr 1989 (JFE); Sageland area N of Kelso Valley 15 May 1976 (JB/KD); 26 Apr 1979 & 1 Apr 2000 (KD); 2 mi SW Birdspring Pass 14 & 22 Apr 2000' and Butterbrecht Peak area 18 Apr 1980 (KD), south for the Sierra Nevada. **Tulare County:** Lamont Peak 22 May 1982 (KD) and Spring, Pine Creek, 5-7 mi S Kennedy Meadows 18 June 2005 (KD) and 11 mi S Kennedy Meadows 28 June 1975 (JB).

**Distribution: California:** Kern and SE Tulare counties.

**Habitat:** Mojave Desert plant communities in the Kelso Creek drainage and Kelso Valley where adults favor canyons, washes and roadside ravines east to Walker Pass and the Chimney Peak Rd/Lamont Meadows area. Adults are found in such situations within sagebrush scrub in the Kennedy Meadows area and along the Chimney Peak Road.

**Flight:** Late March to late May.

**d. Silvery Blue—*Glaucopsyche lygdamus***-Sierra Nevada west slope segregate.

**Taxonomic notes:** This rather common unnamed segregate occurs south of the more *incognita*-marked populations to the north. Females are much more common in these populations than the desert segregate found in the Mojave Desert plant community to the southeast.

**Records: California: Kern County:** Kern River N of Kernville 14 Apr 2002; E slope Greenhorn Mountains near Kernville 24 Apr 1981 & 30 Apr 1983 (KD); Kern Canyon at Democrat (near the Hot Springs, but upstream above the Kern River along small stream) 15 Apr 2010 (KD); Piute Mountains 2-4 mi S of Bodfish 3 Apr to 14 May 1976 and 25 Mar 1987 (KD). **Tulare County:** Ant Canyon E of Kern River 6 & 21 Apr 2006; Limestone Camp 21 Apr 1997 (KD); Goldledge Creek and hills E of Kern River 24 Apr 1981 and 19 Mar 1996 (both KD).

**Habitat:** Upper Sonoran and Transition Life Zones. These blues favor the base of rocky canyon walls with *Lotus* in foothill woodland.

**Distribution: California:** Northern Kern and southern Tulare Counties.

**Records:** Late March to early July.

**e. Silvery Blue—*Glaucopsyche lygdamus*** -High elevation Sierra Nevada segregate.

**Taxonomic notes:** Garth & Tilden (1963) applied the name *columbia* (Skinner, 1917) to these high elevation Silvery Blues, but Emmel, Emmel & Mattoon (1998g) treated the high elevation Sierra Nevada populations as an unnamed segregate in their state checklist. These may well be just a higher elevation collection of phenotypes that don't match described and named populations found at lower elevations. At Alder Creek at 6800' on the Sherman Pass Rd, the lower elevation *lygdamus* (also not named) now appear to have replaced the higher elevation phenotype that was once common there. The species has not been common there for the last 3 or 4 years. Possibly, phenotypic differences may be environmentally caused, at least in the case of the Sherman Pass Rd. colony at Alder Creek at 6800'.

**Records: California: Fresno County:** Kaiser Pass and near Huntington Lake 26 June 1966 (KCH & Jan Hughes); N of Dinky Creek 27 May 2002 (KD). **Madera County:** Fresno Dome 26 June 2004 (Al & Tom Rubbert) & 30 June 2004 (KD). **Mono County:** Minaret Summit, 8965', Inyo National Forest 17 July 2019 (PAO-EBO); E above Saddlebag Lake 28 July 1958 (AOS) and 31 July 2004 (KD); Virginia Canyon 9 July 1996 (BRB). **Plumas County:** Round Lake Loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Packsaddle campground, Packer Lake road, Tahoe National Forest 30 June 2017 (SFSU – BSNC); Yuba Pass Meadow, Tahoe National Forest, 24 June 2016 (SFSU-BSNC). **Tulare County:** Sherman Pass Rd at Alder Creek 6800' 9 June 2001; 20 June and 12 July 1999 (KD), this population may be gone due to global warming and prolonged drought; Balch Park 25 June 2005 (KD). **Nevada: Washoe County:** W. of Mt. Rose Summit, trail to Relay Peak 11 July 2012 (JGP).

**National Park Records: Sequoia NP: Tulare County:** Mineral King, White Chief Trail 9500' 23 July 1992 (KD). **Yosemite NP: Mariposa County:** Tenaya Canyon 11 July 1958 (AOS);

Tamarack Flat 3 July 1954 (JWT); below Vogelsang Pass 3 Aug 1958 (AOS); Badger Pass 23 June 1959 (JSG). **Tuolumne County:** Tioga Pass 16 Aug 1952 (JWT); White Wolf 10 July 1956 (JSG); Mt. Dana, W slope 20 July 1958 (JWT).

**Distribution: California:** This unnamed segregate occurs in at least Alpine, El Dorado, Inyo, Fresno, Madera, Mono, Tulare, Tuolumne, Mono, Placer and Plumas counties.

**Nevada:** Washoe County.

**Habitat:** Upper Transition, Canadian and Hudsonian Life Zones. These blues occur along creeksides, rocky trails at the base of slopes and on rocky terrain. Males go to mud.

**Flight:** June-August.

### 126. Reakirt's Blue—*Echinargus isola* (Reakirt), 1867).

**Type Locality:** Mexico, near Veracruz.

**Records: California: Alpine County:** Avalanche Meadow 8200' 1 Sep 1998 (RK). **Inyo County:** Mono Pass 11 Aug 2006 (Ricky Patterson & Howard Grisham). **Inyo County:** Whitney Portal 25 Aug 1998 (KD); SF Bishop Creek 8 Aug 1998 and abundant 8000'-9000' 27 July 2019 (KD); Whitney Portal and Movie Rd jct. area along Lone Pine Creek 8 June 2019 (KD). **Kern County:** Jct. of Kelso Valley & Jawbone Canyon Roads in Kelso Valley 22 Apr 1984 (JGP); Kern River Valley at Weldon (Paul's Place) 20 Sep 2008 (KD). **Mono County:** N above Tioga Pass 10,500' 16 Aug 1975 (KD); Warren Creek (SR 120) 28 July 1958 (AOS) & 21 June 1986 (KD); Lower Rock Creek 6500' 26 Aug 1983 (RLL) and 14 May & 24 June 2006 (KD); Saddlebag Lake 12 Aug 2006 (KD); Walker 28 July 2019 (KD). **Nevada County:** Castle Peak 7000' 20 July 1972 (AMS). **Tulare County:** 2-4 mi S of Johnsondale 6 June 1983 & 25 May 1985 (KD); Chimney Peak Rd on road cut just W of Lamont Meadows 6 July 1983 (KD); Lamont Meadows 25 May 1985 (KD); Bald Mountain Lookout 4 July 1998 (KD); Kennedy Meadows 30 June 1988 (KD); Greenhorn Mountains: Baker Ridge Lookout 4 July 1998 (KD); W of Sherman Pass 9000' 2 July 2006 (KD). Kern River on Whiskey Flat Trail at Fairview 29 June 2014 (SR).

**National Park Records: Yosemite NP: Mariposa County:** Vogelsang Lake 3 Aug 1958 (JSG/AOS). **Tuolumne County:** Crest W of Tioga Pass 9 July 1958 (AOS); Upper Gaylor Lake 14 July 1958 (AOS); Gaylor Lakes Trail 31 Aug to 3 Sep 1958 (JWT); Tuolumne Meadows 3 Sep 1958 (JWT); Rafferty Creek Trail 3 Aug 1958 (JSG, AOS).

**Distribution: California:** This blue may not be a resident anywhere in the Sierra Nevada but is a regular migrant from the deserts that establishes yearly transient populations, with a notable outbreak of numbers in 2019. This species is known to have occurred in the California Sierra Nevada in Alpine, Calaveras, El Dorado, Inyo, Kern, Mariposa, Mono, Nevada, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

This blue was very common at high elevations of the South Fork of Bishop Creek 8400-9000' and the Saddlebag Lake area, Mono County near Yosemite National Park above 8400' in late July and one was found at Walker in a wetland off the Mill Canyon Rd.

**Habitat:** This blue can turn up in just about any habitat in all life zones.

**Flight:** March to October.

**127. Anna Blue—*Plebejus anna anna*** (W. H. Edwards, 1861).

**Taxonomic notes:** This butterfly was formerly believed to be a Northern or *Argyrognomon* Blue and has gone under the names *argyrognomon* (Berstrasser) and *idas* (Linnaeus, 1761) by various authors.

**Sierra Nevada Type Locality:** Truckee, Nevada County, California.

**Records: California: Fresno County:** Shaver Lake 3 & 8 July 2002 (RE). **Madera County:** Fresno Dome Camp 26 July 1992; 5 & 11 July 1999 and 30 June 2004 (KD); Fresno Dome Trailhead meadows 11 July 1999 (KD). **Mariposa County:** Fish Camp 28 July 1989 & 4 Aug 1990 (KD). **Plumas County:** Mills Peak Road, 1 mi. E of lookout, Plumas National Forest 30 June 2018 (PAO); Round Lake loop, Tahoe National Forest 11 July 2012 (SFSU - BSNC). **Sierra County:** Forest road 52, S Bassetts, Tahoe National Forest 9 July 2012 (SFSU - BSNC). **Tulare County:** Double Bunk Meadow 24 July 1983 (PN), southern range limit; Freeman Creek Grove 30 June 1975 (JRM) and 16 & 29 July 1983 (KD); Quaking Aspen 3 Sep 1983 & 10 Aug 2002 (KD); Stony Creek Camp downstream to Woodward Creek 27-29 June 1987; 4 Sep 1991 (KD) and Boulder Creek E of Big Meadow near Kings Canyon NP 28 June 1987 (KD). **Tuolumne County:** Meadows off Eagle Meadow Rd near Niagara Camp 8 July 1987 & 12 July 1994 (KD). **Nevada: Carson City:** Carson Range, Marlette Lake Rd, 2.3 mi S of Snow Valley Peak Rd 30 June 1981 (GTA); **Washoe County:** Carson Range, W shore of Marlette Lake 25 July 1981 (GTA).

**National Park Records: Kings Canyon NP: Tulare County:** Wilsonia 10 July 1989 (KD); Village Meadow 23 June 1989 (KD). **Sequoia NP: Tulare County:** Clover Creek 28 June 1972 (G. Balogh); 2 mi W of Mineral King Valley and 2 mi W of Cabin Cove 5 July 1985 (KD); Tharp's Log 3 July 1976 (PN); Silver City 5 & 27 July 1985 (KD); Halstead Meadow 30 June & 8 Aug 1979 (PN); Wolverton 24 July 1987 (KD); Dorst Camp 16 July 1992 (KD); Giant Forest Village 15 Aug 1986 & 27 June 1987 (KD); Lodgepole and Tokopah Falls Trail 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** Badger Pass 23 June 1959 (JSG); Wawona Grove 3 Aug 1963 (KD). **Tuolumne County:** Mt. Dana Trail 8 Aug 1933 (JSG); Hetch-Hetchy Summit 13 July 1956 (JSG); Tuolumne Meadows 14 Aug 1957 (JWT); Gin Flat 19 July 1957 (JWT).

**Distribution: California:** Alpine, Amador, El Dorado, Fresno, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** All Sierran Counties.

**Habitat:** Wet meadows in Transition and Canadian Life Zones on the Sierra Nevada west slope with a few exceptions including the Nevada records, openings in Giant Sequoia Groves and along small streams.

**Flight:** Late June-early September.

**128. Melissa Blue—*Plebejus melissa*** (W. H. Edwards, 1873).

The number of subspecies or segregates which occur in the Sierra Nevada is controversial. Many believe that subspecies *inyoensis* of the Owens Valley is the same as subspecies *paradoxa* from the Tehachapi Mountains. Both tend to have blue overscaling in females. Another controversy has to do with the name *fridayi* originally named as a subspecies of *melissa*, a name now applied to a similar but different species: Friday's Blue (*Plebejus fridayi*). Both Garth & Tilden (1986) and Emmel, Emmel & Mattoon (1998g) treated *inyoensis* as a synonym of *paradoxa*.

I checked series of *melissa* in my personal collection that would represent *inyoensis*, *paradoxa* and the unassigned Sierra Nevada populations in the southern Sierra Nevada in Kern and Tulare Counties (10 males; 10 females of each...not enough to decide this issue), but I did note that while males of the Owens Valley (= *inyoensis*) and *paradoxa* from the Tehachapi Mountains and those from the Sierra Nevada were all similar, but the oranges spots on both forewings and hindwings of females from Olancho (the TL) and the Owens Valley were generally a more prominent orange than females of *paradoxa* and the *melissa* from the southern Sierra Nevada.

**a. Melissa Blue—*Plebejus melissa melissa*** (W. H. Edwards, 1873).

**Taxonomic note.** Nominotypical *melissa* had not been reported from California, but Austin (2008) does report it from Nevada within the Sierra Nevada region, and Paul Opler added a California record during this project.

**Type Locality:** Possibly Fairplay, Park County, Colorado.

**Records: California: Sierra County:** 1 mi. E Calpine 11 July 2012 (SFSU - BSNC). **Nevada: Douglas County:** Carson Valley, Scossa Ranch 26 Aug 1983 (GTA); Gardnerville, larvae on alfalfa, no date (Austin, 2008).

**b. Inyo Melissa Blue—*Plebejus melissa inyoensis*** (Nabokov, 1949).

**Sierra Nevada Type Locality:** Olancho, Inyo County, California.

**Records: California: Alpine County:** Woodford's 28 Oct 1990 (AMS). **Inyo County:** Owens River E of Bishop 7 Aug 1978 (KD); Olancho 18 Sep 1978 & 21 Aug 1981 (KD); Nine Mile Canyon 22 Sep 1997; 30 Apr & 18 May 2019 (KD); Whitney Portal Rd, 2 mi W of Lone Pine 7 May 1992 & 10 Sep 2005 (KD); Lubken Canyon Rd 7 May 1992; 1 Sep 1993 and other dates.;

SF Bishop Creek 6600' 17 May 1993 (KD). **Mono County:** Lower Rock Creek Gorge 14 May 2006; Devil's Gate Pass 19 July 1976 (KD); Mono Lake 2-4 Aug 1975 (KD); 4-5 mi W of Lee Vining 17 Aug 1975 (KD).

**National Park Records: Yosemite NP:** Garth & Tilden (1963) listed this species from the Research Reserve along the Tioga Rd that seems more likely to be *anna* and other locations they listed inside the Park are more likely *fridayi*. *P. melissa inyoensis* does occur on the east slope of the Sierra Nevada and could overlap with *P. fridayi* within the Park at times.

**Distribution: California:** Alpine, Amador, El Dorado, Inyo, Kern, Mariposa (?), Mono, Nevada, Placer, Plumas (?), Sierra and Tuolumne counties. Some of these county listings may be based on misidentifications, reported before the existence of *fridayi* became known.

**Habitat:** This blue occurs in Lower and Upper Sonoran and Transition Life Zones, with strays into the Canadian Zone. It occurs in alfalfa fields, pastures, Owens River bottomlands, dry canyons of the east slope and arid flats with any of several known host plants, including *Lupinus excubitus*.

**Flight:** Late March to October.

**c. Melissa or Orange-Margined Blue—*Plebejus melissa paradoxa* Chermock, 1945.**

**Taxonomic notes:** The series of *paradoxa* I used to compare with *melissa* from Inyo County were taken from the Tehachapi Mountains. The Tehachapi Mountains are not a subrange of the Sierra Nevada so those localities are not given herein.

**Type Locality:** Tehachapi Mountains, Kern County, California.

**Taxonomic note:** The presence of *paradoxa* on a Sierra Nevada names list hinges on two things (1) *inyoensis* is a synonym of *paradoxa*, or (2) populations on the Kern Plateau, in the Kern River drainage in Tulare County, or the Kelso Valley E side of the Piute Mountains are *paradoxa*.

**Records: California: Kern County:** Sageland area N Kelso Valley 15 May 1975 (JB/KD); 17 June 1997 & 30 May 2005 (KD); E slope Piute Mountains 1-2 mi W of Sageland 13 Aug 2005 (KD). **Tulare County:** Upper Kern River, Fairview 27 Apr 1964 (RLL); 21 May 1990 & 25 Aug to 30 Oct 2002 (KD); Calkin's Flat 28 Apr 2001 and 3 July 2005 (KD); south end of Kern Plateau at Lamont Meadows 20-21 May 1983 (SOM); 25 May & 16 Aug 1985 (KD).

**Distribution: California:** Kern and Tulare counties.

**Habitat:** Upper Sonoran Life Zone. Mojave Desert plant communities in the Kelso Valley region near Sageland and on the east side of the Piute Mountains, upper Kern River at Corral Creek and Calkin's Flat, Brush Creek near Dry Creek Canyon off the Sherman Pass Rd, Chimney Peak Rd near Lamont Meadows near the south end of the Kern Plateau. The larval host is *Lupinus excubita*, a bush lupine.



**Flight:** Late March to early November.

**129. Friday's Blue—*Plebejus fridayi*** Chermock, 1945.

The author first used *fridayi* to apply to the High Sierra populations later identified by Gombert, Fordyce, Forister, Shapiro & Nice (2006) as a new species arising as a result of hybridization between *Plebejus melissa* and *Plebejus anna*. Another possibility considered was that what we are now calling *fridayi* may have been a *Plebejus idas* (Linnaeus, 1761) after it became apparent *anna* was a different species than *idas*. Should the name *fridayi* prove to actually belong to a *melissa*, what we are now calling **Friday's Blue** would have to be redescribed.

**Sierra Nevada Type Locality:** Mammoth, Mono County, California.

**Records: California: Inyo County:** South Fork of Bishop Creek 8300' 11 July 1995, 8 Aug 1998 & July 6, 2006 (KD); Table Mtn. Camp 11 July 1995 & July 6, 2006 (KD). **Madera County:** Minaret Summit near Mammoth 13 Aug 1999 & 7 Aug 2013 (BG). **Mono County:** Ridge E of Saddlebag Lake 14 Aug 1970 & 25 July 1981 (KD); hills N of Sonora Pass 10,200' 9 Aug 1998 & 27 July 2002 (KD).; Warren Creek off Tioga Rd 20 July 1976 & 1 July 2002 (PAO); Warren Bench 29 July 2019 (KN). **Tuolumne County:** W of Sonora Pass 3 July 1959 (RES/PAO); Leavitt Peak 11,000' 29 Aug 1967 (PAO). **Nevada: Douglas County:** Carson Range, Snow Valley Peak and ridge to the north 25 July 1981 (GTA). **Washoe County:** Mt Rose, no date (Nice & Forister).

**National Park Records: Yosemite NP: Madera/Tuolumne Counties:** Upper Lyell base camp 10 Aug 1958 & 3 Aug 1959 (AOS). **Tuolumne County:** Coxcomb Peak, Cathedral Range 11,000' 26 July 1958 (AOS); Helen Lake 18 July 1958 (AOS). The elevations at the above three locations fit with *fridayi* habitats.

**Distribution: California:** Alpine, Amador (?), Inyo, eastern Madera, Mariposa, Mono, and Tuolumne counties. **Nevada:** Douglas and Washoe counties.

This species is likely in many other Sierra Nevada counties but has either not been reported or recognized because of its phenotypical similarities to *Plebejus melissa* and *Plebejus anna*. *Fridayi* is reported northward beyond the northern boundaries of the Sierra Nevada (this needs confirmation) and it is also known east of the Sierra Nevada in the Bodie Hills near the Bodie ghost town, the Sweetwater Mountains and in the White Mountains.

**Habitat:** Rocky slopes and ridges with the larval host *Astragalus whitneyi* A. Gray. Classic localities are on the ridge north of Sonora Pass and on the Warren Bench above Warren Creek and Canyon accessible from the Log Cabin Mine Rd near Lee Vining. Male *fridayi* can be found at wet spots along the South Fork of Bishop Creek, Inyo County between 8400' and 9000' in good numbers.

**Flight:** Late June-August.

**General:** John F. Emmel in the past has questioned the identities of the “fridayi” in the Bodie Hills and in the White Mountains but George T. Austin and Paul Opler believed they are. Some females in the Bishop Creek area may represent an unknown *Plebejus melissa*, so some may view those distributions as tentative. My series of these blues from the Bodie Hills matches those from Sonora Pass.

One possible reason to reject those non-Sierran distributions as Friday’s Blue is that *Plebejus anna* does not occur in the Bodie Hills or in the White Mountains and possibly never did; *fridayi* being distributed there may conflict with the origins suggested in the Science Express paper.

**130. San Emigdio Blue—*Plebulina emigdionis* (F. Grinnell, 1905).**

**Taxonomic notes:** This species has usually been placed in the genus *Plebejus* by most authors. When first described and named, many insisted this blue was merely a form of the Acmon Blue.

**Type Locality:** San Emigdio Canyon, Kern County, California.

**Records: California: Inyo County:** Cartago (larvae & pupae) 19 May and 28 July 1997 (JFE & GP). Nine Mile Canyon 2 May 1994 & 22 Sep 1997, colony now extirpated (KD); Sage Flat Rd, Loco Creek Crossing 5 May 2001 (JFE); off Lubken Canyon Rd just E of US 395, 29 Apr 2005 (Greg Chatman); road to Whitney Portal near jct. with Movie R. 6 May 2012 (Rob Santry).

**Kern County:** Kelso Valley Rd 17 mi S. of Weldon 15 June 1975 (JB); Weldon, Paul’s Place, very abundant 14 June 1980; 23 Apr and 11 Sep 1981 (KD); Onyx near Worthington St. and N side SR 178 25 Apr 2004, 26 Apr (KD & PAO) & 21 May 2018 (KD).

**Distribution: California:** Inyo and Kern counties in the southern Sierra Nevada. This formerly included Weldon at Paul’s Place and on the Audubon Preserve (both colonies now apparently extirpated); two still existing colonies remain at Onyx and a very small population along Kelso Creek just north of Sageland. Other colonies exist at Cartago and near Lone Pine in Inyo County.

While collecting does not appear to be a threat to this species, habitat development and long-term drought are. This species appears to be very limited in its ability to disperse which means any recolonization of lost colonies is unlikely. California has listed this butterfly as a species of concern which now requires permits to collect or do scientific research on this species.

**Habitat:** This butterfly can be quite common at colony sites where it occurs and is considered a Pleistocene relict and a California endemic with a very limited range. Its limited range is puzzling considering the widespread range of its hostplant, *Atriplex canescens*. It apparently has to be close to drainage areas or high-water tables to survive, as well as requiring help from ants, scale insects and/or aphids to complete its life cycle.

**Flight:** Late April to September.

**131. Greenish Blue**—*Icaricia saepiolus* (Boisduval, 1852).

**Taxonomic notes:** This species has usually been placed in the genus *Plebejus* by most authors.

**a. Sierran Greenish Blue**—*Icaricia saepiolus aehaja* (Behr, 1867).

**Taxonomic notes:** This butterfly was long treated as the nominotypical subspecies, but that was changed for reasons explained by Emmel, Emmel & Mattoon (1998a).

**Sierra Nevada Type Locality:** Alpine areas of the headwaters of the Tuolumne River, neotype from Tioga Pass, Tuolumne County, California.

**Records: California:** Records are not given because of the common and widespread distribution of this species within the Sierra Nevada.

**National Park Records: Kings Canyon NP: Tulare County:** S of Buena Vista Peak in wet meadow 10 July 1989 (KD). **Sequoia NP: Tulare County:** Mineral King Valley 5 July 1985 & 22 July 1991 (KD); Farewell Gap Trail S of Mineral King Valley 19 July 1993 (KD); Giant Forest Village 27 June 1987 (KD); Tokopah Falls Trail 12 June 1990 & 2 Aug 1993 (KD). **Yosemite NP; Mariposa County:** Bridalveil Creek and Badger Pass 23 June 1959 (JSG). **Tuolumne County:** N slope of Mt. Dana, SW of Tioga Pass 25 Aug 1956 (KCH, RES); Gaylor Lakes Trail 31 Aug to 3 Sep 1958 (JWT); Dana Meadows 29 July 2019 (YBC).

**Distribution: California:** All counties if one considers southern Sierra Nevada populations to fit with *aehaja*. Populations in Kern County average somewhat larger and can resemble subspecies *hilda* (J. Grinnell & F. Grinnell, 1907) from the San Bernardino Mountains in southern California.

**Habitat:** Transition, Canadian, Hudsonian and Arctic-Alpine Life Zones. These common blues occur in wet meadows, streams and drainages, sometimes in roadside ravines with water.

**Flight:** Late May to as late as 22 Sep 2001 at Spring, Pine Creek S of Kennedy Meadows, Tulare County, California.

**General:** This butterfly can ruin butterfly counts when participants try to count and identify every blue they see in a Sierra Nevada meadow. Does it matter if it's 2000 or 2037? Will anything else outside the meadow get counted? While on a count when investigating something potentially new for the count, others wanted me to confirm yet another additional irrelevant Greenish Blue!

**b. Greenish Blue**—*Icaricia saepiolus rufescens* (Boisduval, 1869).

**Taxonomic notes:** Authorities may differ on whether to recognize *P. s. rufescens* as different from *aehaja*; *rufescens* has a very faint orange tinge between the marginal and submarginal black macules toward the hindwing tornus which is absent on *aehaja* (Austin, 1998c). The two subspecies are recognized in the Pelham Catalogue.

**Sierra Nevada Type Locality:** Gold Lake, Sierra County, California.

**Records: California: Mono County:** Mono Lake 2, 4 & 17 Aug 1975 (KD); June Lake 27 June 1999 (KD); Devil's Gate Pass (US 395) 9 July & 5 Aug 1976 (KD) and East Walker River at Sonora Jct. 9 June 1996 (GTA). **Nevada: Douglas County:** Carson Range, Clear Creek Canyon, 4.7 mi W of US 395, 22 May 1984 (GTA); **Washoe County:** Carson Range, Nv 431, Tahoe Meadows 21 July 1980 (GTA); Carson Range 2 mi E of Mt. Rose Summit 30 June 1987 (GTA).

**Distribution: California:** Mono County. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Wet meadows on the east slope of the Sierra Nevada and along east draining canyons, creeks and rivers at the west end of the Great Basin.

**Flight:** Late June-August.

c. **Greenish Blue**—*Icaricia saepiolus*-Southern Sierra Nevada segregate.

**Taxonomic note:** These butterflies are larger in size and can resemble subspecies *hilda* in that respect

**Records: California: Kern County:** Piute Mountains: Landers Creek near Sorrell Peak 11 July 1976 (JB); south for the Sierra; in meadows NW of Piute Mountain Vista off Piute Mountain Rd 19 June 1981 & 8 July 1982 (KD). Greenhorn Mountains: N of Tiger Flat 25 June to 7 Aug 1995 (KD) and 10-24 June 1980 (KD); near Black Mountain Saddle 19 June 1993 (KD). **Tulare County:** Greenhorn Mountains: Marshall Meadow 6 July 2002 (RES, SOM & KD); Big Meadow, Kern Plateau 15 June 1976; 12 July 1978 & 20 June 1980 (KD); Pine Flat at south end of Kern Plateau 8 June 1986 (KD).

**Distribution: California:** Kern and southern Tulare counties, Greenhorn Mountains as far south as the Black Mountain Meadow in the Greenhorns with a few records from meadows in the Piute Mountains. On the Kern Plateau such individuals occur on the Kern Plateau just north of the Kern County line.

**Habitat:** Wet meadows and drainages.

**Flight:** June-July.

**132. Boisduval's Blue**—*Icaricia icarioides* (Boisduval, 1852).

This variable species has over 20 named subspecies, four recognized in the Sierra Nevada. These tend to be common subspecies in the Sierra Nevada within their individual ranges. Some *icarioides* in the Bay Area are "Endangered Species."

a. **Boisduval's Blue**—*Icaricia icarioides icarioides* (Boisduval, 1852).

**Sierra Nevada Type Locality:** Hwy. 70 at Soda Creek, East Branch Feather River Canyon, 2500', Plumas County, California.

**Distribution: California:** No records are given in general records for this wide ranging subspecies of the Sierra Nevada western slope that ranges south to Tulare County in the northern Greenhorn Mountains and on the Kern Plateau. This subspecies should be in all Sierra Nevada Counties except Kern County where *eosierra* and *evius* are the subspecies.

**National Park Records: Kings Canyon NP: Tulare County:** Buena Vista Point 28 June 1987 and Kings Canyon Overlook 23 June 1989 (KD). **Sequoia NP: Tulare County:** Alta Meadow 18 July 1960 (J. H. Gerdes); Mineral King Valley 5 July 1985 (KD); Timber Gap Trail 22 July 1991 (KD); Farewell Gap Trail S end Mineral King Valley 19 July 1991 (KD). **Yosemite NP: Mariposa County:** Badger Pass 23 June 1959 (JSG). **Mariposa County:** Crane Flat 24 June 1959 (JSG). **Tuolumne County:** Aspen Valley 14 July 1956 (JSG); below Vogelsang Pass 3 Aug 1958 (AOS). **Habitat:** Upper Sonoran, Transition, Canadian, Hudsonian and sometimes, the Arctic-Alpine Life Zones. This butterfly is common in foothill woodland, sagebrush scrub and openings in forested areas.

**Flight:** Late May-early September.

**b. Eastern Sierra Boisduval's Blue—*Icaricia icarioides eosierra*** Emmel, Emmel & Mattoon, 1998.

**Taxonomic notes:** This subspecies resembles *evius* but is even more pallid with hindwing patterns on the ventral side more washed out in appearance.

**Sierra Nevada Type Locality:** Falls Creek, 5200', 3 mi south and 3 mi west of Olancha, east slope of the Sierra Nevada.

**Records: California: Inyo County:** SF of Bishop Creek 8300'-9000' 7-8 July 1979 & 23 June 1986 (KD); Big Pine Canyon 30 Apr 2000 (KD); Nine Mile Canyon 13 Apr & 2 May 1994 and 5 Apr to 18 May 2019 (KD). **Kern County:** 0.7 mi SW of Sageland in ravine 15 May 1976 (JB/KD) 11 Apr & 3 May 2005 (KD); Walker Pass 9 May 1993 (KD); Bird Spring Pass 13 May & 1 July 2000 (KD). Populations on the lower E slope of the Piutes also appear to be this subspecies. **Tulare County:** Spring (Pine Creek) 25 May & 8 June 1985 (KD); ridge 10 mi S Kennedy Meadows 8 June 2008 (KD); Chimney Peak Rd near Lamont Meadows 25 May 1985 (KD). Populations in the Kelso Valley at Sageland and southern Kern Plateau show blending with *evius*.

**Distribution: California:** This subspecies occurs in eastern Kern and southeastern Tulare counties northwards up the east slope of the Sierra Nevada to the Bishop Creek drainage in Inyo County.

**Habitat:** Dry east slopes and canyons in sagebrush scrub and pinyon pines, often near streams. Adults form large puddle parties at favored locations, as along the South Fork of Bishop Creek near Table Mountain Camp.

**Flight:** April into August.

**c. Boisduval's Blue**—*Icaricia icarioides fulla* (W. H. Edwards, 1870).

**Taxonomic notes:** This abundant subspecies has the black spots on the hindwings ventral side surrounded by white or are obsolescent. The subspecies now recognized as *fulla* has been called many different names including *ardea* (W. H. Edwards, 1871) and *helios* (W. H. Edwards, 1871) in Garth & Tilden (1963).

**Sierra Nevada Type Locality:** Sonora Pass, 9700', Mono County, California.

**Records: California: Inyo County:** Mono Pass 30 Aug 1965 & 30 Aug 1967 (PAO); Pine Creek Canyon NW of Rovana 30 Apr 2000 & 26 May 2009 (KD). **Mono County:** Sonora Pass 19 July 1976; 7 & 9 July 1987 (KD); subalpine forest W Saddlebag Lake 31 July 2004 & 13 Aug 2006 (KD); Lee Vining Creek above Upper Lee Vining Camp 24 June 1976 (KD); Lundy Lake area 26 June 1999 (KD). **Tuolumne County:** Sonora Pass area 7 & 9 July 1987 (KD).

**Distribution: California:** Eastern Slope of the Sierra Nevada: Alpine, extreme northern Inyo, extreme eastern Madera, Mono, El Dorado, Sierra, Placer and Plumas counties. This subspecies reaches its southern limit in Pine Creek Canyon near Rovana in Inyo County. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Sagebrush scrub, juniper woodland and openings in forests with lupines. Adults often are seen in large puddle parties along streams and wet spots.

**Flight:** Late May to early September at high elevations.

**d. Evius Blue**—*Icaricia icarioides evius* (Boisduval, 1869).

**Taxonomic notes:** This southern California subspecies occurs in the hotter and drier parts of the Sierra Nevada. Howe (1975) stated in *evius*, that maculation is large and pronounced and the females are almost blue in appearance. The hindwings upperside in females usually have orange scaling. Males have a narrow, well defined terminal line.

**Type Locality:** La Crescenta, Los Angeles County, California.

**Records: California: Kern County:** Pine Flat south end of Kern Plateau 6 June 1986 (KD); Greenhorn Mountains at Shirley Meadows 6 July 1975 & 11 July 1981 (KD). East slope Piute Mountains W of Sageland 28 May 2001 & 23 May 2005, showing some blending to *eosierra*. **Tulare County:** Pine Flat N of Kern County line 6 June 1986 & 2 July 2011 (KD). Greenhorn Mountains N of Portuguese Pass 26 June & 11 July 1981 (KD); W of Baker Ridge 10 & 17 June 1996 (KD), blending with nominotypical *icarioides* which also occurs along the upper Kern River and up the W slope of the Sherman Pass Rd.

**Distribution: California:** Kern and southern Tulare counties on the west slope of the Piute Mountains, Greenhorn Mountains and up the Kern River drainage to the lower Sherman Pass Rd where *evius* blends with nominotypical *icarioides* and at Pine Flat at the south end of the Kern

Platea on the Kern/Tulare County line and on the Chimney Peak Rd where *evius* blends into subspecies *eosierra*.

**Habitat:** Hotter and drier areas along the Kern River and on mountain slopes where bush lupines and other lupines (the larval hosts) grow in the Upper Sonoran and Transition Life Zones. This subspecies often shares its *Lupinus excubitus* host plants with *Glaucoopsyche piasus excubita* and *Plebejus melissa*.

**Flight:** April to mid-July.

**133. Shasta Blue—*Icaricia shasta*** (W. H. Edwards, 1862).

**Taxonomic note:** The name *comstocki* is now considered a synonym of nominotypical *shasta*.

**a. Shasta Blue—*Icaricia shasta shasta*** (W. H. Edwards, 1862).

**Taxonomic notes:** This species has often been placed in the genus *Plebejus* in the literature. Nominotypical *shasta* (including form “comstocki”) is larger than subspecies *calchas* on the east side of the Sierra Nevada, with broader black borders in the males.

**Sierra Nevada Type Locality:** Sheppard (=Shepherd on maps) Pass Trail West/head of Tyndale Creek 11,000-12,200', Tulare County, California.

**Records:** **California: Alpine County:** Carson Pass 9000' 24 Nov 1995 very LATE (AMS); **Alpine and El Dorado Counties:** vicinity of Carson Pass 9500'-10,000' 1 Aug 1980 and one 7 Oct 1980 (AMS). **Fresno County:** Kaiser Crest 28 June to 30 July 1930 (LMI); 21 July 1973 (CS). **Mono County:** E above Saddlebag Lake 14 Aug 1970; 16 & 18 July 1973 (KD); Sonora Pass 16 July 1957 (JWT); S of Sonora Pass, 10,800' 12 July 1994 & 10,200' 9 Aug 1998 (KD); ridge E of Mt. Conness 13 & 20 July 1976 (KD). **Nevada County:** Donner Pass 7000' 25 Oct 1995 (AMS). **Sierra County:** Packer Saddle, Tahoe National Forest 13 July 2012 (SFSU - BSNC). **Nevada: Douglas County:** Carson Range, East Peak area 28 June 1985 (GTA). **Washoe County:** Carson Range, Tahoe Meadows 21 July 1986 & 17 July 2000 (GTA).; Trail to Relay Peak W of Mt. Rose summit 11 July 2012 (JGP); Tahoe Rim Trail, Mt. Rose Trailhead 2 Aug 1988 and 27 Aug 1989 (JD).

**National Park Records: Sequoia NP: Tulare County:** Mineral King 26 July 1933 (G. H. Reid); Mineral King above 10,000', no date (JHM); Mineral King: White Chief Trail 15 Aug 1979 (Wayne Dawes); Shepherd Pass 26-28 July 1966 (S. Johnson) and Shepherd Pass Trail between Wright Lakes and Tyndall Creek 11,200'-12,200' 27 July 1999 (Scott Ellis & S. Johnson). **Yosemite NP: Madera/Tuolumne Counties:** Mt. Lyell Base Camp 9 Aug 1958 (AOS). **Tuolumne County:** From Lyell Base Camp to summit of Kuna Crest 12,000' 7 July 1933 (JSG); Tioga Pass 14 July to 20 Aug 1958 (AOS); Mt. Dana, W slope 17 Aug 57 & 30 Aug 1958 (JWT); Gaylor Lakes Trail 3 Sep 1958 (JWT); Upper Gaylor Lakes 14 to 19 July 1958 (AOS).

**Distribution: California:** This easily overlooked very small blue is recorded mostly on the Sierra Nevada west slope or along the Sierran Crest or high country in Alpine, Amador, El Dorado, Inyo, Fresno, Madera, Mariposa, Mono, Nevada, Placer, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** This species occurs at higher elevations from the upper Canadian Life Zone up into above timberline in the Arctic-Alpine Life Zone. It typically occurs on open, exposed, sunny, gravelly rocky ground above timberline in the alpine-fell fields, occurring in sagebrush scrub with scrubby, low growing and sparse vegetation. Host plants include *Astragalus* and *Lupinus*. For additional specific records and information, see J. Emmel & O. Shields, 1978 (80) and Davenport (2007).

**Flight:** Late June into early September.

**b. Shasta Blue—*Icaricia shasta calchas*** (Behr, 1867).

**Taxonomic notes:** This subspecies differs from nominotypical *shasta* by its smaller size and narrower black borders than the males of nominotypical *shasta*.

**Sierra Nevada Type Locality:** Mono Lake, Mono County, California.

**Records: California: Inyo County:** South Fork of Bishop Creek near Table Mountain Camp at about 8700', one male 10 July 2014 and 5 or 6 males 13 July 2014 (KD). **Mono County:** Mono Lake 20 July 1958 (AOS).

**Distribution: California:** This subspecies occurs on the east slope of the Sierra Nevada in at least Inyo and Mono Counties (including the higher Bodie Hills east of the Sierra Nevada).

**Habitat:** Cushion plant associations on rocky soils and in alpine fell-fields above timberline.

**Flight:** July-August.

**134. Acmon Blue—*Icaricia acmon acmon*** (Westwood, (1851).

**Taxonomic notes:** This species is frequently placed in the genus *Plebejus* in the literature.

**Type Locality:** San Francisco, San Francisco County, California.

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 17 May 1985 (KD); Potwisha 17 May & 27 July 1985 (KD); Mineral King on Monarch Lakes Trail 26 July 1985 (KD). **Yosemite NP: Tuolumne County:** Hetch-Hetchy Summit 13 July 1956; Tuolumne Meadows 3 Sep 1958 (JWT); Smoky Jack 4 July 1954 (JWT).

**Distribution: California:** This species is found in all counties in the Sierra Nevada and in all life zones, though scarce or absent on the higher peaks. This is one of the most common and widespread butterflies in California.



**Habitat:** Unrestricted, this species may occur in almost any habitat in the Sierra Nevada, but despite its ubiquitous occurrence in California, its total range seems limited to the Pacific states with records east into the Nevada Sierra Nevada Counties

**Flight:** Late February to mid-November. Contrary to single-brooded Lupine Blue complex blues, *acmon* flies in successive broods throughout the season. Often, *acmon* can be separated from the *lupini* complex blues by just the dates observed. Seeing a series of *acmon* from earlier or later in the season than when local “Lupine Blue” complex butterflies fly will help the viewer in being able to tell what is an *acmon* and what is not most of the time. *Acmon* tend to be smaller than most *lupini* complex blues, excepting *alpicola*.

**General:** If a butterfly person comes to the Sierra Nevada to see this butterfly, likely that person is from another state!

### 135. Lupine Blue—*Icaricia lupini* (Boisduval, 1869).

**Taxonomic notes:** This blue was incorrectly named based on an assumption the host plants are lupines when members of this complex actually use the buckwheats (*Eriogonum* species) such as *umbellatum*. To make identification problems more difficult, Acmon Blues will also use some buckwheats as larval hosts.

John F. Emmel, Paul Opler and the author have been studying the Lupine Blue complex for the last 20 years or longer. It is still not known how to sort out relationship issues with *alpicola* and *goodpasturei* which are left in *lupini* for now. Some want to hang on to past traditional views that many taxa now being called *lupini* are actually *acmons*. Paul Opler and I agree that seems to be true with *texana*, a multibrooded entity which apparently uses both legumes and buckwheats as larval hosts. But *texana* is not in the Sierra Nevada so a non-issue in the Sierra Nevada faunal list. How to place this group to species or subspecies can be contentious.

#### a. Lupine Blue—*Icaricia lupini lupini* (Boisduval, 1869).

**Taxonomic notes:** There are colonies of this complex as far south as Bishop Creek in Inyo County that may refer to nominotypical *lupini* or at least close to it. *Icaricia chlorina* also occurs in this drainage.

**Sierra Nevada Type Locality:** Gold Lake, Sierra County, California.

**Records:** **California:** **Alpine County:** Leviathan Peak, Monitor Pass, Humboldt-Toiyabe National Forest 15 July 2019 (PAO-EBO). **Fresno County:** Nellie Lake 9400' 17 June to 21 July 1930 (LMI). **Inyo County:** Pine Creek Canyon NW of Rovana 26 May 2009; 6 May 2012; 18 May 2013 (KD); Aspendall 12 June 2014 (KD) and South Fork Bishop Creek 8300' 13 July 2009 & 12 June 2014 (KD). **Mono County:** Lundy Lake 26 June 1999 & 27 June 2012 (KD); Lower Rock Creek 9 May 1997 & 14 May 2006 (KD). **Nevada County:** Castle Peak 9000' 29 Sep 1993 (AMS). **Placer County:** Martis Creek Recreation area 14 June 2003 (KD & Bruce Webb). **Plumas County:** Round Lake Loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Jones Valley, Tahoe National Forest, 21 June 2016 (SFSU-BSNC).

**Nevada: Washoe County:** Carson Range: 1 mi N of Crystal Bay, vicinity of First Creek, 30 June 2003 (GTA); Carson Range, First Creek area 10 July 2003 (GTA); Carson Range, Truckee River 29-30 May 2019 (MW); Jones-White Creek Loop Trail, Galena Regional Park 2 June 2012 (JD).

**Distribution: California:** Alpine, Fresno, Inyo, Mono, El Dorado, Nevada, Placer, Plumas, Sierra and Yuba counties. This list is tentative because of not knowing what actual *lupini* complex entity was the basis for state county listings. **Nevada:** Washoe County.

**Habitat:** This blue occurs in areas where *Eriogonum umbellatum* grows in a variety of habitats, often in sandy soils, roadsides, sandy slopes and canyon walls. This subspecies has had little written about it in the Sierra Nevada but is known from Upper Sonoran, Transition and Canadian Life Zones.

**Flight:** Mid-May through July.

**b. High Sierran or Alpine Lupine Blue—*Icaricia lupini alpicola*,** Emmel, Emmel & Mattoon, 1998.

**Taxonomic notes:** This subspecies is smaller than nominotypical *lupini*, has a duskier appearance on the upperside of males, more extensive blue overscaling of the females and greater development of the spotting on both upper and lower sides.

**Sierra Nevada Type Locality:** Barney Lake 10,240-10,400', Mono County, California.

**Records: California: Inyo County:** Mono Pass 30-31 Aug 1967 (PAO). **Fresno County:** Huntington Lake 27 June 1936 (LACM); Kaiser Crest 10,000' 15 June 1966 (RES). **Madera County:** 33 mi E Bass Lake 22 June 1987 (PAO); Fresno Dome and saddle 1-2 July 1996 & 11 July 1999 (KD). **Mono County:** W side Saddlebag Lake Dam 10,050' 26 June 1976 & 5 July 1989 (KD); trail SE side Saddlebag Lake 10 July 2004 (KD/BG); south facing slope N above Sonora Pass 7 July 1987 (KD); Warren Creek off Tioga Rd 9000' 5 July 2006 (KD). **Tulare County:** Granite ridge N of Big Meadow (near KCNP) 23 June 1989 & 1997 (KD). **Tuolumne County:** Meadows 2 mi W of Sonora Pass 3 July 1959 (RES, PAO/Nora Opler).

**National Park Records: Sequoia NP: Tulare County:** Trail between Wright's Lakes & Tyndall Creek 11,200'-12,200' 27 July 1966 (Scott Ellis & S. Johnson); Mineral King at Timber Gap Trail 9000' 22 July 1991 (KD) and White Chief Trail 9200-9400' 23 July 1992 (KD); Bighorn Plateau (Pacific Crest Trail) 4 July 2012 (EL); Mt. Langely, Army Pass Trail 12,500' 18 July 2016 (Mary Maki). **Yosemite NP: Tuolumne County:** Mt. Dana, W slope 16 Aug 1952; 6 Aug 1953 & 20 July 1958 (JWT); Crest W of Tioga Pass 12 July 1957; 19 Aug 1958 and 25 June 1961 (AOS); Upper Gaylor Lake 14 to 19 July 1958 (AOS); Smoky Jack 3-4 July 1954 (JWT); Burro Pass area near Matterhorn Peak 12 Sep 2019 (MW).

**Distribution: California:** Extreme southern Alpine, Fresno, Inyo, Madera, Mariposa, Mono, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas & Washoe counties.

**Habitat:** Alpine-fell fields where the larval host *Eriogonum ovalifolium* grows above timberline and on rocky slopes in the Canadian, Hudsonian and lower Arctic-Alpine Life Zones.

**Flight:** Late June-August.

**c. Goodpasture's Lupine Blue—*Icaricia lupini goodpasturei* Austin, 1998.**

**Taxonomic notes:** This subspecies is like nominotypical *lupini* in size, dorsal color and pattern and similar to *monticola* in ventral pattern and color.

**Type Locality:** Nevada: White Pine County: Schell Creek Range, Timber Creek, 5 road miles east of Nevada route 486, 2740m.

**Records: California: Mono County:** Lee Vining 3 to 5 July 1938 (JWT); below Conway Summit 23 June 1962 (JWT). This subspecies is also known from Warren Creek Canyon.

**Distribution: California:** This subspecies occurs on the east slope of the Sierra Nevada in the Lee Vining area north to at least the Bridgeport area. I collected an extensive series of *goodpasturei* in the Bodie Hills at high elevations of about 9000' June 9 & 11, 2004 and 21-22 June 2006, east of the Sierra Nevada.

**Habitat:** Brushy hills with *Eriogonum umbellatum* at high elevation.

**Flight:** Mid-June to mid-August.

**136. Green Blue—*Icaricia chlorina chlorina* (Skinner, 1902).**

**Taxonomic notes:** This blue has usually been placed in the genus *Plebejus* in the literature. The Green Blue was formerly believed to be a form of the Lupine Blue (*monticola*) but *chlorina* uses *Eriogonum umbellatum* as its larval host while *monticola* uses *Eriogonum fasciculatum*. Both were elevated to full species status in a publication treating the southern California butterfly fauna (K. Davenport, 2018) for reasons explained in that publication.

**Type Locality:** Tehachapi, Kern County, California. An irony of the distribution of this butterfly is that it was originally believed to be a butterfly limited to the Tehachapi Mountains. In reality, the bulk of this butterfly's range is in the Sierra Nevada!

**Records: California: Inyo County:** Upper Nine Mile Canyon on *Eriogonum umbellatum* 6 July 1983 (KD); E of Whitney Portal 18 & 24 June 2006 & 27 July 2018 (KD); South Fork of Bishop Creek from 8300' to 8600' 7 & 8 July 1979; 23 June 1986 and other dates (KD). *Chlorina* occurs in Inyo County east slope populations which are not likely to be subspecies *argentata* (Emmel, Emmel & Mattoon, 1998b) which occurs in the desert ranges east of the Sierra Nevada. **Kern County:** S end of Kern Plateau at Pine Flat 5 July 2003 (KD); Piute Mountains: Piute Mountain Vista 6 July 1974 (JB) and 4 July 2000 (KD); Piute Mountain Rd milepost 6-7, upgrade from Bodfish/Havilah summit 4 & 17 July 2000 & 5 July 2002 (KD); Greenhorn Mountains, N of Tiger Flat 15 & 22 July 2000 (KD); Old State Rd 5.4 to 6.1 road mi above

Wofford Heights 8 July 2001 & 20 June 2002 (KD). **Mono County:** Mill Creek Canyon, end of road, July 2019 (PO-EBO); **Tulare County:** 2 mi W of Bald Mountain turnoff on Sherman Pass Rd (metasedimentary rock), 6 July 1982 (KD); Kennedy Meadows Rd on hill above road summit S Kennedy Meadows 19 June 2017 on *Eriogonum umbellatum*; Cherry Hill Rd S of Sherman Pass Rd from Alder Creek bridge and 5 mi S on *E. umbellatum*, sympatric with *E. glaucon comstocki* 12 July 2017 (KD); Greenhorn Mountains, Baker Ridge Lookout 7 July 2002 & 3 July 2004 (KD).

**Distribution California:** Until about 20 years ago, it was believed that *chlorina* was most likely just a form of *monticola* or considered a Lupine Blue subspecies but one that was very rare in which the blue has a greenish tinge. Since then it has become evident that this blue is actually far more widespread than previously believed, occurring often with another one of the very rare blues-- *Euphilotes glaucon comstocki* which as it turns out are not so rare either! Both often occur together on *Eriogonum umbellatum* in the Piute, Greenhorn and southern Sierra Nevada on the Kern Plateau; *chlorina* ranges northward to Mill Creek Canyon in Mono County. There are records for *chlorina* in Inyo, Kern, Mono and Tulare Counties. As far as the coloration of *chlorina*, males tend to have a different shade of blue than *monticola* and not all human eyes (mine included) can see the “green” color; some see the color as blackish.

**Habitat:** Sandy or rocky soils in Mojave Desert or montane locations with *Eriogonum umbellatum* in Upper Sonoran, Transition and lower Canadian Life Zones.

**Flight:** As early as late May in the Kelso Valley area but usually mid- June to early August at higher elevations in forested habitats.

**General:** In the Piute Mountains going up the road from Bodfish-Havilah road summit on July 4, 2000 and July 5, 2002 it was amazing looking down at the Kern River Valley and Lake Isabella to mileposts 5-7 near the milepost 6 sign. Below there the prevailing buckwheat was *Eriogonum fasciculatum* and one could find Bernardino Blues (*E. bernardino*) and Clemence’s Blues (*I. monticola*), but a few yards up the road, *E. fasciculatum* was replaced with *Eriogonum umbellatum* and those *E. bernardino* and *I. monticola* were replaced with **Green Blues** (*I. chlorina*), believed to be ssp. *argentata* at that time) and Comstock’s Blues (*E. glaucon comstocki*). Two articles documenting this were published to show that Comstock’s Blues were a different species than Bernardino Blues. Those same observations also demonstrate *Icaricia chlorina* and *Icaricia monticola* are also two different species and that was mentioned. (Davenport 2002 a and b). The same species replacement situation occurs on the Old State Road in the Greenhorn Mountains, and on the Sherman Pass Rd. in the southern Sierra Nevada,

**137. Clemence’s Blue—*Icaricia monticola*** (Clemence, 1909)-Southern Sierra Nevada segregate.

**Taxonomic notes:** This appears to be a species not a *lupini* or a *chlorina* that uses *Eriogonum fasciculatum* as its host plant. While there are some places where both *chlorina* and *monticola*

share common areas, in general *monticola* inhabits lower elevations with its larval host with *chlorina* using *Eriogonum umbellatum* as its larval hosts at higher elevations within their ranges.

The arguments for giving *monticola* species-level status include the above field observations and other morphological, biological and genetic species concepts (Davenport 2002 & 2018 and Opler & Davenport, 2015). The Sierra Nevada populations appear rather different than those elsewhere in southern California but need more study before they can be described and named.

**Type Locality:** “Vicinity of Pasadena, Calif.”; syntypes from Upper Arroyo Seco, Los Angeles, County, California for the nominotypical populations.

**Records: California: Kern County:** Chimney Peak Rd S Lamont Peak 5 & 13 June 1999; 0.7 mi SW of Sageland N of Kelso Valley 15 May 1976 (JB/KD) 29 Apr 1992 & 16 May 2005 (KD). Greenhorn Mountains: Old State Rd 3 & 17 May 2005 (KD) and Wofford Heights 20 June 2002 (KD). **Tulare County:** 2-4 mi S of Johnsondale 6 & 18 June 1983 (KD); Sherman Pass Rd at 4900’ 18 June 1983 (KD); upper Kern River at Goldledge Creek, 24 Apr & 9 May 1981 (KD) and Ant Canyon E of Kern River 9 & 15 May 2007 (KD).

**Distribution: California:** Kern and southern Tulare counties in the southern Sierra Nevada including the Kern Plateau, Piute and Greenhorn mountains eastward into the Kelso Valley region and Walker Pass. The northern limits for *monticola* in the Sierra Nevada appear to be Walker Pass on the east slope and the upper Kern River drainage near Johnsondale and the Sherman Pass Rd E of the Kern River up to about 6000’.

**Habitat:** This blue is usually found in the Upper Sonoran Life Zone in chaparral, foothill woodland and in the southern Sierra Nevada in Mojave Desert plant communities near Walker Pass and in the Kelso Valley region. Colonies can be found on hillsides where the host grows and along roadsides and in canyons and on flats. This is often a very common butterfly.

**Flight:** The second half of April to early July most years with peak flights in May and the first part of June. This butterfly is single-brooded and flight dates alone can often tell the observer whether he has *acmon* or not.

**General:** This is the “Lupine Blue” that is an identification nightmare for those who rely only on coloration and field marks. The confusion is based on how to tell an Acmon Blue from a Lupine Blue. And it is true females are hard to tell apart and not all individuals can be separated. Males of *monticola* tend to have different shades of blue coloration above than *acmon* or *chlorina* and the orange aurora of *monticola* tends to be bolder than *acmon* and lack a pinkish tinge. Spotting tends to be bolder in *monticola*. The best way to tell is to carefully observe what these butterflies are doing in the field and what plants, especially what buckwheats they are associated with. But be careful: while *acmon* usually use legumes as larval hosts, they sometimes use buckwheats as well. This butterfly’s sole host is *Eriogonum fasciculatum*.

Those who try to separate *acmon* from *lupini* may have to base their decisions on what field marks apply to different subspecies or species in the *lupini* complex, and realize *monticola* and *chlorina* and other taxa may not be *lupini* either.

**138. Veined Blue—*Icaricia neurona*** (Skinner, 1902).

This butterfly is endemic to California and has a very limited range. Colonies seem to be transient and flights seem correlated to sufficient rainfall. The hostplant is Wright's Buckwheat.

**Type Locality:** Doble, San Bernardino Mountains, San Bernardino County, California.

**Records: California: Kern County:** Butterbrecht Peak 28 Apr through May 1985 (JGP), southernmost record in the Sierra Nevada, this population was transient; Pacific Crest Trail up from Fay Creek Trailhead N of Weldon 14 June 1980 (KD); ravine 0.7 mi SW of Sageland 14 June 1978 & 27 May 1993 (KD, no recent records); Bird Spring Pass 13 May 2000 (KD); Piute Mountains 1.5 to 3 mi S Bodfish 8 and 12 May 1976 & 31 May 1977 (MS); Greenhorn Mountains: Sawmill Rd 2.5 to 4 mi W of SR 155, 27 May 2000 (KD) & 22 May 2002 (KD/PAO). **Tulare County:** Upper Kern River at Southern California Edison Dam along road at side canyon, 2 stray individuals 9 May 2007 (KD), no colony is known there; south of Chimney Creek and W slope Lamont Peak 29 June 1975 (JB) and N side Lamont Peak on slope near Lamont Meadows 4 & 6 July 1983 (KD); Sherman Pass Rd at sedimentary outcrops W Bald Mountain turnoff 6 July 1992 and 24 June 2000 (KD), north for the Sierra Nevada; W of Sherman Pass at 4900' 20 May 1999 (Jack Levy).

**Distribution: California:** Kern and southern Tulare Counties as far north as the Sherman Pass Rd W of Sherman Pass and the sedimentary rock outcrop on that road just NW of Bald Mountain in Tulare County.

**Habitat:** Roadsides, streams or slopes where *Eriogonum wrighti*, the larval host, grows. Drought seems to adversely affect flights and several colony sites have become unreliable or extirpated for this species in recent years.

**Flight:** Mid- April to mid-July. Wet years can lead to small to moderate late season flights in late August and early September on Mt. Pinos in western Kern and Ventura counties at the south end of the San Joaquin Valley. There are no such records yet recorded in the Sierra Nevada.

**General:** This is one of the butterflies that most attracts butterflyers to the southern Sierra Nevada but it is also a butterfly that often disappoints those looking for it. Because of its small size and localized occurrence, it is frequently overlooked and hard to find. Acmon Blues and members of the Lupine Blue complex (both *monticola* and *chlorina*) can also have orange going up the forewings, but their veins do not have orange. NABA members at the 2008 meeting also learned that San Emigdio Blue females can have orange going up their forewings, not noted in the literature at that time. Both species are of limited range and endemics to a very small part of California.

**139. Heather Blue**—*Agriades glandon cassiope* (Emmel & Emmel, 1998).

**Taxonomic notes:** The discovery of this butterfly created a real impact on the butterfly world when J. F. Emmel & T. C. Emmel (1998) published their paper in the “Systematics of Western North American Butterflies” publication describing the “Heather Blue” as a species (*Agriades cassiope*), since reassigned to being a subspecies of *Agriades glandon* (dePrunner).

I personally knew of its this blue’s existence when I caught two strange “Arctic Blues” while collecting a steep slope on the Dana Plateau (a spot Jim Brock shared with me on where to find *Parnassius behrii*) in August 1975 and after having confirmation of one of those by John Emmel, I collected a series in 1993. Later in 2014, Jeffrey Glassberg, the knowledgeable Karen Amstutz, and I and others climbed up there on the Yosemite Butterfly Count. How Jeff could carry that big camera up that steep rocky slope impressed me, and he did get pictures. So, it was historical for both of us.

**Sierra Nevada Type Locality:** Lake Tahoe region, slope due south of Dick’s Pass 8800’-9000’, El Dorado County, California.

**Records: California: El Dorado County:** Lake Tahoe region, slope due south of Dicks Lake, 0.2 air mi W and WNW of Dick’s Pass, 8,800’-9000’ 19 July 1988 (JFE); Angora Lake, larvae June 1991 (JFE); Jabo Lake 29 June 2001 (JFE). **Inyo County:** single individual, E side of the Sierra Nevada, Big Pine Creek 9600’ 29 July 2006 (Greg Chatman); colony found nearby at 10,300’ 16 July 2007 (Greg Chatman & JFE). **Mono County:** N slope Mt. Dana Plateau above Ellery Lake 11,000’ 17 Aug 1975; 22 & 24 July 1993 (KD); Virginia Lakes, Red Lake 10,000’ 30 July 1993 (JFE); Glacier Canyon (Dana Plateau) 10,500’ 2 Aug 1981 (RLL); Greenstone Lake & NW side Saddlebag Lake 10,320-10,560’ 26 July 1997 (JFE).

**National Park Records: Yosemite NP: Tuolumne County:** N slope of Mt. Dana 8 Aug 1981 (RLL); slope between W shore of Elizabeth Lake and summit ridge of Unicorn Peak 10,000’-10,200’ 15 July 1989 (JFE/AOS); SW of Tioga Pass 7 July 2001 (Herbert Clark, photo); near Virginia Peak 3 Aug 2003 (SS).

**Distribution: California:** El Dorado, Inyo, Mono and Tuolumne counties. This species is likely to occur in several additional Sierran counties in the “High Country” accessible only by trail but the inaccessibility of that region that has no roads is a major problem. It is likely *cassiope* will turn up in Fresno and Tulare Counties.

**Habitat:** Areas on rocky terrain at high elevation, usually above 10,000’ elevation where seeps and drainages allow the host, *Cassiope mertensiana* (White Heather), to grow.

**Flight:** 29 June to 7 September based on existing records.

**General:** Finding or getting to the colonies where this butterfly occurs can be difficult. Climbing steep grades on avalanche slopes with giant boulders, loose rock and slippery streamsides is treacherous, a fall could cause major injuries, or falling off a cliff or a waterfall could be fatal. As strange as it sounds, I actually did collect one Heather Blue by the side of a giant rock in a flat wet meadow on the NW side of Saddlebag Lake filled with *Colias behrii* and *Agriades*

*podarce*. There is a colony of Heather Blues on that side of Saddlebag Lake so this was likely a stray. John Emmel reported a much larger colony exists higher up the slope on the northeast side of the lake.

**140. Sierra Nevada Blue—*Agriades podarce*** (Felder & Felder, 1865).

**Taxonomic notes:** This butterfly has gone under many different names: *franklinii*, *aquilo*, and *glandon*. The discovery of the Heather Blue in the “high Sierra” revealed a shocking truth! There is more than one Arctic Blue in the United States! J. F. Emmel & T. C. Emmel (1998) elevated this subspecies to a species-level taxon, no longer a *glandon* subspecies. There are two subspecies in the Sierra Nevada.

**a. Sierra Nevada Blue—*Agriades podarce podarce*** (Felder & Felder, 1865).

**Sierra Nevada Type Locality:** Summit Valley, at south end of Lake Van Norden, Donner Pass, Placer County, California.

**Records: California: Sierra County:** Howard Creek Road, Tahoe National Forest 30 June 2018 (PAO); Upper Jones Valley, Bald Mountain Range, Tahoe National Forest 4 July 2007 (SEABA-C); Yuba Pass meadow, Tahoe National Forest, 22 June 2016 (SFSU-BSNC). **Nevada: Carson City County:** Carson Range, Marlette Lake Rd at Snow Valley Peak Rd 19 Aug 1980 (GTA); Carson Range, Nv 28, 2 mi S of Washoe Co. line 1 July 1985 (GTA). **Washoe County:** Carson Range, Nv 431, 2 mi E of Mt. Rose Summit 9 Aug 1980 (GTA); Carson Range, NE side of Marlette Lake 19 Aug 1980 (GTA) and Carson Range, Tahoe Meadows 21 July 1986 (GTA).

**Distribution: California:** El Dorado, Nevada, Placer, Plumas (*cilla?*), Sierra and Yuba counties. Oddly, populations to the north of the Sierra Nevada including the Mt. Lassen area are subspecies *cilla*, which also occurs south of Donner Pass. The nominotypical subspecies has a relatively small distribution in the northern Sierra Nevada from the northern Lake Tahoe region (Mt. Rose, Washoe County, Nevada) northward from the Donner Pass area to the Gold Lake and Yuba Pass regions. **Nevada:** Carson City and Washoe Counties.

**Habitat:** Wet meadows with Shooting Stars, *Dodecatheon alpinum*, the larval host, usually in the Canadian and Hudsonian life zones, sometimes in the Arctic-Alpine zone.

**Flight:** Mid-June- July. Later records seem likely.

**b. Sierra Nevada Blue—*Agriades podarce cilla*** (Behr, 1867).

**Taxonomic note:** This subspecies is distinguished by well-developed spotting ventrally as compared to the nominotypical *podarce*. Some populations have individuals with increased whitish overscaling dorsally similar to nominotypical *podarce*.



**Sierra Nevada Type Locality:** An elevation of 11,000' and over, on the snowy heights surrounding the headwaters of the Tuolumne River, meadow east of Tioga Pass, Mono County, California.

**Records: California: Fresno County:** Kaiser Pass & Huntington Lake 26 June 1966 (KCH); Kaiser Pass Meadow 4 July 2002 (RE). **Inyo County:** South fork Bishop Creek, Lake Sabrina 18 July 2019 (PO-EBO); 5 mi NW Ruby Lake 4 Sep 11 (Paul Johnson II); Mono Pass 11 Aug 2006 (Howard Grisham/Ricky Patterson); North Lake Camp 13 July 2009 (KD). **Madera County:** 9 mi E Bass Lake 15 June 1984 (PAO); wet meadows along Fresno Dome Trail 1-2 July 1996 and 5 July 1999 (KD). **Mono County:** Subalpine meadows W below Saddlebag Lake 13 Aug 1970 & 26 July 1981 (KD); NW side Saddlebag Lake 26 July 1997 (JFE) and 31 July 1999 (Jack Levy); Virginia Lakes 10,000' 30 July 1993 (JFE). **Tulare County:** Quaking Aspen 2 June 2013 EARLY (KD); Lower Vidette Lakes 27 July 1991 (JFE & Tom Emmel); Big Meadow (Kern Plateau) 13 June 1972 (JB/CS) 23 June 1973 & 16 June 1974 (JB); meadows W and E of Sherman Pass 4 July 2004 and other dates (KD); Paloma Meadows 24 June 2000 (KD). **Tuolumne County:** Meadow 2 mi W Sonora Pass 3 July 1959 (RES/PAO/Nora Opler). **Nevada: Douglas County:** Carson Range, US 50, Montreal Canyon, 6 July 1981 (GTA); Carson Range, Heavenly Valley North, East Peak area 28 June 1985 (GTA).

**National Park Records: Kings Canyon NP:** Village Meadow 10 July 1989 (KD) and Wilsonia 10 July 1989 (KD). **Sequoia NP: Tulare County:** Halstead Meadow 2 July 1977 (PN); Mineral King, Monarch Creek 9600' 26 July 1985 (KD); Mineral King: White Chief Trail 9300'-10,000' 23 July 1992 (KD); Mineral King Valley 19 July 1993 (KD); Dorst Camp 16 July 1992 (KD); Bighorn Plateau 11,400', 4 July 2012 (EL). **Yosemite NP: Mariposa County:** Bridalveil Creek off Badger Pass Rd 23 June 1959 (JSG). **Tuolumne County:** Tioga Pass 7 July 1931 (JSG) & 16 Aug 1957 (JWT); Tuolumne Meadows 16 July 1957 (JWT); Mt. Dana, W slope 17 Aug 1957 (JWT); Dana Meadows 29 July 2019 (YBC); Upper Gaylor Lake 1 Aug 1958 (JSG).

**Distribution: California:** Alpine, Amador, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Placer, Plumas, Tulare and Tuolumne counties. **Nevada:** Douglas County.

**Habitat:** Wet meadows with the Shooting star hosts (*Dodecatheon alpinum* and *D. jeffreyii*) in the Canadian, Hudsonian and occasionally in the Arctic-Alpine life zones in drainages from melting snow.

**Flight:** June-August, into early September in years with a late summer.

**Metalmarks.**

### **Family Riordinidae.**

#### **141. Mormon Metalmark *Apodemia mormo* (Felder & Felder, 1859).**

It appears that the Mormon Metalmark is a complex of at least 4 biological species based on rearing studies and field data (Pratt & Ballmer, 1991). The host plants are various buckwheats. Others doing DNA work of this complex believe separating this complex does not justify treating

different entities on the complex as species level taxa, while others (unpublished work) say it does.

**a. Mormon Metalmark—*Apodemia mormo mormo*** (Felder & Felder, 1859).

This subspecies is mostly black on both forewings and hindwings.

**Sierra Nevada Type Locality:** Davis Creek Park, W. of Washoe Lake, Washoe County, Nevada.

**Records: California: El Dorado County:** Glen Alpine Spring 25 Aug 1997 (JFE); Grass Lake, 8000' 27 Aug 1947 (H.P. Chandler); Horsetail Falls, 7000' 23 Aug 1947 (CDM). **Mono County:** Mono Lake 22-26 Aug 1957 and 20 July 1958 (AOS); June Lake 22 Aug 1957 (JSG); Conway Pass N of Mono Lake 21 Aug 1960 (JWT); Green Canyon 5 Aug 1996 (BRB); Little Walker River Rd 2-4 mi. W of US 395 30 July 2004 (Al & Tom Rubbert); Pickle Meadow 6800' 28 July 1939 (F.H. Rindge). **Placer County:** Chipmunk Ridge, El Dorado National Forest, 17 Aug, 1 Sep 1947 (RLL); Deer Park, 7900' 20 Aug 1910 (E.J. Newcomer). **Tuolumne County:** Strawberry Lake 1 Sept 1930 (R.G. Wind).

**Nevada: Douglas County:** Carson Range, Lower Daggett Creek, 23 Aug 1981 (GTA).

**National Park Records: Yosemite NP: Mariposa County:** Little Yosemite Valley 3 Aug 1933 (JSG).

**Distribution: California:** El Dorado, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tuolumne (?) and Yuba counties. Nevada: Carson City, Douglas and Washoe counties. Very little has been published in terms of specific records in the northern Sierra Nevada. Most records are on the Sierra Nevada east slope with Little Yosemite Valley a notable exception, documented by Garth & Tilden, 1963).

**Habitat:** Dry hillsides on the east side of the Sierra Nevada in areas with buckwheats, sagebrush, and nectar sources. Adults readily go to flowers.

**Flight:** August-September.

**General:** These small metalmarks are very rapid and elusive fliers, difficult to observe, net or photograph unless one goes to a flower or perches on vegetation. They can easily be mistaken for hairstreaks, coppers or blues while in flight.

**b. Cythera Metalmark—*Apodemia mormo cythera*** (W. H. Edwards, 1873).

This subspecies tends to have orange forewings with much more orange on the hindwings than nominotypical *mormo*, and it tends to have more white spots and is less dark below than *tuolumnensis*.

**Sierra Nevada Type Locality:** 9 miles west of Lone Pine, Inyo County, California.

**Records: California: Inyo County:** Below Whitney Portal 1 Sep 2002 and just E of the Portal 27 July 2018 on *Eriogonum umbellatum* (KD); Big Pine Creek 7600', W of Big Pine (JFE, SOM, Chuck Hageman); 7 mi W of Independence 1 Aug 1976 (CS). **Mono County:** Little Rock Creek 6200'-6700' (Old Hwy 395) 25 Aug 1983 (RLL); flat above Lower Rock Creek Gorge 25 Aug 1998 (KD); Swall Meadow area overlooking Lower Rock Creek Gorge 8 & 25 Aug 1998 (KD).

**Distribution: California:** Inyo and southern Mono counties. *Cythera* is replaced by nominotypical *mormo* somewhere N of McGee Canyon (near Glass Mountain) road where intergrades are found.

**Flight:** Mid-July into October.

**General:** The Whitney Portal area west of Lone Pine is a classic locality for this species as adults swarm the yellow-flowered *Eriogonum umbellatum*. Collecting this butterfly can be dangerous. Richard P. Meyer and I were chased by a mean tempered Mojave Green Rattlesnake on one particularly memorable occasion, a species of rattlesnake purportedly not recorded for that area. I guess like butterflies, rattlesnakes don't read books and range extensions are always possible.

**c. Tuolumne Metalmark—*Apodemia mormo tuolumnensis* Opler & Powell, 1962.**

This is a subspecies characterized by a great extent of orange on the upper side together with a reduction of white spots and dark underside (Garth & Tilden, 1963). Populations in the southern Sierra Nevada appear more similar to *tuolumnensis* than to subspecies *cythera* in Mono and Inyo Counties found on the east slope of the Sierra Nevada.

In the Kern River Valley region in the Piutes, Greenhorns and along the Kern River occasional black individuals are sometimes found within *A. mormo tuolumnensis* colony areas, often in association with *Eriogonum nudum*, but only in late August to the first part of October. These may be referable to *Apodemia virgulti mojavelimbus*.

**Sierra Nevada Type Locality:** Grand Canyon of the Tuolumne, Yosemite National Park, Tuolumne County, California.

**Records: California: Inyo County:** Upper Nine Mile Canyon 29 July 1988 and 5 Aug 2008 (KD, a check of the specimens shows they are *tuolumnensis* and not *cythera*; **Kern County:** Piute Mountains S of Bodfish 10 Sep 1988 (KD); 1.3 mi S of Kernville 1 Sep to 28 Oct 2000 (KD), sympatric with double-brooded *A. virgulti* flying at same locations on same days; Chimney Peak Rd S of Lamont Peak 6 Oct 2001; Butterbredt Peak area 30 July 1982 & 26 Aug 1988 (KD). **Tulare County:** Kern River S of Corral Creek 14 Nov 2002 LATE (KD); Sherman Pass Rd; Dry Creek Canyon 4300' 1 Sep 2003 (KD); below Bald Mountain Lookout 9380' 14 Aug (KD) & 21 Aug 2010 (Jim Snyder); Cherry Hill Rd at Alder Creek (S Sherman Pass Rd) 2 & 16 Sep 2014 (KD).

**National Park Records: Yosemite NP: Tuolumne County:** Grand Canyon of the Tuolumne, Pate Valley, 23 July 1934 (Edmund Godwin); 1 Aug, 20 Aug 1954 (PAO); Hetch-Hetchy Dam 3800' 9 Sep 1964 (AOS).

**Distribution: California:** Extreme southwestern Inyo, Kern, Tulare and Tuolumne counties. Populations using *E. umbellatum* as a host can occur at elevations as high as 9400' (Bald Mountain, Tulare County), possibly higher in Inyo County. A comparison of individuals using *Eriogonum fasciculatum* or *Eriogonum umbellatum* showed no appreciable differences in phenotype in Kern and Tulare counties. In recent years it has become apparent that the range of the *cythera* group extends well south of the Sierra Nevada and even has an extensive range in the Coast Ranges in Kern, Ventura, Santa Barbara, San Luis Obispo, Monterey and Fresno counties, westward almost to the Pacific Ocean.

**Flight:** Mid-July to early November but most populations fly from August to mid-October. Interestingly the spring flights of *Apodemia virgulti davenporti* are much briefer than those of *cythera* and *tuolumnensis*. Could this be possible major differences in life spans? Or longer drawn out emergences or even two broods in late summer and fall for the *cythera* group?

#### **142. Behr's Metalmark—*Apodemia virgulti* (Behr, 1865).**

There appear to be two subspecies in the Sierra Nevada that look quite different with *mojavelimbus* being a very blackish metalmark, but colonies of *davenporti* in the upper Kern River area in Tulare County produce some very blackish individuals.

##### **a. Davenport's Metalmark—*Apodemia virgulti davenporti* Emmel, Emmel & Pratt, 1998.**

**Taxonomic notes:** This subspecies is predominately orange with a fair amount of black on the hindwings, resembling nominotypical *virgulti*, but with less black. This subspecies is single brooded in the spring which differs from many other *virgulti*. Oddly the *mojavelimbus*-like entity in the southern Sierra Nevada is double-brooded, for reasons not yet understood, while that taxon is single brooded in San Bernardino County from where it was described. Until named in 1998, what is now named *davenporti* was treated as being within *Apodemia virgulti virgulti*. Both this metalmark and *Apodemia mejicanus deserti* have been found flying together 2-3 miles east of Walker Pass summit in the spring.

**Sierra Nevada Type Locality:** Walker Pass 5,300', Kern County, California.

**Records: California: Inyo County:** Sage Flat Rd, 0.2 mi W NF boundary 5 May 2001 (JFE); upper Nine Mile Canyon 18 May 2003 (KD). **Kern County:** Walker Pass 5300' 21 May 1983 (SOM); Bird Spring Pass 4500' 22 Apr 2000 and nearby Microwave Hill 5300' 13 May 2000 (KD); Butterbrecht Peak 21 May 1988 (KD); ridges SW of Butterbrecht Peak 29 Apr & 9 May 1993 (KD); Piute Mountains 2-4 mi S of Bodfish 8 to 21 May 1976 (KD); Greenhorn Mountains: Old State Rd at 4500' 26 Apr 1998 & 28 Apr 2002 (KD & SS). **Tulare County:** Brush Crk. Rd at helipad & Dry Creek Canyon 4300' 24 Apr 2013 (KD); upper Kern River E Goldledge Camp along creek 9 May 1981 & 17 May 1994 (KD); E of Kern River, Ant Canyon 6 & 21 Apr 2006

(KD); hills E Calkin's Flat 5 May 1999; 17 & 24 Mar 2015 (KD); Chimney Peak Rd on road cut just W Lamont Meadows 13 June 1999 (Kevin Davenport).

**Distribution: California:** Limited to southwestern Inyo (rare), Kern and southern Tulare counties. The northern limits of the range of *davenporti* seems to be the Sherman Pass Rd in the Dry Creek Canyon/Brush Creek area (Tulare County) and Sage Flat Road (Inyo County). Since the larval host *Eriogonum fasciculatum* goes further north to the Whitney Portal area, *davenporti* should be found further north along the east slope of the Sierra Nevada, many canyons only accessible by poor dirt roads. The southern limit of *davenporti* in the Sierra Nevada is in the Butterbrecht Peak area. This subspecies extends further south of the Sierra Nevada to the Old Ridge Route and the northern San Gabriel Mountains in Los Angeles County.

**Habitat:** Very localized but sometimes common on slopes with the host buckwheats: *Eriogonum fasciculatum* and *Eriogonum wrighti*. The adults often patrol at the bases of steep slopes and visit various flowers for nectar.

**Flight:** Varies with rainfall and weather conditions. Flights range from late March to about mid-June but mid-April to mid-May is the usual time to see them.

**b. Desert's Edge Metalmark *Apodemia virgulti* near *mojavelimbus*** Emmel, Emmel & Pratt, 1998.

**Taxonomic notes:** This is a double brooded population that occurs locally and commonly where found on the east slope of the Greenhorn Mountains and in Kern River Valley (within the range of *davenporti*!) which seems to be associated with *Eriogonum wrighti*, while *E. fasciculatum* is also present. Hooper Hill and populations in Kern Canyon appear to use *Eriogonum nudum* as the host. Similar populations occur in the lower part of Kern Canyon but use *Eriogonum nudum* as their host. The black forms predominate though about 10% of the population is orange colored and can resemble subspecies *davenporti*. In some areas around Lake Isabella and Kernville, this entity flies with *Apodemia mormo tuolumnensis* which some deny can happen.

**Type Locality:** California: San Bernardino County: Ord Mountains...north slope of the San Bernardino Mountains.

**Records: California: Kern County:** Greenhorn Mountains, E slope ½ mi S of Kernville 6 June 1999 & 6 Nov 2002 (KD); ½ mi. to 2 mi S of Kernville 20 & 27 May and again 26 Sep to 28 Oct 2000 (KD); overlapping occurrence with less common *A. mormo tuolumnensis*. Sawmill Rd 3-4 mi W of SR 155, 14 Oct 2000, 23 May & 2 June 2002 and 30 Oct 2002 (all KD); base of hill about 1.5 to 2 mi S of Kernville E side of Lake Isabella 14 Oct 2000 (KD); Stine Cove on E side of Lake Isabella 20 Sep 2008 (KD); Kern River Canyon: mouth of Kern Canyon 21 May 2002 (PAO) & 31 May 2002 (KD); Lucas Creek Trail S side SR 178, 6 to 12 Sep 1992; 1 June 93 & 31 May 2002 (KD).

**Distribution: California:** Kern County only although the *mojavelimbus* phenotype occurs south of Corral Creek and Ant Canyon in Tulare County along the Kern River within populations of *Apodemia virgulti davenporti*.

**Habitat:** Dry hills and chaparral with *Eriogonum wrighti*, usually with *Eriogonum fasciculatum* also present. Limited to the east side of the Greenhorn Mountains (where *Apodemia virgulti davenporti* occurs nearby a month earlier in the spring) and to the west and east sides of Lake Isabella.

**Flight:** Double-brooded in the Greenhorn Mountains and Lake Isabella area near Kernville late May to early July and late September to early November. Kern Canyon: late May-early June and late August-September.

**General:** The presence of this double brooded member of the *virgulti* complex occurring within the range of *davenporti* which is single brooded is a paradox. John F. Emmel has speculated that this may be a complex blend zone between the two, or are these two different species?

#### 143. Desert Metalmark—*Apodemia mejicanus deserti* Barnes & McDunnough, 1918

**Taxonomic notes:** The treatment here is provisional or tentative as DNA work done has been rather contradictory with some populations of *deserti* seemingly more related to *virgulti* in California than *mejicanus*. James Scott believes *mejicanus* is a *virgulti* because they are multiple brooded. Maybe the hallmark of a good species is not that they have readily identifiable field marks, or is it in this case?

**Type Locality:** La Puerta Valley, S. Calif. (San Diego County, California).

**Records: California: Inyo County:** Lower Nine Mile Canyon 28 Mar & 18 May 2003 (KD); Five Mile Canyon 29 Oct 2005 (SS); Lubken Canyon Rd on bare hillside near *Eriogonum inflatum* 22 Apr 2015 (KD); Lone Pine Creek near *Eriogonum inflatum* at edge of Alabama Hills near jct. Whitney Portal & Movie Rds 9 July 2009 (KD), this appears to be the northern limits of *deserti*. Gordon Pratt believes this population is a *virgulti* (pers. comm.). **Kern County:** Lower slopes E of Walker Pass 29 Apr & 9 May 93 (KD); upper Jawbone Canyon in ravine 26 May 78 (KD/CS).

**Distribution: California:** The south end of the Sierra Nevada where it meets the Mojave Desert near SR 14 in the Cantil area, Jawbone Canyon and Walker Pass area in Kern County; east slope canyons of the Sierra Nevada in Inyo County north to Lone Pine. At mid-elevations east of Walker Pass, I have observed this metalmark flying with Davenport's Metalmark (*Apodemia virgulti davenporti*), evidence the two are separate species.

**Habitat:** Dry east or south facing slopes of the Sierra Nevada with Mojave Desert plant associations where the larval host, *Eriogonum inflatum* Torrey & Fremont grows. Adults favor canyons and washes.

**Flight:** Late March-October. Times of flight depend on timing and amounts of rainfall and temperature. In very dry years flights may only occur in the spring. Normal or above rainfall years result in fall broods, and in very wet years with summer rainfall as in 1983 in Kern County, *deserti* can fly even through the summer months.

**Brushfooted Butterflies. Family Nymphalidae.**

**144. Southwestern Snout Butterfly—*Libytheana carinenta streckeri*** Austin & J. Emmel, 1998.

**Taxonomic notes:** Formerly known as *Libytheana bachmanii larvata* (Strecker, (1878) in California. The name *larvata* is now used for a Texas population.

**Type Locality:** Donna, Hidalgo County, Texas

**Records: California: Kern County:** Jawbone Canyon 6 Sep 2006 (KD); Sierra Hwy. E side of Lake Isabella 1.5 mi. NW of Hanning Flat 24 Oct 2006 (KD); SW of Sageland N of Kelso Valley in Kelso Creek water hole 21 Oct 2008 (seen, KD); Weldon near Jct. SR 178 and Kelso Valley Rd 27 Oct 2008; 6 Nov 2012 and several 28 Oct & 12 Nov 2014 (KD); Grapevine Canyon E side of the Sierra Nevada 2 Dec 2008 (SS). **Mariposa County:** Jerseydale 13 Oct 1990 (AOS). **Tulare County:** Upper Kern River N of Kernville at Chico Flat 28 Oct 2003 (KD).

**Distribution:** The records given above are the same as known Sierra Nevada occurrences excepting a few other records for Weldon.

**Habitat:** Areas where deciduous trees grow with abundant blooming rabbitbrush nearby seem most likely to draw migrants from the Mojave Desert.

**Flight:** Records range from early September to mid-November. It appears that unlike Monarchs and Queens that go south for the winter, Snouts go north for the winter in wetter years, at least some do. It is unlikely any of the Snouts straying into the Sierra Nevada survive till spring, but there are recent records of Snouts being seen or collected in southern California (outside the Sierra) in the spring. Like the Queen, this butterfly with the long “nose” seemed most unlikely to turn up in the Sierra Nevada as the relatively few records above demonstrate.

**145. Monarch—*Danaus plexippus plexippus*** (Linnaeus, 1758).

**Type Locality:** Neotype from Kendall, Orleans County, New York State.

**Distribution:** This famous butterfly is distributed throughout the Sierra Nevada and I even see them with some frequency in the Arctic-Alpine Zone in the Tioga Pass area. It is believed Monarchs cross the Sierra Divide from the Great Basin to reach overwintering sites along the Pacific Coast based on published tagging data. Many milkweed species grow in the Sierra Nevada which are used as larval host plants. There are three National Parks (Yosemite, Kings

Canyon and Sequoia) and wildlife reserves (including a state preserve near Walker off Antelope and Mill Canyon Roads in Mono County) where thousands of Monarchs have been recently observed, with considerable amounts of milkweed inside the Parks and preserve. The same is true in the Rovana, Bishop and Owens Valley in Inyo County where large populations can occur and in the Kern River drainage and Kern River Valley in Kern and Tulare Counties if rainfall has been plentiful into the summer.

Monarch populations have been in steep decline in the San Joaquin Valley for many years apparently because of human development, current agricultural practices and pesticides that kill not only their “target” bugs, but most butterflies including Monarchs as well. The very dry years of 2017-2018 left very little milkweed growth for Monarch caterpillars to eat in late summer and fall of those years, and few Monarchs or Queens were seen in the Kern River drainage late in the season in those two years. A year with abundant rainfall in the southern Sierra Nevada and improved Monarch numbers seen in 2019 may have reversed that trend. It does not appear anyone will deal with the agricultural problems or the chemicals that are being used for insect control nor is it likely anyone can make it rain and snow abundantly every year, no matter how much is spent to combat climate change.

**National Park Records: Kings Canyon NP: Tulare County:** Generals Hwy. inside Park 2 Aug 1993 (KD). **Sequoia NP:** Ash Mountain, Potwisha and Buckeye Flat 17 May 1985 (KD); Cabin Cove and Mineral King Valley 5 July 1985; Timber Gap Trail, Mineral King 22 July 1991 (KD); Mineral King Rd inside the Park 15 June 1993 (KD); Giant Forest Village 15 Aug 1986 (KD); Silver City 27 July 1985 (KD). **Yosemite NP: Mariposa NP:** Yosemite Valley 23 July 1933 (JSG); Yosemite Valley at Camp Curry and Village 2-3 Aug 1963 (KD) and 15 Aug 1970 (KD); Yosemite Creek S of Tioga Rd 7 July 1956 (JSG); Crane Flat 19 July 1957 (JWT).

**Habitat:** Monarchs favor open wetlands, meadows and pastures with flowers and milkweeds, riparian associations and canyons with water. In late summer and early fall, it is common to see Monarchs utilize abundant flowering vegetation for nectar between 5700’ to 9000’ west of Sherman Pass in Tulare County. But in the dry year 2018, few were seen, and the milkweeds had seemingly all gone to seed. The same was true in the Kern River Valley. Monarchs seem to be able to sense where water and adult resources are available, and because of the long-term drought in the southern Sierra Nevada, there were far fewer adults than normal.

**Flight:** March-early November.

**146. Queen or Striated Queen—*Danaus gilippus thersippus*** (H. Bates, 1863).

**Taxonomic notes:** This subspecies formerly went under the subspecies name *strigosus* Bates.

**Type Locality:** Isthmus of Panama, in the low forest-country situated about ten miles from the railway terminus on the Gulf of Mexico, holotype labeled “Lion Hill, Panama.”

**Records: California: El Dorado County:** Salmon Falls Rd, 6 mi W Pilot Hill 17 May 2004 (Peter Robinson); El Dorado Hills 16 July 2005 (Paul Cherubini). **Fresno County:** SR 168, 14



mi NW Shaver Lake S of Auberry 12 Sep 2003, two individuals (KD); Sierra School on Tollhouse Rd 16 Aug 2013 (Paul Cherubini). **Inyo County:** Olancho 29 Aug & 18 Sep 1978 (KD); Lubken Canyon S of Lone Pine just W US 395, 8 Sep 1984; 25 Aug 1998 & 13 Aug 2001 (KD); Round Valley near Rovana 8 Aug 1998 (KD). **Kern County:** Fay Creek, Pacific Crest Trail 14 June 1980 (KD); Chimney Peak Rd N of SR 178, 6 Oct 2001 (KD); Lake Isabella below Auxiliary Dam 18 June & 1 Sep 2003 (KD); Weldon 5 Oct 1998 (KD); 2 mi S of Kernville 13 Nov 2005 (KD); Piute Mountains, Erskine Creek Canyon E Lake Isabella 20 & 23 May 2001 (KD). Greenhorn Mountains: Kern Canyon at Hobo Camp 10 Aug 1976 & 14 Sep 2011 (KD). **Mariposa County:** Jerseydale 3500' 16; 21 & 23 Oct 1988 (AOS); Mariposa, Triangle Rd 4100' 31 July 2016 (BAMONA). **Mono County:** Mono Lake 30 June 1930 (JWT, seen); 16 July 1958 (AOS) and Mono Lake Park 22 July 1993 (KD); Lundy Canyon NW of Mono Lake 7 June 2017 (KN). Minaret Summit, Starkweather Trail 9000' 14 Aug 1999 (BG); E of Tioga Pass (Yosemite NP boundary) 3 Aug 2010 (Robert V. Dowell); Dechambeau Creek, NW side Mono Lake 7 July 2016 (KN); Shingle Mill Flat Camp off US 395 8 Sep 1977 (AMS). **Tulare County:** Coffee Camp in Tule River drainage 13 July 1983 (seen, KD); Freeman Creek Grove 16 July 1983 (KD); Kennedy Meadows 30 June 1988 (KD); W end Lamont Meadows 16 Aug 1985 (KD); Kern River 2-3 mi S of Calkin's Flat 2 Sep 2014 (KD); Kern River S of Corral Creek 16 Sep 2014 (KD). **Nevada: Douglas County:** Carson Valley, Scossa Ranch 10 Aug 1980 (GTA). **Washoe County:** Davis Creek Park 26 June 1988 (GTA).

**Distribution: California:** El Dorado, Fresno, Inyo, Kern, Mariposa, Mono and Tulare counties. **Nevada:** Carson City, Douglas and Washoe Counties. In the Kern River Valley in Kern County, the author has seen over fifty individuals in a single day. Queens can also be common in the Lubken Canyon area near Lone Pine and in the Bishop area in the Owens Valley, adults stray northward to Mono Lake and to the Lake Tahoe area.

**Habitat:** This butterfly flies in drainage areas, creeks, rivers, wet meadows and pastures, flood plains and in montane areas where *Asclepias fascicularis* grows, sometimes straying far from breeding areas.

Garth & Tilden recorded two records for Mono Lake in their 1963 Yosemite book. Back in those years, it seemed highly unlikely this desert species could be considered a Sierra Nevada butterfly. But now we know that Queens move north into the Sierra Nevada most years and colonize milkweeds in wetlands and pastures in valleys and on drier slopes where seeps and drainages allow *Asclepias fascicularis* to grow. Seeing them there adds immensely to the outdoor experience in the Sierra Nevada.

**Flight:** April to early November. About the second week in November the sometimes-abundant Queens at Weldon abruptly disappear. Where did they go? No one knows.

**147. Gulf Fritillary—*Agraulis vanillae incarnata* (Riley, 1926).**

**Type Locality:** Near Durango City, Mexico.

**Records: California: El Dorado County:** Diamond Springs 45 mi E Sacramento 16 Sep 2014 (photo, Marla Cisneros). **Kern County:** Wofford Heights near Lake Isabella 29 June 2013 (seen, FH) and Weldon near Jct SR 178 & Kelso Valley Rd 12 Nov 2014 (KD). **Mono County:** Stray at Paradise Camp, base of Old Sherwin Summit Rd 18 Aug 2006 (RKS). **Placer County:** Sierra Nevada foothills 7 mi W Placerville 18 Oct 2013 (Paul Cherubini); Granite Bay by Folsom Lake 6 Dec 2014 (Bruce Webb).

**Distribution:** This is not a resident species in the Sierra Nevada but it appears to occur there as a rare stray or is introduced into Sierran cities where passion vine is grown in yards. This “tropical” species has been expanding its range northward in California (including Fresno, a gateway to Yosemite) in recent years, but hard freezes could reverse these gains and kill off what are likely transient populations. Counties for the Sierra Nevada are listed above in the records section. Many county records for this species are likely based on lowland records not in the Sierra Nevada.

**Habitat:** Likely, most records originate in human inhabited areas in the Sierra Nevada. Strays can turn up in unexpected places.

**Flight:** Spring to fall, but the heaviest flights tend to be in late summer and early fall.

**148. Wide-Banded Weidemeyer’s Admiral—*Limenitis weidemeyerii latifascia*** Perkins & Perkins, 1967. **Taxonomic notes:** This Rocky Mountain species occurs only in Mono County in California and in the Sierra Nevada. There is a hybrid zone in the county as far south as Lee Vining Creek and as far north as Devil’s Gate Pass off US 395. Boyd, Boyd, Austin & Murphy (1999) studied that hybrid zone and reported many Sierra Nevada localities where the form “fridayi” (the name of the hybrid) which included Lee Vining Creek, Mono Lake, Virginia Lakes Rd, Green Creek, Summers Creek, Robinson Creek, Buckeye Creek, By Day Creek, the vicinity of Devil’s Gate Pass (=9.1 to 10 mi. N of Bridgeport) and other locations in the Bodie Hills and elsewhere. To add to those localities, I collected a hybrid along Warren Creek near Ellery Lake which was found by Liam O’Brien on the Yosemite Butterfly Count. The hybrid zone extends eastward to Hawthorne in western Nevada.

**Type Locality:** Idaho: 10 mi. S Pocatello, Mink Creek, Bannock Range, Bannock County.

**Records: California: Mono County:** Warren Creek Canyon 9500’ 1 Aug 1981 (RLL/DP); Mono Lake Park 2 & 4 Aug 1975; 10 & 12 Aug 1991 (KD) and many other records there; 9.1 mi. N of Bridgeport 9 July 1987 (KD); Green Canyon 5 Aug 1996 (BRB); Summers Canyon 7 July 1996 (BRB); Virginia Canyon 8-9 July & 7 Aug 1996 (BRB). Records for hybrids with Lorquin’s Admiral (=Form fridayi): Warren Creek and Canyon off the Tioga Road 26 July 2014 (KD & Liam O’Brien) tends toward *lorquini* but hindwings below look like *weidemeyerii*. Mono Lake Park: 3 collected July 12, 1976, one tends towards *lorquini*, two towards *weidemeyerii*; one 16 August 1976, even blend; two 12 August 1991, both tend towards *weidemeyerii* and have a trace of orange on the apex of the forewings (all KD).

**Distribution: California:** This beautiful butterfly occurs the Sierra Nevada in Mono County only, it seems puzzling that it has not expanded its range further west into the Sierra Nevada. Comstock (1927) stated “For some unknown reason it has not obtained a footing in the high Sierras, although environmental conditions would seem to favor its presence there.” This seems yet odder when Lorquin’s Admiral seems to favor willows as its host while Weidemeyer’s Admiral uses *Salix*, *Populus*, *Prunus*, *Amelanchier* and *Holodiscus* (Boyd, Boyd, Austin & Murphy, 1999). **Nevada:** There is a record reported for Washoe County. It is not known where this record is from (which I could not find) or if is from the Sierra Nevada part of this county.

**Habitat:** This species still occurs at Mono Lake but what I have noted is that Lorquin’s Admiral which was more common in Lee Vining in the 1970’s is now fairly common at Mono Lake (2018-19 observations). Weidemeyer’s Admirals occur along streams and in wet meadow thickets with willows and other potential hosts. A classic locality east of the Sierra Nevada noted by Boyd, Boyd, Austin and Murphy is Bridgeport Canyon in the Bodie Hills. There adults and hybrids can be easily observed patrolling the dirt road and perching on the willows lining the road on the Mono Lake side of the road, (the other side of the road connects with the Bodie Rd near Bridgeport) accessible by 20-minute drive from Mono Lake by Hwy 167 on the Bodie Turnoff. Turn left at the “T” intersection and go 2-3 blocks; the unmarked road, safe for passenger cars with sufficient clearance, going north quickly accesses good habitat for that and many other species of interest, including *Speyeria nokomis apacheana* in late summer.

**Flight:** Latter part of June to August.

**General:** This distinctive blackish purple butterfly with wide white bands draws many observers of butterflies to the Great Basin east of Yosemite National Park’s Tioga Pass. Perhaps the steep incline of the Sierra Nevada east slope and the Hudsonian and Arctic-Alpine life zones are too much of a barrier for this species to extend its range further west, but as noted above, some have made it to Warren Creek to the 9000’ level.

#### **149. Lorquin’s Admiral—*Limenitis lorquini* Boisduval, 1852.**

There are three subspecies which occur the Sierra Nevada.

##### **a. Lorquin’s Admiral—*Limenitis lorquini lorquini* Boisduval, 1852.**

**Sierra Nevada Type Locality:** Hwy. 70 at Soda Creek, E. Branch Feather River Canyon, 2500’, Plumas County, California.

**Records: California: El Dorado County:** Lake Tahoe 23 June 1935 (JWT). **Inyo County:** SF Bishop Creek at 8400’ 6 July 2004 (KD, both *lorquini* and *pallidafacies* phenotypes) and near Table Mountain Camp along fisherman’s trail 8700’ 10 & 13 July 2014 (KD). **Mono County:** Hudsonian Zone forest W below Saddlebag Lake 13 Aug 1970, 31 July 2004; 29 & 30 July 2019 (KD). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 29 June 2017 (SFSU – BSNC Mohawk- Chapman Road, Plumas National Forest 28 June 2017 (SFSU – BSNC). **Sierra County:** Sierra City 28 June 1960 (JWT); Henness Pass Rd W Nevada state line

17 June 2016 (JD); Smithneck Road, Tahoe National Forest 27 June 2017 (SFSU – BSNC). Records for *lorquini* in Inyo and Mono Counties document two subspecies occur in those counties. **Tulare County:** Chimney Peak Rd, Lamont Meadows 16 Aug 1985 (KD); 1-4 mi. N of Chimney Peak Ranger Station 18 June 2005 and other dates (KD, the population here is a mix of *lorquini*, *powelli* and *pallidafacies* phenotypes). **Nevada: Douglas County:** Carson Valley US 395 at Carson River 6 Aug 1981 (GTA); Carson Valley, Genoa Lane 2.3 mi W of US 395 6 Aug 2001 (GTA); and Dressler Lane 0.3 mi. E of Nv 88, 6 Aug 2001 (GTA). **Washoe County:** Carson Range, above Incline Village, First Creek area 10 July 2003 (GTA); Galena Regional Park, Jones Crk Loop Trail 23 June 2016 (JD). Records from most of the Sierra Nevada are not given because this subspecies is widely distributed.

**National Park Records: Kings Canyon NP: Tulare County:** E of Buena Vista Peak 18 Aug 1989 and Wilsonia 18 Aug 1989 (both KD). **Sequoia NP: Tulare County:** Mineral King Valley, Redwood Creek and 2 mi W of Cabin Cove 5 July 1985 (KD); Potwisha 27 July 1985 (KD); Halstead Meadows 16 Aug 1985 (KD); Buckeye Flat 17 May 1985; Mineral King Rd Park entrance 8 May & 19 July 1993 (KD); Little Baldy Saddle 2 Aug 1993 (KD); Lodgepole and Tokopah Falls Trail 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley July-1933 (JSG). **Tuolumne County:** Aspen Valley 14 July 1956 JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, western Inyo, Kern, Madera, Mariposa, northern Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. **Nevada:** Carson City, Douglas & Washoe counties. **Habitat:** Streams and wet meadows with willows. The butterfly can be common in the Upper Sonoran, Transition and Canadian Life Zones, frequently found into the Hudsonian Zone east of Tioga Pass.

**Flight:** Late April into early October.

**General:** People often get this species confused with the California Sister. Lorquin's Admiral is associated with its willow hostplant while California Sisters use oaks, but both species often occur together along streams. The size and shape of the orange-tips on their forewings differ as does their manner of flight. Lorquin's Admirals often perch on willows.

**b. Pale Lorquin's Admiral—*Limenitis lorquini pallidafacies* Austin & J. Emmel, 1998.**

**Taxonomic notes:** This subspecies is characterized by having a larger and paler orange-tip on the upper forewings, is paler overall including areas of orange overall and has wider white bands (Austin & Emmel, 1998a). It blends with nominotypical *lorquini* on the Sierran east slope (As along the south fork of Bishop Creek and Pine Creek Canyon in Inyo County) and in canyons north of Mono Lake in Mono County.

**Type Locality:** Nevada: Esmeralda County; White Mountains, Trail Canyon 2620m.

**Records: California: Inyo County:** Owens River E of Bishop 7 Aug 1978 (KD); Lubken Canyon S of Lone Pine 31 May 1999 & 13 Aug 2001 (KD); Whitney Portal area along Lone Pine Creek 18 June 2006 (KD); Pine Creek Canyon 10 June 2014 (KD, both *pallidafacies* and

*lorquini* phenotypes). **Mono County:** Mono Lake Park 25-26 July 2014 (KD); Swall Meadow 27 June 99; 8 & 25 Aug 2000 (KD); Lower Rock Creek 24 June 2006 (KD) & 27 July 1999 (JGP & KD); E of Tioga Pass on SR 120, Warren Creek Canyon 9000' 17 Aug 2011 and 25 July 2014 (KD), also hybrid *lorquini* X *weidemeyerii* found there (Liam O'Brien/KD); W of Upper Lee Vining Camp and creek 18 July 1973 (KD); Lee Vining 18 July 1973 (KD); Rush Creek near Silver Lake 8 July 2004 (KD).

**Distribution: California:** Inyo and the southern half of Mono County to the Mono Lake and Bridgeport Canyon area in the Bodie Hills area, the latter locality not in the Sierra. The *pallidafacies* influence appears in *lorquini* populations as far south as in the upper Nine Mile Canyon (18 June 2005, KD) and Kennedy Meadows Road in streambeds south of Kennedy Meadows. There one can find a mixed population that shows characters of nominotypical *lorquini*, *powelli* and *pallidafacies*.

**Habitat:** Streambeds with willows, the larval host, in sagebrush on the east slope of the Sierra Nevada where it meets the Mojave or Great Basin deserts. The range of *pallidafacies* lies in the Owens Valley or in mountain ranges east of the Sierra Nevada. A classic locality for it is in Silver Canyon in the White Mountains east of Bishop and Laws.

In Mono County, both this species and Weidemeyer's Admiral often occur together and hybridize, with resulting adults having mixed characters to varying degrees, some appearing more like one species or the other, others evenly blended. Such hybrids occur with some regularity at Mono Lake Park, Bridgeport Canyon in the Bodie Hills east of the Sierra Nevada or elsewhere in that county. Those have been called form "fridayi."

**Flight:** Late April-September.

**c. Powell's Lorquin's Admiral—*Limenitis lorquini* near *powelli*** Austin & J. Emmel, 1998.

**Taxonomic notes:** This subspecies differs from nominate *lorquini* by having wider white bands on the dorsal surface, the spots are more contiguous and only narrowly divided by dark veins. On subspecies *lorquini*, these appear as a series of white spots on a dark field. The orange patch on the forewings is narrower on *powelli* further south, but can be much larger in southern Sierra Nevada populations. Key differences are on the ventral surface. The orange-brown coloration below is much more extensive (including the southern Sierra populations) and the white coloration is reduced (Austin & Emmel, 1998a)

Since there is a broad mix of phenotypes of nominotypical *lorquini* and *powelli* in the southern Sierra Nevada, Coast and Transverse mountain ranges, some may question why *powelli* is viewed as a subspecies. I use the name here as individuals I find in the Piute Mountains, Havilah and at Breckenridge Mountain consistently exhibit the *powelli* phenotype. North of there in Kern County and southern Tulare County, there seems to be a *lorquini* X *powelli* tension zone, but one could also argue that *powelli* extends much further north than I do here. Such an argument may be valid.

**Type Locality:** San Bernardino County, California.

**Records: California.: Kern County:** Piute Mountains: 2-4 mi S of Bodfish 30 May 1976 (KD); Havilah 26 July 1977 (KD); E slope, Breckenridge Mountain 8 May 1976; 29 May 1979 and 23 May 1986 (KD). Individuals with the *powelli* phenotype range into Inyo, Tulare and even Fresno counties.

**Habitat:** Havilah sits between Breckenridge Mountain and the Piute Mountains, south of Lake Isabella. Adults occur along Clear Creek where willows grow and also in lower canyons of Breckenridge Mountain accessible by road from Havilah Knolls.

**Flight:** Late April-September.

**150. California Sister—*Adelpha californica*** (Butler, 1865).

**Taxonomic notes:** This butterfly was long believed to be a subspecies of *Adelpha bredowii* up until 2007 when Andrew Warren presented evidence for the changed status at the 2007 meeting of the Lepidopterists' Society at Bakersfield, California (Warren, 2005 and Prudic, Warren and Llorente-Bouquets, 2008).

**Type Locality:** "California"

**Records: California: El Dorado County:** S end Fallen Leaf Lake E side of Sierra Nevada 2 Sep 2004 (JFE). **Inyo County:** Nine Mile Canyon 6 July & 26 Aug 1983 (KD); Whitney Portal, seen 5 July 2004 (KD); 7 July 2006 (JGP) & 27 July 2019 (KD). **Kern County:** Kelso Creek Spring 0.8 mi. S of Sageland E base of Piutes in Mojave Desert terrain 1 Oct 2009 (KD) **Mono County:** NE of Tioga Pass 9920' 11 July 1991 (R. Wuttken); Warren Creek Canyon just N Tioga Pass Rd 26 June 2012 (seen, fresh male KD). **Plumas County:** Round Lake Loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Big Spring, Hwy 49, 22 June 2016 (SFSU-BSNC). **Nevada:** Reported from near Lake Tahoe in **Carson City, Douglas and Washoe counties** by GTA in the 1985 Season Summary, but dates were not provided. **Washoe County:** Lake Tahoe, Kennedy Memorial Point 28 June 1985 (GTA). This butterfly is common in the Sierra Nevada, so only a few records are given.

**National Park Records: Sequoia NP: Tulare County:** General Sherman Tree and Giant Forest Village 27 June 1987 (KD); Ash Mountain and Potwisha 17 May and 6 Sep 1985 (KD); Buckeye Flat 17 May 1985 & 15 Sep 1987 (KD); Crystal Cave 15 Aug 1986 & 27 June 1987 (KD); Redwood Creek and Cabin Cove 5 & 27 July 1985 (KD); Mineral King at Timber Gap 9600' 22 July 1991 (stray, KD). **Yosemite NP: Mariposa County:** Camp 9 in meadow in Yosemite Valley 23 July 1933 (JSG); trail to lower Yosemite Falls in Yosemite Valley 3 Aug 1963 (KD); Crane Flat 24 June 1959 (JSG). **Tuolumne County:** Tuolumne Meadows 8800' 25 June 1981 (seen, RLL); Hetch-Hetchy 13 to 15 July 1956 (JSG); Aspen Valley 14 July 1956 (JSG);

**Distribution: California:** All counties, strays only in Mono County (see records above).

**Nevada:** Carson City and Washoe counties. This distinctive California butterfly occurs in a few

places on the east side of the Sierra in Inyo County, where isolated stands of oaks may be found, and there are only two strays that were seen and reported in Mono County.

**Habitat:** This species is common in the Upper Sonoran, Transition and Canadian Life Zones. These brightly colored butterflies fly in foothill woodland, along canyon walls and in mixed coniferous forest where the hostplant oaks occur. Adults frequent canyons along streams or gather at wet spots to visit mud. **Flight:** Usually late April to October.

**General:** Many observers have difficulty distinguishing this species from the similar looking Lorquin's Admiral. Garth & Tilden (1963) made a relevant comment to telling the two apart: "The California Sister...may be told on the wing by the habit of alternating a few rapid beats with a glide in which the wings are held slightly below the horizontal level." Lorquin's Admiral tends to glide with its wings held out horizontally.

**151. Western Meadow or Pacific Fritillary—*Boloria epithore sierra* E. Perkins, 1973.**

One might expect to find many *Boloria* species in the Sierra Nevada as is the situation in the Rocky Mountains, but there is only this species. This smaller sized fritillary tends to fly close to the ground in the wet meadows or streamsides it inhabits.

**Sierra Nevada Type Locality:** Sentinel Dome, Yosemite National Park, Mariposa County, California.

**Records:** **California:** **Fresno County:** Meadows near Huntington Lake 7000-9000' 12 June to 18 July 1930 (LMI). **Kern County:** Greenhorn Mountains: Tiger Flat 24 June 1961 (RES); Tiger Flat Rd below Sunday Peak 6700' 25 June 1995, first record in Kern County and southern California in over 30 years (KD) and 10-24 June 1996 and 25 June 1997 (KD). **Madera County:** S of Sugar Pine along Sivels Mtn. Rd to Fresno Dome 23 May 1992 & 11 June 1993 (KD); 2 mi. below Fresno Dome Trailhead meadow and campground 1-2 July 1996; 5 & 11 July 1999 (KD). **Mariposa County:** Fish Camp 16 June 1990 & 8 June 1992 (KD). **Mono County:** Reds Meadow, Devils Postpile National Monument 7600' 21 June 1987 (PAO), E slope of Sierra Nevada, Hudsonian Zone forest W below Saddlebag Lake Dam 29 & 30 July 2019 (KD). **Nevada County:** Castle Peak Trail, 7500-9000', 5 & 10 July 1999 (EDB, reported as ssp. *chermocki*). **Placer County:** Soda Springs 6700' 23 July 1999 (EDB, reported as *chermocki*). **Plumas County:** 1 mi S Meadow Valley 4100' 6 & 8 July 1997 (RLL), tending towards ssp. *chermocki*; Round Lake Loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Forest road 52, S Bassetts, Tahoe National Forest 26 June 2017 (SFSU – BSNC). **Tulare County:** Greenhorn Mountains: N Meadow Camp in meadow, common 10 & 24 June 1996 (KD); Freeman Creek Grove, common 27 June 2017 (KD). **Nevada: Carson City:** Carson Spur, 2 mi S Hwy. 28, Carson City 1 July 1985 (GTA). **Douglas County:** Spoomer Lake Camp 0.6 mi N of US 50, 12 June 1997 (RES).

**National Park Records:** **Kings Canyon NP: Tulare County:** Wilsonia and Southern Boundary 10 July 1989 (KD). **Sequoia NP: Tulare County:** Mineral King Valley 5 July 1985 and 22 July 1991 (KD); Farewell Gap Trail south end Mineral King Valley 19 July 1993 (KD); vicinity of

General Sherman Tree 7-9 July 1943 (Tom Blevins); Giant Forest Village 23 June 1989 (KD); Tokopah Falls Trail 12 June 1990 & 2 Aug 1993 (KD); Halstead Meadow 13 June 1990 (KD); Little Baldy Saddle 24 July 1987 (KD); Dorst Camp 16 July 1992 (KD). **Yosemite NP:** **Mariposa County:** Sentinel Dome 3 July 1946 (F. H. Rindge); Glacier Point 28 June & 21 July 1921 (JAC); Yosemite Creek S of Tioga Rd 7 to 17 July 1956 (JSG); Badger Pass 23 June 1959 (JSG). **Tuolumne County:** Tuolumne Meadows in Hudsonian Life Zone 29 June 1954 (C.H. Ericksen); White Wolf 10 July 1956 & 24 June 1961 (JWT); Tioga Pass 7 July 1931 (JWT); Aspen Valley 14 July 1956 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Mono, Nevada, Placer, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City and Douglas counties. The southernmost records for this species in the state are near the Tiger Flat Campground in the Greenhorn Mountains. Based on comments on the species by Edwin Perkin's and W. Craig Meyer (1973), all populations in the Sierra Nevada are subspecies *sierra*, but Robert Langston and Ed Ballard have noted some populations that lean towards *chermocki* as noted in annual Season Summaries with those records noted below. Sometimes the idea that geographical subspecies stay consistently separate can conflict with observations made in the field, several examples are given in this publication.

**Habitat:** This species occurs in the upper Transition and Canadian Life Zones and in the Yosemite area has even been found in Hudsonian Zone forests. It is usually found in wet meadows with ferns within the forest and also along streams or in small glades under fir trees. Garth & Tilden (1963) reported a Hudsonian Life Zone record "There is also a colony on the Dana Trail, where it passes through a marsh before rising sharply onto the slope of the mountain." No date or county was provided for that specific report but perhaps a record from Tioga Pass (also Hudsonian Zone) 7 July 1931 in their Yosemite Butterflies book is that record. In 2019, this species turned up near Saddlebag Lake (also in the Hudsonian Zone), apparently missed by others for many years.

**Flight:** Late June into early August.

## **152. Variegated Fritillary—*Euptoieta claudia* (Cramer, 1775).**

**Type Locality:** Jamaica.

**Records: California: Kern County:** E side of the Sierra Nevada, Grapevine Canyon, 2 Oct 2008 photo (Bob & Susan Steele). **Mariposa County:** Fresh female at Jerseydale 23 Oct 1988 (AOS). **Mono County:** Comstock (1927) referred to a record from Mono County; N side of Sonora Pass at Alpine Co. line on 9 Aug 1998 (seen, KD); 27 July 2010 (JRM); Lower Rock Creek 27 July 1973 (Art Douglas). **Plumas County:** Queen Lily Campground, N Fork Feather River, 4.8 km N Hwy. 70 near Belden 19 Aug 1988 (SOM), (See discussion of northward dispersal of this species in Shapiro, Mattoon, Austin & Shields, 1990).

**Distribution:** This is not a resident species in the Sierra Nevada. It appears to occur in the range only as a very rare stray, one that could appear in any type of habitat.



**153. Leto Great Spangled Fritillary—*Speyeria cybele leto* (Behr, 1862).**

**Taxonomic notes:** Some lepidopterists believe *leto* and several other subspecies in the western part of the USA are better considered a full species different than the eastern *Speyeria cybele* (Great Spangled Fritillary). Western populations in the *leto* group are smaller in size and females differ from eastern *cybele* by being dimorphic...which are whitish or cream colored in the female whereas nominotypical *cybele* females' coloration is similar to but duller than their males.

**Sierra Nevada Type Locality:** Near Carson City, Ormsby County, Nevada. (Ormsby County no longer exists). This is now Carson City County.

**Records:** **California:** **Calaveras County:** Big Meadows 2 Aug 1932 (R. Wind); Dorrington 25 July 2000 (RK). **Madera County:** Fresno Dome Camp 26 July 1992 (KD & Kevin Davenport); Jct FS 10 & Sivels Mtn rd along stream 21 Aug 1999 (KD); Little Sandy Camp along Big Creek, 2 males, 16 Aug 2008 (KD). **Mariposa County:** Fish Camp 5000' 17 July 1989 (Al & Tom Rubbert); 28 July 1989 & 25 July 1992 (KD). **Nevada County:** Lang Crossing 4 Aug 1980 (AMS). **Plumas County:** Butterfly Valley, Plumas National Forest 12 July 2012 (SFSU – BSNC). **Sierra County:** Big Springs, Hwy 49 5 July 2007 (SEABA-C); Eastern base Yuba Pass, NW Sattley 10 July 2012 (SFSU - BSNC). **Tuolumne County:** NE of Mather 1 & 29 Aug 1976 (MS); Niagara Creek S of SR 108, 13 July 1994 (KD) & 22 July 2015 (KD/SR). **Mono County:** Devil's Gate Pass area, US 395, 17 Aug 1975 & 5 Aug 1978 (KD); Mill Creek Canyon Rd 2-3 mi W of US 395, uncommon 29 July 2018; common 28 July 2019 (KD). **Nevada:** **Carson City County:** Carson Range, Kings Canyon 19 July 1981 (GTA). **Douglas County:** Carson Range, Kingsbury Grade, 5 mi W of Nv 206, 10 Aug 1980 (GTA); Carson Valley, Scossa Ranch 18 July 1981 (GTA). **Washoe County:** Davis Creek Park 18 July & 26 Aug 1983 (GTA); Jones-White Creek Loop Trail, Galena Park 8 Sep 2002 (JD).

**National Park Records:** **Yosemite NP;** **Mariposa County:** Yosemite Valley in meadow near Camp Curry 2 Aug 1963 (KD); Yosemite Valley near Camp 9, 23 July to 2 Aug 1933 (JSG) seen along road N of Camp 9 in mid -July, 1965 (KD).

**Distribution:** **California:** Alpine, Amador, Calaveras, El Dorado, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra and Tuolumne counties. The southern limit of this fritillary's range in the Sierra Nevada appears to be the Yosemite region (the population in Yosemite Valley is believed to be extirpated) in Madera and Mariposa Counties. Records are lacking to the south in Inyo, Fresno, Kern and Tulare Counties. **Nevada:** This species is known in Carson City, Douglas and Washoe counties.

**Habitat:** Wetlands and meadows, often near aspens, but sometimes in areas without trees. The usual habitats are in the Transition and lower Canadian Zones, but east of the Sierra Nevada this species may occur in dry desert-like areas where drainages support wetlands with abundant shrubs, willows, grasses and aspens.

**Flight:** July-early September.

**General:** This is one of the most prized butterflies in the Sierra Nevada. Females are secretive and usually emerge about two weeks later than the males and after peak butterfly diversity in areas where *leto* occurs, so are often missed by those looking for butterflies. Females are easily seen when in flight, but often dip down in wetlands looking for the violet hosts down at water level, and unseen by those seeking them, or the females disappear into nearby willows or shrubs.

On the east side of the Sierra Nevada north of Mono Lake in the Bridgeport area northward to the Lake Tahoe region, it is possible to find *leto* and the spectacular Nokomis Fritillary (those are similar to *leto* in appearance in both sexes but are even larger in size) in the same wetlands.

**154. Nokomis Fritillary *Speyeria nokomis* (W. H. Edwards, 1862).**

There are two subspecies reported to occur in the Sierra Nevada. This species is a very large fritillary. Males have a beautiful orange-red upperside with prominent black lines; marked with golden or yellow hind wings below (depending on how individuals see it) with silver spots in the males; females are cream colored with black lines and greenish colored hind wing discs with silver spots, sometimes with a bluish tinge above. Therefore, it is no surprise that this species attracts visitors from far away to search for this species in wetlands with water often up to knee level.

**a. Apache Nokomis Fritillary—*Speyeria nokomis apacheana* (Skinner, 1918).**

**Type Locality:** Independence, Inyo County, California.

**Records: California: Alpine County:** Iceberg Meadow 23 Aug 2006 (Brad Stirn/John DeBenedictis). **Inyo County:** Round Valley 10 Aug 1985 (R. Wuttken); Rovana, Round Valley, 7 July 2007 early, BG); 8 Aug 1998 (KD); Grouse Spring, Big Pine Creek drainage, 28 July 2001 (JFE); Big Pine Creek 8500', 7 Sep 2003 (JFE). **Mono County:** Mono Lake Park 2, 4 & 17 Aug 1975 (KD); Devil's Gate Pass area on US 395, 17 Aug 1975 & 5 Aug 1978 (KD); 2 mi E of Lundy Lake 9 Aug 1981 (RLL); Mill Creek Canyon Road 2-3 mi W of US 395, common 29 July 2018 (KD); Little Walker River Road just off US 395, 17 Aug 2000 (KD).

**Distribution: California:** Inyo, Mono and southern Alpine counties. The type locality and southern range limit was Independence, Inyo County, California but the lowering of the water table in the Owens Valley, and diversion of the Owens River water to Los Angeles resulted in this species becoming extirpated at the type locality. The present southern limit for this species is Big Pine Creek, records by John Emmel given above. The northern limits for *apacheana* are not yet defined, due to confusion over what subspecies *carsonensis* is and how it differs from *apacheana*. Most believe *carsonensis* is a very weakly distinguished subspecies, if it merits subspecies status at all. Since *carsonensis* now requires a scientific permit to collect in California (in 2018-19) (but not in Nevada), these questions may take time to resolve.

The former classic locality for *apacheana* at Mono Lake Park is no longer a reliable spot to find this species as the park itself has been converted into a more city-like park with introduced grass lawns that are mowed and natural habitat found there several years ago have become

overgrown or deteriorated from changes in the water drainage and the introduction of picnic tables and playground equipment.

**Habitat:** Wetlands with permanent water in most cases (Bridgeport Canyon in the Bodie Hills supports a good population of *apacheana*, even when the water disappears in late summer, and occurs at Murphy Springs at 8000' elevation in that range along a stream a few inches wide and occurs above 10,000' in the White Mountains in the Silver Creek drainage), across the Owens Valley from the Sierra, east of Bishop.

**Flight:** From about July 20 through September.

**b. Carson Valley Nokomis Fritillary—*Speyeria nokomis carsonensis* Austin, 1998.**

**Taxonomic notes:** Males of *apacheana* are a deeper orange color with considerably broader black markings. Beneath, the black markings are similarly broader and the proximal portion of the hindwing is somewhat darker than distally at the very base and the ventral hindwing postmedian spots are larger and more distinct. Females of *apacheana* have no orangish tint on the forewing. The underscaling of the pale hindwing areas is often prominent and imparts a bluish cast not seen in *carsonensis*. For more complete details, see Austin, 1998d. The *nokomis* subspecies can be seen in color at the Butterflies of America website. Photo plates in the original description were in black and white so diagnostic color features were not readily visible.

**Sierra Nevada Type Locality:** Scossa Ranch, Carson Valley, Douglas County, Nevada.

**Records: California: Alpine County:** Carson River Rd 16 Aug 2006 (Ricky Patterson).

**Nevada: Douglas County:** Carson Valley, Scossa Ranch 18 July 1981 (GTA); Centerville, S of Minden 2 Aug 2007 (C. Howard Grisham).

**Distribution: California:** Northern Alpine County. **Nevada:** Douglas, Carson City and Washoe counties.

**Habitat:** Wetlands at the base of the Carson Range, a subrange of the Sierra Nevada.

**Conservation:** This butterfly has been proposed for threatened status in California and Nevada. This is because the wet meadows habitat is endangered by a growing Carson City which will be using Sierra Nevada runoff water which is expected to adversely affect this fritillary's habitat. Collecting this butterfly in California in 2019 requires a permit.

**Flight:** Late July through September.

**155. Coronis Fritillary—*Speyeria coronis* (Behr, 1864).**

A number of *coronis* subspecies have been reported in the Sierra Nevada but names assigned to these in those reports are likely the results of personal beliefs of the observer. Many of these entities are quite scarce and it is difficult to assess such issues with limited material that is

scattered in personal collections and museums. Subspecies are most often given here as reported by the collector or photographer, or those under *simaetha*, by the author.

**a. Henne's Coronis Fritillary**--*Speyeria coronis* near *hennei* (Gunder, 1934).

**Taxonomic notes:** Paul Grey (personal letter dated 8 Aug 1985) stated specimens collected in Sequoia National Park "are of the *hennei* variation which crops up here and there across Kern Co., but much redder; some surprisingly near "*semiramis*."

**Type Locality:** Mt. Pinos 7700', Frazier Mountain Park, Ventura County, California. This area is now in Las Padres National Forest and much of these localities are in Kern County.

**Records: California: Tulare County:** Big Meadow (Kern Plateau) 13 June 1972 (JB, individual resembles *semiramis*); road summit S of Big Meadow 2 Aug 1985 (Seen, KD)

**National Park Records: Sequoia National Park: Tulare County:** Crescent Meadow 7000' 9 Aug 1927 (JD Gunder); Wolverton Creek 2 & 22 Aug 1939 (Mrs. Cary); Huckleberry Meadows 7000' 22 Aug 1939 (Mrs. Cary); Halstead Meadow 8000' 29 Aug 1939 (Mrs. Cary), vicinity of General Sherman Tree 10 to 24 July 1943 (Tom Blevins); NW of Moro Rock 4000' 16 Aug 1957 (PAO) and seen Giant Forest Village 27 June 1987 (KD).

**Distribution: California:** Sequoia National Park with scattered records or sightings on the Kern Plateau. The author was unable to find and actually collect this species while having an NPS collecting permit from 1985-1993. My collecting outside the Park in the region has not turned up any collected *coronis* either.

**Flight period:** Late June through August. This species normally flies into mid-September.

**b. Simaetha Coronis Fritillary**—*Speyeria coronis* near *simaetha* dos Passos & Gray, 1945.

**Taxonomic notes:** The below records could represent stray *snyderi*. A big question here, do these records represent a resident population, or strays from east of the Sierra Nevada?

**Type Locality:** Black Canyon, Cascade Mountains, near Brewster, (Okanogan County), Washington.

**Records: California: Amador County:** One male 1 mi E of Silver Lake 13 July 1986 (KD).

**Tuolumne County:** 3 mi S of Niagara Creek 6800' 26 June 1975 (JRM); Mill Creek (SR 108=Sonora Pass Rd.) 7 July 1978 and 12 July 2003 (both JRM).

**General:** Not enough is known to answer questions about status, distribution or habitat in the region.

c. **Snyder's Fritillary**—*Speyeria coronis snyderi* (Skinner, 1897).

**Type Locality:** City Creek Canyon, Salt Lake City, Salt Lake County, Utah.

**Records: California: Alpine County:** Four miles NE of Woodford on Hwy 88 S of Minden, Nevada on alfalfa 12 June 2003 (KD); Snowshoe Springs Camp, Hwy 89, 7 Sep 1977 (AMS).

**Nevada County:** Sierran west slope-Lang Crossing 4700' 10 Sep 1979 (AMS); Donner Pass 24 June 2000 (EDB). **Plumas County:** Frazier Falls Road, Plumas National Forest 28 June 2017 (SFSU – BSNC). **Sierra County:** NE Camptonville 2800' 21 June 1980 (D. Parkinson); Sierra Nevada Field Campus, San Francisco State University 4 July 2019 (PAO-EBO); Smithneck Road, SE of Loyalton, Tahoe National Forest, 24 June 2016 (SFSU-BSNC).

**Flight:** June well into September...in sagebrush habitat (Davenport, 2007).

**General:** James R. Mori reported this butterfly could become “common most years along US 395 near Little Walker River Crossing and the west slope of the Sweetwater Mountains” (the latter not a Sierran subrange).

d. **Coronis Fritillary**—*Speyeria coronis*-undescribed eastern Sierra segregate.

**Taxonomic notes:** This segregate is pale and lightly marked, similar to “*semiramis*” (fide John F. Emmel). *Semiramis* is the *coronis* subspecies found in the San Bernardino Mountains in southern California.

**Sierra Nevada Records: California: Inyo County:** Big Pine Creek 8100' W of Big Pine 6 Aug 1996 (Derham Giuliani). A female individual was illustrated in the Yosemite Color Plates publication (Davenport, Kondla, Grisham & Grisham, 2007). No males were available to illustrate.

**Distribution:** Inyo and Mono counties, California. This population ranges from Big Pine Creek in the south, north to the Tom's Place area (fide John F. Emmel).

**General:** Nothing much is known about this segregate and no one I know has reported records other than Derham Giuliani or John Emmel. It reportedly also occurs in the Upper Rock Creek area in Mono County but few lepidopterists or butterflyers go into this or the Big Pine Creek area during the summer months when more productive areas draw people looking for butterflies.

156. **Zerene Fritillary**—*Speyeria zerene* (Boisduval, 1852).

There are at least 3 subspecies in the Sierra Nevada.

a. **Zerene Fritillary**—*Speyeria zerene zerene* (Boisduval, 1852)

**Taxonomic notes:** Before changes in type localities based on an actual examination of the types (Emmel, Emmel & Mattoon, 1998a and Davenport, 2007), this subspecies was believed to be the phenotype centered in Yosemite Valley, but that locality fits better with subspecies *monticola* which occurs southward to the Sherman Pass Rd east of the Kern River. The real nominotypical

*zerene* are the more northern populations, including what had been going under the name *conchyliatus* (J. A. Comstock, 1925). This subspecies ranges well north of the Sierra Nevada.

**Sierra Nevada Type Locality:** Hwy 70 at Chambers Creek, North Feather River, Plumas County, California.

**Records: California:** Only a few are given here because of problems with names issues and confusion how such issues applied. Past published records are few for what we are now are calling nominotypical *zerene*. **Plumas County:** Mohawk-Chapman Road, Plumas National Forest 28 June 2017 (SFSU – BSNC); **Sierra County:** Wild Plum Road, Sierra City, Tahoe National Forest 26 June 2017 (SFSU – BSNC).

**Distribution: California:** Northern El Dorado (blend zone), Nevada (blend zone), Sierra, Yuba; Placer and Plumas counties. Populations in Sierra County south to El Dorado County form a cline southward to *monticola* in Mariposa County.

**Flight:** June to early October.

**b. Zerene Fritillary—*Speyeria zerene monticola*** (Behr, 1863).

**Taxonomic notes:** When the lectotype and three syntypes of *zerene* were examined (Emmel, Emmel & Mattoon, 1998c), it was found those more resembled the northern California phenotype. The *zerene* subspecies that occurs on the Sierra Nevada west slope in the Yosemite region to the south end of the Sierra Nevada fits well with *monticola*, applied in Davenport, 2007 with the approval of John F. Emmel who was one of the reviewers of that work. The name *monticola* was not yet applied to the southern Sierran populations in the 1998 Emmel, Emmel & Mattoon state checklist, nor in the first edition of Yosemite Butterflies in 2004, the name “near *zerene*” was then used for the southern Sierra populations from Mariposa County south.

**Sierra Nevada Type Locality:** Mather, 15 air miles NW of Yosemite Valley, Tuolumne County, California.

**Records: California: Amador County:** Pioneer 13 June 1968 (KD); Silver Lake area 11-15 July 1986 (KD). **Fresno County:** Upper Little Line Creek 7800’ 23 June 1930 (LMI); meadow above Edison 7 July 2002 (RE). **Madera County:** Fresno Dome Camp 26 July 1992 & E Redwood Creek and Sivels Mtn. area 21 Aug 1999 (KD). **Mariposa County:** Fish Camp 5000’ 28 July 1989 & 25 July 1992 (KD). **Tulare County:** Freeman Creek Grove 30 June 1975 (JRM) and 25 July 1980 (KD); NE Black Rock Ranger Station near Powell Meadow 21 Sep 2002 (KD); newly colonized Sherman Pass Rd W of Sherman Pass after 2002 McNally fire 27 Aug 2005 (KD), now the southernmost range extension. **Tuolumne County:** Niagara Creek and Eagle Meadow Rd 8 July 1987 and 13 July 1994 (KD).

**National Park Records: Kings Canyon NP: Tulare County:** “General Grant Nat’l Park” July 1940 (Tom Blevins); E of Buena Vista Peak 10 July 1989 (KD). **Sequoia NP:** Vicinity of General Sherman Tree 9 to 24 July 1943 (Tom Blevins); Huckleberry Meadows 8000’, 22 Aug 1939 (Mrs. Cary). **Yosemite NP: Mariposa County:** Wawona 20 July 1933 (JSG); Crane Flat

19 Aug 1957 (JWT); Tunnel View entering Yosemite Valley 15 July 1966 and 14 July 1967 (seen, KD). **Tuolumne County:** Hetch-Hetchy Summit 13 July 1956 (JSG); Aspen Valley 14 July 1956 (JSG); Yosemite Creek Trail S Tioga Rd 17 July 1957 (JSG).

**Distribution: California:** Amador, Alpine, Calaveras, El Dorado, Fresno, Madera, Mariposa, Nevada, Tulare and Tuolumne counties. There are no records for Kern County and only one for the Sierra Nevada east slope (The Powell Meadow record for Tulare County). This species extended its range southward following the 2002 McNally fire that burned the Kern River drainage eastward over the Sierran Crest. Since then *monticola* has been found at Johnsondale and at several locations on the Sherman Pass Rd east of the Kern River and west of Sherman Pass from 5600' to over 8000'. Recently, *zerene* seems to be retracting its range or else it is becoming much less frequent, perhaps because of plant succession. None were found in any of these areas prior to the fire.

**Habitat:** Transition and lower Canadian Life Zones with a few records for the higher edges of the Upper Sonoran Life Zone. This butterfly favors open forests and slopes and is a frequent flower visitor, often near small streams.

**Flight:** Late June to early October.

**c. Malcolm's Fritillary—*Speyeria zerene malcolmi* (J. A. Comstock, 1920).**

**Taxonomic notes:** This subspecies is quite different than west slope *monticola* or *zerene*. Uppersides of *malcolmi* are often lighter in color and hindwing discs are brightly silvered.

**Sierra Nevada Type Locality:** Mammoth, Mono County, California.

**Records: California: Alpine County:** Monitor Pass 22 June 1973 (BOA). **Mono County:** US 395, 9.1 mi N of Bridgeport 22 July 1981 (KD). Little Walker River Rd W of US 395, SW of Sonora Jct. 9 Aug 1998 & 17 Aug 2000 (KD); Warren Creek, Tioga Rd 9000', E Tioga Pass 7 Sep 2009; 26 June 2012 and 29 July 2019 (KD). **Nevada: Washoe County:** Spooner Lake State Park 25 June 1985 (JD).

**Distribution: California:** At least Alpine, Inyo and Mono counties. **Nevada:** Carson City, Douglas and Washoe counties. It should occur northward on the east side of the California Sierra Nevada to the Lake Tahoe area.

**Habitat:** Very common in the Mammoth Lakes/Mammoth Mountain area and generally in forested sagebrush areas along the east slope of the Sierra Nevada from Mammoth to at least the Sonora Junction area west to Sonora Pass. This species occurs regularly upwards to Warren Creek off the Tioga Pass at 9000' and into the Tioga Pass area where strays occur fairly regularly around Saddlebag Lake.

**Flight:** Late June to September.

**157. Callippe Fritillary**—*Speyeria callippe* (Boisduval, 1852).

A revision by Emmel, Emmel & Mattoon (1998a and c) of what names apply to different geographical subspecies of *callippe* was published in 1998, affecting the correct application of the names *inornata*, *rupestris*, and *juba*. Records published before that or even afterwards (many people did not read or know about the revision) may not reliably be the correct subspecies. Six subspecies occur in the Sierra Nevada.

**a. Macaria Fritillary**—*Speyeria callippe macaria* (W. H. Edwards, 1877).

**Sierra Nevada Type Locality:** Havilah, Kern County, California.

**Records: California: Kern County:** Pine Flat south end of Kern Plateau 5 July 2003 (KD); Piute Mountains: Liebel Peak area 8 July 1982 (KD); Piute Mountain Rd MP 2-7 above Bodfish-Havilah Rd summit 4 July 2000 (KD) and 10 June 2004 (JFE & KD); Havilah 1 June 1977 & 7 June 2003 (KD). **Tulare County:** Johnsondale 14 May 1972 & 31 May 1986 (KD); 3 mi W Sherman Pass 8400' 24 July 1982 (KD); Sherman Pass Rd at Alder Creek 6800' 18 June 1983; 20 June 1999 & 9 July 2005 (KD); Freeman Creek 16 July 1983 (AR) and near Needlerock on Lloyd Meadows Rd 26 June 1981 (KD).

**Distribution: California:** Kern and southern Tulare counties.

**Habitat:** Upper Sonoran, Transition, straying to Canadian Life Zones W of Sherman Pass Rd. at 8500'. This fritillary favors foothill woodland, chaparral and mixed coniferous forest.

**Flight:** Late May to early August.

**General:** In most of *macaria*'s range in southern California, adults can be either silvered or unsilvered but in the Johnsondale-Sherman Pass region the *macaria* are more orange-red than yellow-orange to populations found in Kern County and at the south end of the Kern Plateau. All known adults from the Johnsondale-Sherman Pass region are silvered. The northern limit for *macaria* seems to be Freeman Creek Grove of Giant Sequoias but there do appear to be *ruprestris/macaria* blends north of Camp Nelson and along the Mineral King Road outside Sequoia National Park. This is the most common low elevation fritillary and the first *Speyeria* to appear in late spring. Adults sometimes swarm to flowering *Yerba santa* flowers in the Johnsondale/Sherman Pass area in early June.

**b. Unsilvered Macaria Fritillary**—*Speyeria callippe laurina* (W. G. Wright, 1905).

**Taxonomic notes:** This subspecies is similar to *macaria* but the black markings are narrower and a much higher percentage of adults are unsilvered below.

**Sierra Nevada Type Locality:** Greenhorn Mountains, Kern County, California.

**Records: California: Kern County:** Greenhorn Mountains: Top of ski slope above Shirley Meadows 6 July 1975 (KD); Cedar Creek 6 & 11 July 1975; 19 June 1993 & 4 July 1995 (all KD); Tiger Flat Rd N of Alta Sierra 17 June 2001; Old State Rd 19 June 2003 (KD). **Tulare**



**County:** Greenhorn Mountains: Tiger Flat Rd N of Sunday Peak 19 June 1993; Baker Ridge Lookout 7753', 11 & 26 June 1981 and 24 July 1996 (KD); Rancheria Rd. west of Shirley Meadows and northeast of the Kern River crossing near mouth of Kern Canyon, abundant 23 June 1995 (KD); 2 mi N Portuguese Pass 26 June 1981; 2 & 24 July 1996 (KD); Tobias Peak Lookout 10 June 1996 (KD). Possible *laurina*: Summit of Breckenridge Mountain 7,560', 10 June 1985 and 10 June 2004 (both KD), but this locality is near Havilah, the type locality for *macaria*.

**Distribution: California:** This subspecies occurs only in the Greenhorn Mountains in Kern and Tulare Counties.

**Habitat:** Upper Sonoran and Transition Life Zones. This fritillary flies in foothill woodland, chaparral and mixed coniferous forest. Occasional strays have been found or seen in Bakersfield in the southern San Joaquin Valley.

**Flight:** Late May to early August.

**General:** This fritillary can be fairly common along Rancheria Road, Shirley Meadows, along Old State Rd and along the Tiger Flat Rd and Cedar Creek. Geologists place Breckenridge Mountain as being part of the Greenhorn Mountains. It is located on the south side of Kern Canyon. The Greenhorns as a whole are on the north side of Kern Canyon, with Sunday Peak having an elevation of 8,295'.

**c. Plain Fritillary—*Speyeria callippe rupestris* (Behr, 1863).**

**Taxonomic notes:** See Emmel, Emmel & Mattoon (1998c) for the reasons for using the name *rupestris* instead of the better-known name *inornata* for the *callippe* populations west of Yosemite National Park. The name *rupestris* was formerly applied to a *callippe* subspecies in Trinity County. This subspecies is almost always unsilvered.

**Sierra Nevada Type Locality:** Moore Creek Road 1.5 to 2 road miles south of Hwy. 120, 3200', Mariposa County, California.

**Records: California: Calaveras County:** Railroad Flat 19 June 1959 (Tom Davies). **Fresno County:** Ridge overlooking Redinger Lake 11 June 2004 (seen, KD); SR 168 (Helipad) 10-11 mi. west of Shaver Lake 11 June 2004 (seen, KD). **Madera County:** Sky Ranch Rd near Oakhurst 3 July 1955 (RES) and Oakhurst 8 June 1992 (KD). **Mariposa County:** Jerseydale 23 June 1987 (one is silvered) and Bear Creek W of Briceburg 23 June 1987 (KD); Midpines (Bear Creek) 23 June 1987 (KD). **Tulare County:** Badger-Eshom Rd 10 July 1983; 21 & 28 June 2003 and 28 June 2009 (KD); silvered individuals taken on this road include (1) 16 June 2006 (KD) and (2) 28 June 2009 (KD); Mineral King Rd below Sequoia NP 3 July 1975 (JRM). Big Meadow on granite domes near Kings Canyon NP, one silvered individual similar to *juba* 28 June 2003 (KD). **Tuolumne County:** 6 mi S of Columbia June-July (no year given, JRM); NF Tuolumne River, 4 mi NE of Tuolumne 26 July 1963 (Keith S. Brown Jr.).

**National Park Records: Sequoia NP: Tulare County:** Mineral King Rd MP 13, 3 July 1975 (JRM) and Mineral King “June” (JHM). These were collected before Mineral King was added to Sequoia NP. **Yosemite NP: Mariposa County:** Wawona 5 July 1921 (JAC).

**Distribution: California:** This subspecies occurs on the west slope of the Sierra Nevada in at least Calaveras, Fresno, Mariposa, Madera, Tulare and Tuolumne Counties with northern range limits unclear because of confusion with recent taxonomic changes and range distributions within this species. The southern limit of distribution appears to be the Mineral King area near or in Sequoia National Park.

**Habitat:** This tends to be a rarer subspecies of *callippe* than others found in foothill woodland, chaparral and mixed coniferous forest. Strays occasionally reach the Canadian Life Zone.

**Flight:** Late May to early August.

**d. Cliff-dwelling Fritillary--*Speyeria callippe inornata*** (W. H. Edwards, 1872).

**Taxonomic notes:** The name *inornata* was applied to unsilvered populations of *callippe* from northern Tulare County north through the west slope north of Yosemite prior to 1998. Emmel, Emmel & Mattoon (1998c) stated that based on field work by S. Mattoon and C. Hageman, that unsilvered *callippe* can be taken a few miles southwest of Downieville, and it is likely that the Behrens specimen neotype came from there; the type localities for *inornata* and *juba* are very near each other, but the phenotypes are different, one silvered, the other usually not.

**Sierra Nevada Type Locality:** At “Downieville” in the “vicinity of Camptonville, Yuba County, California.

**Distribution: California:** Because of the recent revision of the fritillaries in the Sierra Nevada, published records in older literature are unreliable in whether they are this subspecies or *juba*. Both occur very close together and lepidopterists were hoping Thomas and John Emmel and Sterling Mattoon would resolve this issue in a published book on the Butterflies of California.

**Habitat:** Not discussed in the revision, but presumably *inornata* occurs in habitats similar to those of other *callippe*, i.e. foothill woodland up into mixed coniferous forest and based on the common name, adults favor areas with steep canyon walls and cliffs.

**Flight:** June to early August.

**e. Yuba or Sierra Fritillary--*Speyeria callippe juba*** (Boisduval, 1869).

**Taxonomic notes:** The subspecific phenotype of the male *juba* syntype is typical of northern Sierra Nevada *callippe* populations on the west slope in Plumas and Sierra Counties (Emmel, Emmel & Mattoon, 1998a). The name *sierra* dos Passos & Gray, 1945 was previously used for this brightly silvered population.

**Sierra Nevada Type Locality:** Downieville, Sierra County, California.

**Records: California: Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20 June 2005, 19 June 2006 (SFSU-BSNC); 5 mi S of Gold Lake 22 Jun 1961 (J. Donald Eff). **Fresno County:** 1 mi. ENE Camp Sierra Rd, Huntington Lake Rd 27 June 1980 (Jon Bell), this is a silvered individual that John Emmel believes may represent a disjunct population of *juba* at high elevations of the Sierra Nevada at higher levels than *rupestris*, but see other examples under *rupestris* in Tulare County; the reason why those Tulare County records are noted.

**Distribution: California:** Because of that same revision (Emmel, Emmel & Mattoon, 1998a and c), published records of these fritillaries may be inaccurate because the use of names has been changed and adjusted and those records need to be re-evaluated by someone familiar with that region. Those authors stated that the male syntype of *juba* fits *callippe* phenotypes found on the west slope of the Sierra in Sierra and Plumas Counties.

**Habitat:** Upper Sonoran and lower Transition Life Zones. Like other *callippe*, *juba* should fly in foothill woodland, chaparral and mixed coniferous forest.

**Flight:** Early June to early August.

**f. Nevada Fritillary—*Speyeria callippe nevadensis*** (W. H. Edwards, 1870).

**Taxonomic notes:** This subspecies occurs on the east slope of the Sierra Nevada and differs by having a greenish hindwing disc and is brightly silvered.

**Sierra Nevada Type Locality:** Valleys of the Sierra Nevada near Virginia City, abundant near Washoe Lake, Nevada.

**Records: California: Mono County:** N Lee Vining Creek Camp 24 June 1976 (KD); Little Walker River near Sonora Jct 17 Aug 2000 (KD); Green Canyon 6 July 1996 (BRB); Antelope Canyon 12 July 1996 (BRB); Hot Creek near Mammoth 24 June 2006 (KD). **Nevada: Douglas County:** Spooner Lake State Park 19 June 1988 (JD).

**Distribution: California:** At least Alpine, Inyo, Nevada, Mono and Sierra counties with many records from the Mammoth Lakes, Mono Lake and Sonora Junction/Little Walker River area and Bridgeport Canyon in Mono County. **Nevada:** Carson City, Douglas and Washoe counties. This subspecies should occur from the Bishop Creek drainage (rare) to the northern end of the Sierra Nevada but published or photographic submissions north of Mono County are scarce or lacking.

**Habitat:** These Great Basin fritillaries fly in sagebrush scrub at relatively high elevation, often near water on the east slope of the Sierra Nevada. Adults often visit roadside flowers.

**Flight:** Late June-August.

**158. Egleis or Great Basin Fritillary—*Speyeria egleis*** (Behr, 1862).

There are two subspecies recorded for the Sierra Nevada.

**a. Egleis or Great Basin Fritillary—*Speyeria egleis egleis*** (Behr, 1862).

**Sierra Nevada Type Locality:** Gold Lake, Sierra County, California.

**Records: California:** Records given for **Kern County** are for the southern range limits for this subspecies: Greenhorn Mountains: Sunday Peak 7300'-8320' 31 July 1995 (KD); south to Tiger Flat area 31 July & 7 Aug 1995 (KD). Sierra Nevada: Pine Flat south end Kern Plateau 2 Aug 1985 (KD). Owens Peak 8300' 16 July 1986 (Derham Giuliani). **Alpine County:** Leviathan Peak, Monitor Pass, Humboldt-Toiyabe National Forest 15 July 2019 (PAO-EBO). **Amador County:** 6-7 mi. W of Silver Lake 12, 13 and 15 July 1986 (KD). **Madera County:** Fresno Dome 7300' 11 July 1999 (KD); Warren Creek 9000' E of Tioga Pass 5 July 1989 (KD). **Mariposa County:** Fish Camp 28 July 1989 and 4 Aug 1990 (KD); **Mono County:** Saddlebag Lake area 13 Aug 1970 and 29-30 July 2019 (KD); Sonora Pass 19 July 1976 (KD); Little Walker River Rd. near Sonora Jct. 17 Aug 2000 (KD). **Sierra County:** Forest road 54, S Bassetts, Tahoe National Forest 9 July 2012 (SFSU - BSNC). **Plumas County:** Round Lake loop, Plumas National Forest 10 July 2012 (SFSU - BSNC). **Tulare County:** Pine Flat south end of Kern Plateau 2 Aug 1985 (KD). Greenhorn Mountains: Tobias Peak 7 Aug 1995 & 10 June 1996 (KD); Baker Ridge and Lookout 7753' 4 & 24 July 1995 (KD); Portuguese Pass 7 July 1995 & 2 mi N of that Pass 31 July and 7 Aug 1995. This butterfly was not known from any Greenhorn Mountains locations until several years after a major 1990 wildfire that consumed a huge buildup of dead branches and vegetation. As the forest grew back and became cluttered again, *egleis* disappeared again there over ten years ago. But with another fire 2-3 years ago there, maybe it will return. **Tuolumne County:** Niagara Creek-Eagle Meadows Rd. area 8 July 1987 and 12 July 1994 (KD); 2 mi. W of Sonora Pass 9100', 3 July 1959 (RES, PAO, Nora Opler).

**National Park Records: Kings Canyon NP: Tulare County:** South Boundary (General's Hwy.) 10 July 1989 (KD). **Sequoia NP: Tulare County:** Vicinity of General Sherman Tree 9 to 29 July 1943 (Tom Blevins); Mineral King Valley 5 July 1985 & 22 July 1991 (KD); Monarch Lakes Trail 26 July 1985 (KD); Timber Gap 22 July 1991 (KD); Farewell Gap Trail 19 July 1993 (KD); Lodgepole 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** 2 mi N of Yosemite Creek Camp 11 Sep 1974 (RLL), granite slopes at top of Yosemite Falls 13 July 1966 (KD). **Tuolumne County:** Mt. Dana 8 Aug 1933 (JSG); Dana Meadows 30 July 2018 (YBC); Lembert's Dome 24 July 1957 (AOS); Crest W of Tioga Pass 6 Aug 1957 & 19 Aug 1958 (AOS).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Kern, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. This is a very common butterfly of the Sierran west slope (East slope in Mono County) and high country.

**Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Forest glades, meadows and roadsides in upper Transition, Canadian, Hudsonian and lower Arctic-Alpine Life Zones.

**Flight:** Late June through September.

**General:** This common and widely distributed species and the Mormon Fritillary can be very difficult to distinguish but *egleis* tends to stay closer to the forest while *Speyeria mormonia* favors open meadows. Both go to nectar on asters and visit other flowers avidly.

**b. Tehachapi Fritillary—*Speyeria egleis tehachapina*** (J. A. Comstock, 1920).

**Taxonomic notes:** This subspecies is or was distinguished by its lack of silvered spots on the hindwing on the ventral side.

**Type Locality:** Highest Peak in the Tehachapi Mountains, Kern County, California.

**Records: California: Kern County:** Piute Mountains: Piute Peak 8432' 23 July 1971; 1 & 3 July 1972; 7 July 1973; 6 July 1974 & 6 July 1996 (all JB); Liebel Peak 7 July 1973 (JB); Piute Mountain Vista or Lookout 8326' 11 July 1976 and 6 July 1996 (all JB). The other localities for this subspecies were in the Tehachapi Mountains which are not in the Sierra Nevada (See Davenport, 2014 for those records).

**Distribution: California:** Kern County, California only. This subspecies was last seen at the summit of Tehachapi Peak in the Tehachapi Mountains 1 August 1998 by the author. Since then, long-term drought and higher temperatures have altered the habitat of this species in the Piutes and in the Tehachapi Mountains and this subspecies was apparently not able to survive at the southern end of this specie's range. While Tom and John Emmel (1973) believed *tehachapina* might turn up on Owens Peak, in the Greenhorns or at the south end of the Kern Plateau, the *egleis* that turned up in those places were all silvered *Speyeria egleis egleis*. There are inaccessible or hard-to-reach peaks in the Piutes where *tehachapina* might still exist.

**Habitat:** Mountain summits at the tops of peaks in the Tehachapi and Piute Mountains.

**Flight:** Late June to very early August.

**159. Irene's Fritillary—*Speyeria hesperis irene*** (Boisduval, 1869).

**Taxonomic notes:** Formerly treated as a *Speyeria atlantis* or *Speyeria electa irene*. This changed when it was published that what was all considered one species were actually at least two, and the name *hesperis* took priority over the name *electa* as used in Howe (1975), also see Scott, Kondla and Spomer (1998). Nick Grishin reported online that unpublished DNA studies seem to support the concept that *irene* is a species-level taxon, not a subspecies of *hesperis*.

**Sierra Nevada Type Locality:** Gold Lake, Sierra County, California.

**Records: California: Amador County:** 6-7 mi W Silver Lake including Iron Mountain turnoff and Shot Rock Vista 12-15 July 1986 (KD). **Calaveras County:** 3.5 mi NE of Cottage Station 6200' 19 July 1981 (REW). **Inyo County:** Mulky Meadows 9400', W of Lone Pine 6 & 14 July 1994 (EDB, ID questionable). **Madera County:** Rainbow Falls, 5 mi W of Crystal Crag Lodge 3 Aug 1961 (RES); 5 mi W of Lower Ottoway Lake 19 Aug 1961 (AOS). **Mono County:** Anna

Lake E slope of the Sierra Nevada 16 July 1974 (JRM). **Nevada County:** Donner Pass 7000' 25 Oct 1995, very Late (AMS). **Placer County:** Lake Tahoe 17 July 1959 (Milwaukee Public Museum in Howe, 1975); Soda Springs 6700' 2 July 1999 (EDB). **Plumas County:** Round Lake loop, Plumas National Forest 10 July 2012 (SFSU - BSNC). **Sierra County:** Packsaddle Campground, nr. Packer Lake, Tahoe National Forest 9 July 2012 (SFSU - BSNC). **Tuolumne County:** Mather 12 July 1956 (JSG); Niagara Creek area (S of SR 108) 4 July 1974 (JRM); 8 July 1987; 13 July 1994 and 17 Aug 2017 (KD); Mill Creek SR 108, 8 July 1987 (KD). **Nevada: Douglas County:** Carson Range, Montreal Canyon, 1 Aug 1988 (GTA).

**National Park Records: Yosemite NP: Mariposa County:** Tenaya Lake 19 Aug 1961 (AOS). **Tuolumne County:** Aspen 14 July 1956 (JSG);

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Inyo (?), Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra and Tuolumne counties. The Inyo County record is questionable, I have seen no photographs or specimens to validate the report. This species seems quite scarce or is poorly reported south of Tuolumne County, where Irene Fritillaries are common in forest openings and meadows along the Eagle Meadow Rd, south side of the Sonora Pass Rd. This species is recorded for Yosemite National Park but has a very poorly known distribution there. It is unknown from Sequoia and Kings Canyon National Parks but may turn up there or in Fresno County. **Nevada:** There is one record from Douglas County.

**Habitat:** This fritillary is most often seen along forest and meadow edges in the Canadian Life Zone.

**Flight:** July into at least the first part of September.

**General:** This species tends to be highly localized, at least in the Yosemite region, but can be common in places along the Sonora Pass and Carson Pass Roads. Because *irene* is not so widely distributed as many other species in the Sierra Nevada, it is a favorite with people looking for butterflies. Both *irene* and *hydaspe* can be easily confused with each other where both species occur together.

### 160. Hydaspe Fritillary—*Speyeria hydaspe* (Boisduval, 1869)

There are two subspecies in the Sierra Nevada. This species can be difficult to distinguish from *Speyeria zerene* and *Speyeria hesperis irene*. *Hydaspe* is unsilvered on its hindwing discs which often helps separate it from silvered *zerene*, but some *zerene* can be unsilvered.

#### a. Hydaspe Fritillary—*Speyeria hydaspe hydaspe* (Boisduval, 1869).

**Taxonomic notes:** Emmel, Emmel & Mattoon (1998a) moved the type locality from Yosemite Valley further north to Gold Lake as a result of recognizing the two *hydaspe* syntypes better matched the darker northern phenotype. This resulted in recognizing changed ranges for the two Sierra Nevada subspecies. The changes meant that what was considered subspecies *purpurascens* (Hy. Edwards, 1877) is now considered a synonym of nominotypical *hydaspe*.

This subspecies is darker with increased melanism dorsally, and extensive red-brown to mahogany brown scaling on the ventral hindwing, while southern populations (= *viridicornis*) show lighter dorsal markings and marked reduction in the darker brown scaling ventrally. The nominotypical subspecies (without some such blending) occurs in Sierra and Plumas counties.

**Sierra Nevada Type Locality:** Gold Lake, Sierra County, California.

**Records: California: Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 29 June 2017 (SFSU – BSNC). **Sierra County:** SE side of Gold Lake 0.4 to 0.6 air mi N end Squaw Lake 6440' to 6460', 4 Aug 2000 (JFE); Forest Road 54, south of Bassetts, Tahoe National Forest, June 20, 2016 (SFSU-BSNC). Yuba Pass meadow, Tahoe National Forest 10 July 2012 (SFSU – BSNC).

**Distribution: California:** El Dorado, Nevada, Placer, Plumas, Yuba, and Sierra counties. This west slope subspecies occurs in the northern Sierra Nevada south to El Dorado County where it meets subspecies *viridicornis*. **Nevada:** There are no records.

**Habitat:** Upper Transition and Canadian Zone forest openings, meadows and roadsides.

**Flight:** July into early September.

**General:** This species is popular with collectors and watchers and is often quite common in areas it inhabits, with adults frequenting flowers in meadows or on hillsides. It often co-occurs with other species of fritillaries, but is usually fairly easy to identify.

**b. Greenhorn Fritillary—*Speyeria hydaspe viridicornis* (J. A. Comstock, 1925).**

**Taxonomic notes:** This subspecies was long treated as an endemic subspecies in the Greenhorn Mountains of Kern and Tulare Counties. As a result of moving the type locality for nominotypical *hydaspe* further north, *viridicornis* became recognized as the *hydaspe* south of El Dorado County which actually is very similar to *viridicornis*.

**Sierra Nevada Type Locality:** Greenhorn Mountains, California.

**Records: California: Amador County:** Silver Lake and Shot Rock Vista 11-15 July 1986 (KD). **Fresno County:** Crestmans, below Huntington Lake 12 June to 29 July 1930 (LMI); above Shaver Lake 3-8 July 2002 (RE). **Kern County:** Greenhorn Mountains: Top of ski slope at Shirley Meadows 6 July 1975 & 11 July 1981 (KD); Sunday Peak 7000' 25 June 1997 & 15 July 2000 (KD); Black Mountain Saddle 23 July 2001 (KD); Greenhorn Mtn. Park (=Alta Sierra) 15 July 1992 (KD). **Madera County:** Sugar Pine 4 Aug 1990 & 29 June 2004 (KD); Fresno Dome Camp 26 July 1992 & 21 Aug 1999 (KD). **Mariposa County:** Fish Camp 5000' 25 July 1992 & 11 July 1999 (KD). **Tulare County:** Greenhorn Mountains N of Portuguese Pass 26 June & 11 July 1981 (KD); Balch Park 26 June 1972 & 29 July 1977 (KD); Freeman Creek Grove 20 July 1975 (JB) & 25 July 1980 (KD). **Tuolumne County:** Mather 12 July 1956 (JSG); Niagara Creek/Eagle Meadow Rd. off SR 108, 8 July 1987 & 12-13 July 1994 (KD).

**National Park Records: Kings Canyon NP: Tulare County:** North Boundary 10 July 1989 (KD); Buena Vista Point 28 June 1987 & 10 July 1989 (KD). **Sequoia NP: Tulare County:** Mineral King Valley 5 July 1985 & 22 July 1991 (KD); Timber Gap Trail 8400' 22 July 1991 (KD). Lodgepole/Tokopah Falls Trail 2 Aug 1993 (KD); Giant Forest Village 15 Aug 1985; 27 June & 24 July 1987 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley 16 July 1966 and 14 July 1967 (KD); trail from Camp Curry to Glacier Point 9 July 1933 (JSG); Crane Flat 4 July 1954 (JWT) **Tuolumne County:** Hetch-Hetchy Summit 13-17 July 1956 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Tulare and Tuolumne counties. There are no records for Inyo or Mono Counties. **Nevada:** There are no records from the Sierra Nevada.

**Habitat:** This is a species of forests in the upper Transition and Canadian Zones. Adults frequent forest openings, meadows and roadside flowers, mostly (if not all) on the west slope of the Sierra Nevada.

**Flight:** Late June to early September.

**161. Mormon Fritillary—*Speyeria mormonia mormonia*** (Boisduval, 1869).

**Taxonomic notes:** The name *arge* was used for the Sierra Nevada populations of this species in the 1963 Yosemite Butterflies publication in that year. Emmel, Emmel & Mattoon (1998a) noted that the phenotype of nominotypical *mormonia* is typical of what occurs in the northern and central Sierra Nevada. While *arge* is currently viewed as a synonym of *mormonia*, southern Sierra Nevada populations are lighter and some west slope populations west of Yosemite National Park also appear rather different. Future authors may choose to recognize *arge* and possibly additional subspecies within the Sierra Nevada.

**Sierra Nevada Type Locality:** Little Valley, W of Washoe Lake, Washoe County, Nevada. This is just north of Carson City, Nevada.

**Records: California: Calaveras County:** Hwy 4, 7.9 mi W Alpine County 26 Aug 1995 (RK). This species occurs generally in open high elevation subalpine meadows as early as late June but more usually from about mid-July into September. This species has not yet been found in Kern County and it is unrecorded in the Greenhorn Mountains though suitable habitat appears to exist. This is a common butterfly so only the one general record is given.

**National Park Records: Kings Canyon NP: Tulare County:** Wilsonia and meadow SE of Buena Vista Peak 18 Aug 1989 (KD). **Sequoia NP: Tulare County:** Vicinity of General Sherman Tree 9 to 23 July 1943 (Tom Blevins); Mineral King Valley & Monarch Creek 26 July 1985 (KD); Halstead Meadow 8000' and Huckleberry Meadows 22 to 30 Aug 1939 (Mrs. Cary); south end of Mineral King, Farewell Gap Trail 19 July 1993 (KD); Wolverton and Little Baldy Saddle 24 July 1987 (KD); Dorst Camp 16 July 1992 (KD). **Yosemite NP: Mariposa County:** Crane Flat 19 July to 19 Aug 1957 (JWT). **Tuolumne County:** Tuolumne Meadows 18 July to 14 Aug 1957 and 2 Sep 1958 (JWT); Tioga Pass 13 Aug 1929 (JSG); Mt. Dana 8 Aug



1933 (JSG) and Mt. Dana, W slope 16 Aug 1957 and 30 Aug 1958 (JWT); Gaylor Lakes 31 Aug and 3 Sep 1958 (JWT).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Upper Transition, Canadian and Hudsonian Zone subalpine meadows and forest glades, alpine fell fields in the Arctic-Alpine Zone up to about 11,000'.

**General:** This very small fritillary tends to be a very common species and is difficult to identify in the field when *Speyeria egleis* is also present. In general, *mormonia* favors the more wide-open subalpine meadows while *egleis* favors smaller forest openings and glades and roadsides.

**Flight:** Late June-September.

### 162. American Painted Lady—*Vanessa virginiensis* (Drury, 1773).

**Distribution: California:** General records are not given here because this butterfly is widely distributed within all counties in the Sierra Nevada. While considered much less common than *Vanessa annabella* and *Vanessa cardui*, this species is often found in the southern Sierra Nevada more commonly from mid-August into early October. Adults avidly visit roadside flowers in late season.

**Type Locality:** Virginia based on the name given it.

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 27 July 1985 (KD); Giant Forest Village 15 Aug 1986 (KD); Wolverton 24 July 1987 (KD); Halstead Meadow 18 Aug 1989 (KD); Amphitheater Point 16 July 1992 and 2 Aug 1993 (KD); Little Baldy Saddle 2 Aug 1993 (KD); Lodgepole 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** Yosemite Creek Trail S of Tioga Rd 9 July 1956 (JSG); meadow near Yosemite Village, Yosemite Valley 3 Aug 1963 (KD).

**Habitat:** Lower Sonoran, Upper Sonoran, Transition and Canadian Life Zones.

**Flight:** March-early November. Adults can hibernate but they are seen less frequently than other *Vanessa* species. I have not personally witnessed any obvious migrations with this species but perhaps the high number of observations in late season may suggest that like *Vanessa annabella*, this species may move upslope out of more lowland communities in late season.

### 163. Painted Lady—*Vanessa cardui* (Linnaeus, 1758).

This butterfly probably has visited almost every square foot of the Sierra Nevada at one time or another. It is sometimes called the “Cosmopolitan” because it occurs on every continent except Antarctica. Strangely, this species had very poor migrations northward in the spring and

southward in the fall of 2018, but had a huge return spring migration in 2019 when seeing a hundred individuals at a time was commonplace.

**Type Locality:** Sweden.

**National Park Records: Kings Canyon NP: Tulare County:** Buena Vista Peak Trailhead 23 June 1989 (KD). **Sequoia NP: Tulare County:** Mineral King Valley 5 July 1985 (KD); Mineral King: Timber Gap Trail 22 July 1991 (KD); White Chief Trail 23 July 1992 (KD); Buckeye Flat 18 Apr 1986 & 13 Apr 1980 (KD); Tokopah Falls 12 June 1990 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley 9 Apr 1992 (KD). **Tuolumne County:** Tuolumne Meadows, Gaylor Lakes Trail and Dana Meadows 29 July 2019 (YBC).

**Distribution:** This species occurs in all Sierra Nevada counties.

**Habitat and Flight:** Unrestricted, occurs from Lower Sonoran up into the Arctic-Alpine Life Zones. The larvae use a wide variety of hostplants. I have observed overwintering adults along the Kern River in what is now east Bakersfield and at the southern end of the Sierra Nevada in canyons bordering the Mojave Desert in the Cantil area on the north side of Highway 14. Adults visit bladderpod plants for nectar in December and January, at least in good rainfall years. The main flight runs from late February into November.

**General:** This is one of the most common butterflies on earth. Populations in Europe and Asia also migrate southward in the fall and northward (from Africa and elsewhere) in the spring. Migrating adults are known to sometimes fly thousands of feet above ground level and have been picked up by radar, perhaps why few migrating adults in California were seen in 2018. Painted Ladies are often confused with *Vanessa annabella* and misidentified as migrating “Monarchs.” Winters and springs with heavy rainfall seem to trigger such mass migrations. Robert Langston documented such spring and fall migrations in California in the annual Season Summaries when he was the Season Summary Coordinator for California prior to the year 2000.

#### **164. West Coast Lady—*Vanessa annabella* (Field, 1971).**

**Type Locality:** First Valley W of Arroyo Verde Park, Ventura, Ventura County, California

**Records: California: Kern County:** Weldon 100+ individuals on 12 Nov 2014 where this species is normally uncommon. **Tulare County:** W of Sherman Pass 7700' to 9150' 16 Sep to 7 Oct 2014, very abundant in an area where this species is normally scarce. Calkin's Flat along the Kern River 7 Oct 2014, very common. Arthur Shapiro has noted this species appears to move up the west slope of the Sierra Nevada in the fall. I observe such movements of this butterfly normally found in city yards and parks in most years, but not in years of extreme drought. Because this species is widely distributed, extensive general records are not given.

**National Park Records: Kings Canyon NP: Tulare County:** Village Meadow 23 June 1989 (KD) and E of Buena Vista Peak 18 Aug 1989 (KD). **Sequoia NP: Tulare County:** Mineral King Valley 5 July 1985 (KD); Mineral King, Timber Gap 22 July 1991 (KD); Silver City 26 July 1985 (KD); Ash Mountain 28 Feb 1986 (KD). **Yosemite NP: Mariposa County:** Research

Preserve (includes Yosemite Creek S of Tioga Rd) 14 to 18 July 1933 (JSG); Hetch-Hetchy 12 July 1956 (JSG).

**Distribution:** This species occurs throughout the Sierra Nevada in all counties up into Canadian Zone forests. The general records of *V. annabella* given above show how this species moves up into the Sierra Nevada in late season.

**Habitat:** This butterfly is most common in city gardens and parks, yards and in forest openings and visiting fall blooming composites in the fall.

**Flight:** Spring to fall but most frequently seen in the Sierra Nevada in early spring and in the fall. *Vanessa annabella* hibernates in the winter, but occasionally appears on warm sunny days. This butterfly tends to be scarce during spring and summer butterfly counts.

**General:** West Coast Ladies are frequently misidentified as the more widespread Painted Lady (*Vanessa cardui*), but these tend to be smaller butterflies than *V. cardui* and though they share similar markings, with experience, the two species can usually be easily identified. West Coast Ladies tend to stay in clearings in yards or parks late in the afternoons, while Painted Ladies tend to just fly through a yard or park, with exceptions.

#### **165. Red Admiral—*Vanessa atalanta rubria* (Frühstorfer, 1909).**

This blackish species with an orange-red stripe across the forewings and along the hindwings is well distributed in the Sierra Nevada but becomes scarcer in the High Sierra. Adults tend to occur in woodland openings late in the day. Nettles are a favorite host plant.

**Type Locality:** “Mexico”

**Records: California: Mono County:** Two individuals at Mono Lake Park 28 July 2019 (KD). This species is very rare in the Yosemite region and lacking from butterfly count records there.

**National Parks Records: Yosemite NP: Mariposa County:** Yosemite “26 June” (E. O. Essig).

**Distribution:** All counties in the Sierra Nevada.

**Habitat:** Wet areas where nettles grow (even in desert mountain ranges), often along streams or drainages. Adults also favor wooded city parks and forest openings in suitable habitats.

**Flight:** Spring to fall. Adults hibernate at least in the southern Sierra Nevada and can appear on warm winter days. There are reports that this butterfly can migrate northward into areas where adults cannot survive cold winter temperatures.

#### **166. Milbert’s Tortoiseshell—*Aglais milberti subpallida* (Cockerell, 1889).**

**Taxonomic notes:** The name *furcillata* (Say, 1825) was used for western populations in the past. Many authors have chosen to place this species in the genus *Nymphalis*.

**Type Locality:** Westcliff, Custer County, Colorado.

**Records: California: Calaveras County:** Big Meadows 9 July 1931 (R. Wind). **Fresno County:** Kaiser Crest 17 June 1930 (MI); Duck Lake, 6 mi SE of Crystal Crag 3 Aug 1961 (RES). **Inyo County:** SF Bishop Creek 8300' 7 July 1979 & 23 June 1986 (KD); a few visiting willow catkins along Lone Pine Creek in canyon below Whitney Portal 30 Mar 2018 (KD). **Kern County:** Havilah 29 May 1979 (KD); Tom's Hill near Butterbrecht Peak 3 May 1986 (JGP), southernmost record for the Sierra Nevada; Canebrake Fish & Wildlife Preserve off SR 178, 1 Feb 2002 (SS) and 23 Apr 2005 (KD); Pine Flat at S end of Kern Plateau 5 July 2003 (KD); Kern Canyon at Democrat along Kern River 7 & 14 Feb 2002 (KD); Greenhorn Mountains: Shirley Meadows 6 July 1975 & 13 June 1977 (KD). **Madera County:** 5 mi S of Oakhurst 10 Apr 1964 (PAO); Sugar Pine 27 Apr & 23 May 1992 (KD). **Mariposa County:** Briceburg 10 Mar 1979 (KD); 26 Feb 1986 (AOS); Jerseydale 20 May 1996 (AOS). **Mono County:** Swall Meadow 20 May 1997 (KD); Saddlebag Lake 21 June 1986 & E side Saddlebag Lake 7 Sep 2009 (KD); N slope Dana Plateau 16 Aug 1975 & 24 July 1993 (KD); Mono Lake Park 26 June 1999 (KD). **Sierra County:** Calpine Lookout, Tahoe National Forest 22 June 2005 (SFSU-BSNC). **Tulare County:** Three along upper Kern River in wet ravine along road at Limestone Camp 19 Jan 2003 (KD); Bald Mountain Lookout 9400' 10 July 1982 (KD & AR); Sherman Pass Rd W of Pass 6800'-9000' 21 June to 24 July 1982 (KD); Quaking Aspen at 7300' 4 June 2015 (KD, SR & David Horner). **Nevada: Washoe County:** Mt. Rose in June (AMS).

**National Park Records: Sequoia NP: Tulare County:** 2 mi W of Hospital Rock 28 Feb 1986 (seen, KD); Mineral King, Timber Gap Trail 9000' 22 July 1991 (KD); Redwood Creek 7 May 2002 (KD). **Yosemite NP: Madera/Tuolumne Counties:** Mt. Lyell 6 Aug 1933 (JSG). **Tuolumne County:** Crest W of Tioga Pass 1 to 19 Aug 1958 (AOS); Mt. Dana, N slope 24 Aug 1958 (AOS).

**Distribution:** All counties in the Sierra Nevada.

**Habitat:** This species often occurs along streams and in wet canyons where the nettle host grows but adults also fly to the tops of the highest mountains in the Arctic-Alpine Life Zone. But conversely, I have also seen *milberti* at wet springs in Mojave Desert habitat (Kelso Valley area and near Whitney Portal along Lone Pine Creek) and in the mostly arid Kern River Valley where nettles grow in the early spring.

**Flight:** As early as January and February on warmer winter days, but mostly seen from late February to early September.

**General:** This butterfly with a striking yellow-orange band across both wings above is both uniquely patterned and difficult to approach. Usually scarce, this is a highly prized species for both collectors and watchers, so highly prized I watched David Horner laying down in stands of stinging nettle to photograph adults at Quaking Aspen in early June 2015, a lifer for him!

**167. California Tortoiseshell—*Nymphalis californica californica*** (Boisduval, 1852).

**Sierra Nevada Type Locality:** Queen Lily Campground, near Belden, North Fork Feather River Canyon, 2400', Plumas County, California.

**California Records** in Sierra Nevada Mojave Desert terrain include north of Kelso Valley 13 mi. south of SR 178 at Weldon, Kern County (CA) at spring runoff down a ravine 24 March 2006 and on several other occasions. These many adults were moving west from the Bird Spring Pass area into the Piute Mountains. This species is also seen regularly along Lone Pine Creek (on the buds of willow catkins) below Whitney Portal in Inyo County in March and April in many years (30 March 2018, April 25, 2005 and June 18, 2006, all KD), in elevated Mojave Desert flying with *Aglais milberti* and *Polygonia gracilis zephyrus* on the March date.

**National Park Records: Kings Canyon NP: Fresno County:** Grant Grove 1 Jan 2009, this ultimate early record was photographed by William Bouton in 3 feet of snow and a temperature of 49 degrees.; E of Buena Vista Peak 18 Aug 1989 (KD) and Generals Hwy 13 June 1990 (KD). **Sequoia NP: Tulare County:** Ash Mountain 21 Feb 1959 (R. C. Burns); Buckeye Flat 28 Feb & 18 Apr 1986 (KD); Potwisha 28 Feb 1986 (KD) Mineral King Valley and Cabin Cove 5 July 1985 (KD); Monarch Creek above Mineral King 9500' 26 July 1985 (KD); Tokopah Falls 12 June 1990 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley 24 June to 5 July 1933 (JSG); trail from Camp Curry to Glacier Point 9 July 1933 (JSG); Bridalveil Creek 23 June 1959 (JSG). **Tuolumne County:** Outbreak numbers Dana Meadows, Tioga Pass and Gaylor Lakes Trail 30 July 2018 (YBC), fewer numbers 29 July 2019 (YBC).

**Distribution:** All counties in the Sierra Nevada. Extensive general records are not given as the species can occur virtually anywhere during migrations and outbreak years.

**Habitat:** Unrestricted. This very beautiful medium-sized orange-red and black butterfly occurs in chaparral and foothill woodland where the *Ceanothus* (buckthorn) host grows, mixed coniferous forest, Canadian and Hudsonian Life Zone forests up above timberline, usually near water. This highly prized butterfly is famous for being a very scarce butterfly for many years, then has an outbreak year where thousands of adults appear, often near water along streams or drainages. In 2018, this species was seen in high numbers even well above timberline in the Tioga Pass region inside and outside of Yosemite National Park during a butterfly count in late July. This montane butterfly rarely migrates or strays into the San Joaquin Valley and I have seen it cross Mojave Desert plant communities in the more eastern portions of the southern Sierra Nevada to reach the Piute Mountains in March and April in wet years where there is standing water or drainages.

**Flight:** Usually late February to as late as mid-October, depending on weather patterns, species migratory movements and local conditions. Adults do hibernate in the winter and sometimes appear on warm winter days. This tends to be a very fast and wary flier, hard to approach.

**168. Mourning Cloak—*Nymphalis antiopa antiopa* (Linnaeus, 1758).**

This well-known large brown and black butterfly with yellow wing margins is familiar in cities and in the Sierra Nevada.

**Type Locality:** Sweden.

**Records: California:** General records are not given as this species occurs in all Sierra Nevada Counties in a wide range of habitats and elevations.

**National Park Records: Kings Canyon NP: Tulare County:** Wilsonia 18 Aug 1889 (KD).

**Sequoia NP: Tulare County:** Ash Mountain 21 Feb 1959 (R.C. Burns); Buckeye Flat 17 May 1985 & 13 Apr 1990 (KD); Mineral King Valley 5 July 1985 and 19 July 1993 (KD); White Chief Trail 9500' 23 July 1992 (KD); 2 mi W Cabin Cove 5 & 27 July 1985 (KD); Potwisha 28 Feb 1986 (KD); Halstead Meadow 15 Sep 1987 (KD); Tokopah Falls 12 June 1990 (KD).

**Yosemite NP: Mariposa County:** Research Reserve (including Yosemite Creek Trail S of Tioga Rd 8 July 1956 (JSG). **Tuolumne County:** Lember's Dome Trail 1 July 2019 (photo, Frank Model).

**Distribution: California:** All counties in the Sierra Nevada.

**Habitat:** Flies in meadows with willows and along watercourses. It also occurs in cities within the Sierra Nevada in which elms (a major larval host) grows.

**Flight:** This species can appear as early as January, flying through August at some localities, it is rarely seen after July in the southern Sierra Nevada and adults there may not overwinter. I note freshly emerged Mourning Cloaks along the Kern River east of Bakersfield by mid-January, but none seem to be there when checked in November or December.

**169. Satyr Anglewing or Comma—*Polygonia satyrus* (W. H. Edwards, 1869).**

**Taxonomic notes:** The Sierra Nevada populations are so variable that most authors choose not to apply a subspecies name. Nominotypical *satyrus* is best applied (if applied at all) to the Rocky Mountain populations and the name *neomarsyas* dos Passos, 1969 of the Pacific Northwest may or may not apply even to the more northern California populations.

**Type Locality:** Vicinity of Empire, Clear Creek County, Colorado.

**Records: California: Alpine County:** 1 mi E of Monitor Pass 8200' 16 July 1998 (W.D. Patterson). **Calaveras County:** Big Meadow 9 June 1930 (R. Wind). **Fresno County:** McKinley Grove of Big Trees 12 July 1930 (LMI); San Joaquin River below Friant Dam 20 Mar 2004 (KD). **Inyo County:** SF Bishop Creek at 8350', 6 July 2004 (KD). This may be the only record for this county. **Kern County:** Havilah, Clear Creek 7 June 2008, probably southern range limit for the Sierra Nevada; Erskine Creek Canyon E of Lake Isabella 25 Mar 2012 (KD); Greenhorn Mountains near Tiger Flat 25 June 1993; Kernville 14 June 1998 (all KD). **Madera County:** Near Fresno Dome 8 June 1992 (KR); Fresno Dome Camp 1-2 July 1996 (KD); Sugar Pine 5 Sep 1995 (KD). **Mariposa County:** Jerseydale "scarce" (AOS). **Mono County:** Mono Lake

Park 2, 4 & 17 Aug 1975 (KD); Swall Meadow 9 May 1997 (KD). **Tulare County:** Cherry Hill Rd. S of Sherman Pass Rd. at Alder Crk. 22 May to 1 July 2012 (KD); Sherman Pass Rd Dry Creek Canyon 8 Apr 2018 (KD); N end Linn's Valley along Poso Creek 10 Aug 1998 & 15 Sep 1999 (KD). **Tuolumne County:** Meadows 2 mi W of Sonora Pass 9100' 3 July 1959 (RES/PAO/Nora Opler). **Nevada: Carson City County:** Carson Valley, Genoa 5 July 1982 (GTA). **Washoe County:** Washoe Lake State Park 28 Feb 1986 (JD).

**National Park Records: Sequoia NP: Tulare County:** 2 mi W of Cabin Cove 26 June 1985 (KD); Buckeye Flat (no date, PN); Timberline Lake 11,100' 5 July 2012 (EL). **Yosemite NP: Mariposa County:** Yosemite Valley, Museum 5 July 1933 (JSG); Yosemite Valley 9 Apr 1992 (seen, KD) and near Mirror Lake 9 Apr 1992 (seen, KD).

**Distribution:** This species is known to occur in all Sierra Nevada Counties except Amador County. **Habitat:** This anglewing occurs in riparian areas and other wet areas in deciduous, mixed coniferous forests and coniferous forest where nettles grow, occurring from the San Joaquin Valley floor (rarely) into the Upper Sonoran, Transition and Canadian Life Zones. The observer will often have to get his feet wet to collect or photograph this butterfly.

**Flight:** March to early October in the Sierra Nevada.

#### **170. Oreas Comma—*Polygonia oreas oreas* (W. H. Edwards, 1869).**

**Taxonomic notes:** Most claimed records for this species in the Sierra Nevada are very darkly marked *Polygonia gracilis zephyrus*. Nearly all records for the state are nominotypical *oreas*, but in the northern Sierra Nevada, we may have individuals that appear closer to subspecies *silenus* (W. H. Edwards).

**Type Locality:** California, suggested to be the mountains of northern California.

**Records: California: Nevada County:** Donner Pass area 7000' 25 & 30 June 1985 (AMS). **Plumas County:** Meadow Valley (Forestry Field Station) 4100' 2 June 1984 (R. Robertson), identification confirmed by Robert Langston and Sterling Mattoon; Schneider Creek at Flying T. Ranch 1 & 5 July 2009 (W. D. Patterson).

**Distribution: California:** Unclear. The records above seem to be the only valid Sierra Nevada confirmed records that are published. I have to wonder how many more *oreas* are in collections or have been photographed. Davenport (2007) mentions a possible record from Mariposa County by Comstock (1927). I could not locate that specimen at the Natural History Museum where Comstock's collection was donated.

**Habitat:** This uncommon species in California tends to occur in a narrow range along the Pacific Coast and in the Coast Ranges, often along small streams where the larval host, *Ribes diveracatum* grows. The adults love to fly and alight on poison oak in the Santa Lucia Mountains in the Coast Ranges of Monterey County. There are so few valid Sierra Nevada records, the habitats and actual distribution in the range are unknown other than that this species in the Sierra Nevada is only yet recorded for the northern part of the range.]

**Flight:** June and early July per the above records but flight periods in the Sierra Nevada must be much longer.

**171. Zephyr Anglewing or Comma—*Polygonia gracilis zephyrus*** (W. H. Edwards, 1870).

**Taxonomic notes:** Thirty years ago, it was believed that *zephyrus* was a full species distinct from *Polygonia gracilis* (Grote & Robinson, 1867), a very scarce species of the northeastern U. S. Now, it is widely accepted that the two are conspecific. Some high elevation *zephyrus* are darker than normal lighter *zephyrus* and seem to be associated with willows rather than gooseberries (the most reported larval host). The *zephyrus* in the Rocky Mountains seem to be more orange-red than Sierra Nevada *zephyrus*. Some can be marked very similarly to *Polygonia oreas*, a similarity that leads to that species being wrongly reported from various localities in the Sierra Nevada.

**Near Sierra Nevada Type Locality:** Virginia City, Storey County, Nevada.

**Records: California:** Few records are given here because the species tends to be very common but many records given here support the idea that this species overwinters at very low elevations well below their normal higher elevation habitats. **Inyo County:** Common at a fisherman's flat along the South Fork of Bishop Creek at about 8700' 14 July 2014 (KD), common in Canyon below Whitney Portal along Lone Pine Creek patrolling washes in desert scrub 30 Mar 2018 (KD). **Kern County:** Kern River Canyon at Richbar 1500' 12 Apr 1977 & 15 Feb 1985 (KD); 0.7 mi SW of Sageland, N of Kelso Valley in ravine patrolling within Mojave Desert vegetation including Joshua Trees 1 Apr 2000 (KD). **Tulare County:** Adults out on warm sunny day Limestone Camp at about 3600' 1 Feb 2001 (KD); upper Kern River S of Southern California Edison Dam 11 Mar 2000 (KD); Gateway to Sequoia 28 Feb 1986 (KD);

**National Park Records: Sequoia NP: Tulare County:** Mineral King Valley and Cabin Cove 5 & 27 July 1985 (KD); Mineral King, Monarch Lakes Trail 26 July 1985 (KD); Potwisha and Hospital Rock 28 Feb 1986 (KD); Tokopah Falls Trail 12 June 1990 (KD); Silver City 5 & 27 July 1985 (KD); Wolverton 24 July 1987 (KD); Halstead Meadow 15 Sep 1987 & 16 July 1992 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley 13 July 67 (seen, KD); Tunnel View entrance to Valley 6 Mar 2004 (seen, KD); Yosemite Creek S of Tioga Rd 9 July 1956 (JSG); Badger Pass 20 Aug 1956 (JSG). **Tuolumne County:** Tioga Pass 20 Aug 1958 (AOS); Upper Gaylor Lake 20 Aug 1958 (AOS); Aspen Valley 14 July 1956 (JSG); Tuolumne Grove 24 June 1959 (JSG).

**Distribution:** Reported for all Sierra Nevada Counties.

**Habitat:** This fairly common butterfly occurs in Transition, Canadian and Hudsonian Life Zones but as noted above, often overwinters at lower elevations in the Upper Sonoran Life Zone.

**Flight:** 1 February 2005 to 30 October 2005.



**172. Rustic Green Comma—*Polygonia faunus rusticus*** (W. H. Edwards, 1874).

**Sierra Nevada Type Locality:** Big Trees; form “silvius” (W. H. Edwards, 1874) has a type locality as Yosemite Valley, Yosemite National Park California. This butterfly has been found in or near the “Big Tree” Giant Sequoia Groves in and near those in the Park.

**Records: California: Calaveras County:** Mokelumne River at Moore Creek Camp 23 Apr 1977 (REW). **El Dorado County:** Echo Summit 7 Sep 1933 (JWT). **Fresno County:** Near summit of Mt. Tom 9400' 12-13 July 1930 (LMI); Blue Canyon Rd S of Dinkey Creek Rd 27 May 2002 (seen, KD). **Inyo County:** Near Independence 10 July -10 Aug 1966 (S Johnson). **Madera County:** 5 mi. E of Bass Lake 15 June 1984 (POA); Sugar Pine along Lewis Creek 27 Apr & 23 May 1992; 22 May 1993; 31 Mar 1994 & 5 Sep 1995 (all KD) and 15 Oct 2004 (M. Leski); Fresno Dome Camp 11 June 1993; 1-2 July 1996; 5 July 1999 & 19 Sep 2003 (all KD). **Mariposa County:** Briceburg 24 Apr 1966 (RES); Jerseydale 3500' 12 Apr 1978 (AOS); Fish Camp 24 May 1991 & 27 Apr 1992 (KD). **Nevada County:** Donner Pass 7000' 25 June & 20 Aug 1985 (AMS). **Sierra County:** 6 mi NE Sierra City 5600' 28 June 1975 (RLL), N Yuba River W Downieville 22 Apr 1977 (RLL & H. Koopman) & 16 Apr 2005 (Michael Leski). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest 1 July 2012, 4 July 2017 (SFSU – BSNC). **Tulare County:** Quaking Aspen 30 May 1955 (John & Tom Emmel); Stony Creek 11-12 June 1990 & May 29-30, 2007 and other records (KD); Buck Rock E of Big Meadow near KCNP 12 June 1990 (RPM). **Mono County:** June Lake Loop 25 Aug 1983 (JWT). **Nevada: Carson City County:** Lake Tahoe, Carson City 17 June 1986 (GTA). **Douglas County:** Glenbrook 5 May 1987 (GTA). **Washoe County:** Incline Village 5 May 1987 (GTA).

**National Park Records: Yosemite NP: Mariposa County:** Yosemite Valley near Mirror Lake 9 Apr 1992 (seen, KD). **Tuolumne County:** NW entrance to Yosemite NP off Big Oak Flat Rd. 4000' near Mather 17 May 1963 (Keith S. Brown).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba counties. Extensive records are provided above. The southernmost record for the Sierra Nevada is one taken at Quaking Aspen in 1955 by Emmel & Emmel. I have not been able to find others at that locality. **Nevada:** All counties.

**Habitat:** Upper Transition and the Canadian Life Zones along streams or in forest openings with adults usually becoming more visible and active after mid-afternoon. Adults sometimes go to flowers in the mornings and early afternoons and perch on pine tree leaves and branches often along streams later in the afternoon.

**Flight:** 31 March to 16 October. Adults emerge in early September, overwinter and fly the following spring. Few adults survive past mid-July so there are very few August records. Adults can potentially live for nearly a year.

**General:** This butterfly is rarely seen in much of the Sierra Nevada because it tends to be very scarce or absent when collectors or observers enter its territory.

**173. Gray Buckeye—*Junonia grisea* Austin & J. Emmel, 1998.**

**Taxonomic notes:** This butterfly in the western United States has long been treated as the **Buckeye** or **Common Buckeye**, *Precis* or *Junonia coenia* Hubner, 1822, or more recently as the subspecies *Junonia coenia grisea*. A recent revision of the genus (Lalonde & Marcus, 2018), shows that the western *grisea* is a cryptic species, different than *J. coenia* that occurs further east.

**Type Locality:** California: Los Angeles County; South Pasadena, elevation 198 m.

**National Park Records:** **Kings Canyon NP:** Buena Vista Peak Trailhead 23 June 1989 (KD). **Sequoia NP:** Huckleberry Meadows 17 Aug 1960 (J. H. Gerdes); Buckeye Flat 17 May 1985 (KD); Potwisha 18 Apr 1986 (KD); Halstead Meadow and Wolverton 24 July 1987 (KD); Mineral King: White Chief Trail 23 July 1992 (KD); Lodgepole 2 Aug 1993 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley 2 Aug 1963 and 17 July 1967 (seen, KD); trail from Camp Curry to Glacier Point 9 July 1933 (JSG); Yosemite Creek S of Tioga Rd 9 July 1933 (JSG).

**Distribution: California:** Widely distributed in California, found in every county from the Lower Sonoran Life Zone to the Canadian Life Zones becoming scarcer in the northern Sierra Nevada. Freezes can kill off populations requiring recolonizations by migrating or straying adults. General records are not provided for *Junonia grisea* because of this species common distribution, at least in the 2/3 southern part of the range.

**Habitat:** This species is encountered in fields, foothill woodland, drier meadows in forest; canyons, openings in forests and flats. This butterfly occurs in city areas, ranches and pastures in Sierran Valleys.

**Flight:** Late February to early November in the southern Sierra Nevada.

**174. Edith's Checkerspot—*Euphydryas editha* (Boisduval, 1852).**

This is a difficult species to cover because populations in the Sierra Nevada are often intermediate between defined subspecies and identifications taxonomically are often unclear. There are also many different ideas about what named subspecies represent.

Six named subspecies occur in the Sierra Nevada and two or more segregates may exist.

**a. August Checkerspot—*Euphydryas editha augustina* (W. G. Wright, 1905).**

**Taxonomic notes:** In the past, this subspecies was considered to be limited to the San Bernardino Mountains of southern California, but in recent years the name has also been applied to the high elevation populations in the Piute Mountains in Kern County and the southern Sierra Nevada on the Kern Plateau in Tulare County (fide Michael Singer and personal collecting) as far north as Horseshoe Meadows near Mt. Whitney in Inyo County. This subspecies is a smaller sized, very reddish checkerspot.

**Type Locality:** San Bernardino Mountains; San Bernardino County, California.

**Records: California: Inyo County:** Horseshoe Meadow 9800' 17 July 1979 (JFE/AOS).

**Kern/Tulare Counties:** South end of Kern Plateau at Pine Flat, hilltopping on small hills 10 June 2006 (KD & RPM). **Kern County:** Cannell VABM (S end Kern Plateau) 9 June 1994 (seen, KD); Piute Mountains: Woolstaff Meadows 24 & 27 May 1934 (W. Burdick); Piute Peak 8 June 1974 & 6 July 1996 (both JB); 1.3 road miles from Piute Peak on several rocky outcrops along crest of Piutes 19 June 1981; 8 July 1982 & 4 July 2000 (all KD) ; Piute Mountain Lookout area 6 June 1977 (JB); very common 28 May 2001 (KD). **Tulare County:** Big Meadow on Kern Plateau 12 mi S of Sherman Pass Rd 15 June 1976 & 12 July 1978 (KD); Troy Meadows off Sherman Pass Rd, N Kennedy Meadows 5 & 14 July 1985 (JGP) & 8 June 2008 (KD/FH); Cannell Meadow 13 June 1972 (JB); Horse Meadow 25 June 1972 (JB).

**Distribution: California:** Horseshoe Meadows SW of Lone Pine in Inyo County south to the Piute Mountains at high elevation in Kern County. This subspecies is found in the Sierra Nevada only in Kern, Tulare and Inyo counties. It also occurs in the San Bernardino Mountains well south of the Sierra Nevada.

**Habitat:** Found on rocky outcrops on drier slopes in the Piute Mountains and in wet meadows near sagebrush or on small dry hills at the south end of the Kern Plateau at Pine Flat on the Kern/Tulare County line.

**Flight:** Early June-mid-July; extremes 24 May to 17 July.

**b. Cloud Born Checkerspot—*Euphydryas editha nubigena*** (Behr, 1863).

**Taxonomic notes:** This is a very small largely orange-red subspecies. The outer submarginal row of spots on the forewing is orange-red as are both submarginal rows on the hindwings, these latter rows grading with the pale-yellow median area (Austin & Murphy, 1998a).

**Sierra Nevada Type Locality:** At the headwaters of the Tuolumne River and beyond up to elevations of 11,500', from description: west end of Dana Plateau, 11,000-11,400', above Tioga Pass, Mono County, California.

**Records: California: Alpine County:** Ebbetts Pass (Austin & Murphy, 1998); Clark Fork Meadow 8700' 6 Sep 2011 (JD). **Inyo County:** Mono Pass 30 Aug 1967 (PAO). **Mono County:** SE above Saddlebag Lake 14 Aug 1970 & 23 July 1993 (KD); Glacier Canyon 10,500' NE slope of Mt. Dana 25 Aug 1983 (RLL); ridge SE side of Mt. Conness 10,200' 13 & 20 July 1976 and 26 July 1981 (KD); SE above Sonora Pass 19 July 1976; 7 & 9 July 1987 (KD). **Tuolumne County:** Leavitt Peak 11,000' 29 Aug 1958 (JSG).

**National Park Records: Kings Canyon NP: Fresno County:** Forrester Pass, no date, (Austin & Murphy, 1998); John Muir Trail (=Pacific Coast Trail) near Bullfrog Lake Trail Jct. 11,400' 2 July 2012 (EL). **Sequoia NP: Tulare County:** Alta Peak 11,204' "July 1943" (Tom Blevins), because of the elevation at this location, this record more likely represents *nubigena* rather than *aurilacus* or an unnamed segregate. Shepherd Pass Trail W head Tyndall Creek 11,000-12,200'

12 & 28 July 1966 (Scott Ellis & Steve Johnson); high elevation trail along Sierra Crest 12,300' 3 July 2012 (EL); Bighorn Plateau 11,400' 4 July 2012 (EL) and Guitar Lake 11,500' 5 July 2012 (EL). **Yosemite NP: Mariposa County:** Vogelsang Lake 3 Aug 1958 (JSG). **Tuolumne County:** Tioga Pass 23 July 1960 & 25 June 1961 (AOS); Gaylor Lakes Trail 19 July 1958 (JWT); Upper Gaylor Lake 24 July 1977 (Doug Mullins); Mt. Dana, W slope 20 July 1958 (JWT).

**Distribution: California:** Alpine, El Dorado, Fresno, Inyo, Mono, Nevada, Tulare and Tuolumne counties. The high elevation subspecies occurs northward to at least Ebbetts Pass, Alpine County southward to several locations on the Pacific Crest Trail in the Arctic-Alpine Life Zone in Sequoia NP in Tulare County.

**Habitat:** Austin & Murphy (1998) stated this subspecies occurs in dry alpine meadows and scree slopes where its oviposition hostplant *Castilleja nana* is abundant in the north part of its range, but to the south *nubigena* occurs in wet, snow fed alpine meadows where the larval hostplant is *Castilleja brewerii*. In my search for butterflies in the High Sierra east of Yosemite National Park, most of the time I find *nubigena* in rocky scree above timberline on steep rocky slopes.

**Flight:** Early July to late August, extremes range from 22 June to 6 Sep 2011.

**c. Lake Tahoe Checkerspot--*Euphydryas editha tahoensis* Austin & Murphy, 1998.**

**Taxonomic notes:** This subspecies seems closest to the smaller sized *nubigena* and *aurilacus*. It resembles subspecies *aurilacus*, but that subspecies is somewhat smaller and (especially females) more heavily marked with black (Austin & Murphy, 1998a).

**Sierra Nevada Type Locality:** Carson Range, Tahoe Meadows, 2590m, Washoe County, Nevada.

**Records: Nevada: Washoe County:** Carson Range, Tahoe Meadows 21 July 1986 & 30 June 1987 (GTA & Anna Austin); Hunter Creek & canyon W of Reno 25-26 Apr 2010 (Alex Grkovich); trail to Mt. Rose 31 July 2003 (Bret Boyd); Mt. Rose 3 July 2013 (Mary Maki); Tahoe Rim Trail, Relay Peak 10,300' 12 July 2012 (JD).

**Distribution: Nevada:** This subspecies occurs at relatively high elevations of the Carson Range overlooking Lake Tahoe in Carson City, Douglas and Washoe Counties in Nevada, essentially replacing the similar *E. editha nubigena*.

**Habitat:** This subspecies is more similar to *nubigena* in terms of ecology and occurs in more open areas above timberline, and oviposits on *Castilleja nana*, a dwarf alpine paintbrush used by *nubigena* also.

**Flight:** Late June to early August.

**d. Gunder's Checkerspot--*Euphydryas editha aurilacus*** Gunder, 1928.

**Taxonomic notes:** This subspecies seems larger than *nubigena* and tends to have more black in the wing patterns.

**Sierra Nevada Type Locality:** Near Gold Lake Camp, Gold Lake, Sierra County, California.

**Records:** **California:** **Amador County:** Salt Creek Rd near Silver Lake 12 June 2003 (KD). **El Dorado County:** Iron Mountain, 10 mi E Sly Park Reservoir 20 May 1976 (REW); North Creek 3 mi N Iron Mountain Rd 5000' 5 July 1975 (REW); 4-5 mi NE Hwy 88 on FR5, 7 June 1997 (KR). **Nevada County:** Juniper Lake 7200' 4 July 1931 (R. Wind). **Plumas County:** Mills Peak lookout, Plumas National Forest 2 July 2007 (SEABA-C); Round Lake Loop, Plumas National Forest, 24 June 2016 (SFSU-BSNC). **Sierra County:** Packer Saddle, Tahoe National Forest, 22 June 2016 (SFSU-BSNC). **Tulare County:** High elevation populations of this species from the areas of Sequoia and Kings Canyon National Parks in the upper Transition or Canadian Life Zones have been called *nubigena* or *aurilacus* and those from the higher elevations of the Sherman Pass Road have been called high elevation *rubicunda*, *augustinus* or *aurilacus*. To make things difficult in the Sherman Pass area, both paler *rubicunda* and *augustinus* actually do occur there, blending with the higher elevation *editha*. **Records** that may be *aurilacus* or apply to an unnamed segregate: Stony Creek near campground 10-12 June 1990 & 16 June 2006 (KD); ridges and granite domes W of Big Meadow 23 June 1989; 23 June 1997 & 30 June 2017 (KD); Bald Mountain Lookout 9400' 31 May 1986; 2 June 1997 & 9 June 2001 (KD); Sherman Peak 10,050' 19 June 2002 (KD); rocky outcrops or hilltops west side of Sherman Pass 6800'-9000' 3 & 9 July 2005 (KD).

**National Park Records:** **Sequoia NP:** **Tulare County:** Halstead Meadow 20 June 1981 (PN) and 16 July 1992 (KD); Mineral King: Timber Gap 22 July 1991 (KD) and White Chief Trail 23 July 1992 (KD); south end of Mineral King Valley, Farewell Gap Trail 8500' 19 July 1993 (KD).

**Distribution:** **California:** Amador, El Dorado, Nevada, Plumas, Sierra and Tulare (?) Counties. The Tulare County high elevation *editha* are found in close proximity to both *augustina* and an unnamed segregate, but have more extensive black in the pattern above. The identification of these as *aurilacus* is tentative.

**Habitat:** Edges of fir forests and females oviposit on *Castilleja miniata*, a tall paintbrush found in meadows and forest margins. On the Sherman Pass Road, what appears to be *aurilacus* seems to occur near a lower growing paintbrush and occurs up to 9400' on Bald Mountain. This butterfly seems to have contact with both *augustina* and an unnamed segregate and intermediates occur at Alder Creek 6800'.

**Flight:** 20 May to 28 July.

**e. Ruddy Checkerspot--*Euphydryas editha rubicunda*** (Hy. Edwards, 1881).

**Taxonomic notes:** This is a strongly reddish subspecies that can reach larger sizes in some populations. While some populations at lower elevations in the southern Sierra Nevada along the

Kern River in Tulare and Kern Counties occur in similar habitats as *rubicunda* (which does occur in northern Tulare County), those Kern River populations are less red-orange, have more white spots and tend to be smaller in size. Those are treated below as an unnamed segregate.

**Sierra Nevada Type Locality:** Sierra Nevada...from 2500 to 7000', Mariposa County, California.

**Records: California: Fresno County:** SR 168, 14 mi NW of Shaver Lake 27 May 2002 (KD); San Joaquin River Gorge, Squaw Leap Trail 16 Apr 2004 (KD); San Joaquin River crossing at Power House 11 Apr & 7 May 2004 (KD). **Kern County:** (tentative placement, I have not seen the specimens) Greenhorn Mountains: Alder Creek Camp 29 May 1978 (JB); W of Alder Creek Camp/Cedar Creek 8 May 1993 & 21 May 1995 (JGP). **Madera County:** Coarsegold 14 & 24 May 1991; 27 Apr 1992 (KD); SW of North Fork 10 Apr & 14 May 2004 (KD); Mountain View Peak above San Joaquin River 10 Apr 2004 (RES & KD). **Mariposa County:** El Portal 14 May 1961 (JWT); Briceburg and vicinity along Merced River 20 Apr 1984 (KD). **Placer County:** Weimar 2300' 30 May 1999 (EDB). **Tulare County:** Badger 12 May 1974 (JB); Mineral King Rd below boundary to Sequoia NP 8 May & 15 June 1993 and 20 May 2011 (KD). **Tuolumne County:** Indian Flat 30 May 1959 & 27 May 1960 (JWT).

**National Park Records: Sequoia NP: Tulare County:** 2 mi W of N Fork of Kaweah River 3000' 22 May 1973 (JHM); Buckeye Flat 18 Apr 86 & 13 Apr 1990 (KD).

**Distribution: California:** El Dorado, Fresno, Kern (?), Madera, Mariposa, Placer; Tulare and Tuolumne counties. This subspecies occurs on the west slope of the Sierra Nevada in the Upper Sonoran and lower Transition Life Zones. It has been reported in the Canadian Life Zone as well, but I suspect those represent other subspecies or segregates.

**Habitat:** Upper Sonoran and Transition Life Zones. Adults fly in foothill woodland and mixed coniferous forest, often along roadsides or streams. Males sometimes patrol dirt roads.

**Flight:** 10 March to 17 July. Most records are from April to mid-June.

**f. Mono Checkerspot—*Euphydryas editha monoensis* Gunder, 1928.**

**Taxonomic notes:** This subspecies is comparatively large with black, orange and pale-yellow wing markings. The submarginal pale yellow spots on the forewings are large and prominent and the median area is bright red-orange with some pale-yellow markings on anterior portions. The outer submarginal row of pale-yellow spots on the hindwings are broad. The proximal row of orange spots is yet broader, with the orange spots often grading into the median pale-yellow area (Austin & Murphy, 1998a).

**Sierra Nevada Type Locality:** Rush Creek (below Farmington's Ranch), near Mono Lake, Mono County, California.

**Records: California: Alpine County:** 4 mi S Markleeville 27 Aug 1983 (JRM); SW above Curtis Lake 5700', 30 Apr 1984 (AOS); Indian Valley Reservoir 27 Mar 1988 (REW). **Inyo County:** South Fork of Bishop Creek 8300' 7-8 July 1979 & 23 June 1986 (KD); Big Pine Creek Canyon 7500', 30 Apr 2000

(KD). **Mono County:** Mono Lake near Lee Vining 13 July 1960 & 26-27 June 1961 (AOS); 1 mi E Walker 27 May 1973 (JRM); Slinkard Creek 27 Aug 1983 (JRM); Mill Creek Camp 6250' 2 May 1984 (AOS/REW) and 15 June 1984 (PAO); Mill Creek Canyon Rd SW of Walker 10 May 1997 (JGP); Little Walker River Rd S of US 395, 27 May 2001 (JGP). **Nevada: Douglas County:** Clear Creek Canyon 18 May 1986 (JD), placement to subspecies is tentative.

**Distribution: California:** Sierra Nevada records include the east slope of the Sierra Nevada in Alpine, Inyo and Mono Counties. The butterfly also occurs in Nevada along the western edges of the Great Basin. Some colonies have disappeared (Mono Lake) for reasons unclear, perhaps drought, plant succession or habitat change. The butterfly is still seen, sometimes commonly but because of conservation concerns, the observers wished not to publish those observations. Another distribution record issue has to do with placing to subspecies. Some believe records from Bishop Creek and Big Pine Canyon represent *aurilacus*, not *monoensis*. This subspecies occurs from Big Pine Canyon in Inyo County north to near Reno, Washoe County, Nevada. Nevada: There are records of this species from Carson City, Douglas and Washoe Counties. Some of those records for Carson City and Douglas Counties may represent subspecies *tahoensis*.

**Habitat:** Sagebrush flats in wet meadows and pine forests or along small streams on the east side of the Sierra Nevada.

**Flight:** 27 March to 27 August. Normal flights are late April to early July.

**g. Edith's Checkerspot---*Euphydryas editha*** -Walker Pass segregate.

**Taxonomic Note:** This segregate was formerly known as the nominotypical *Euphydryas editha editha* (a result of the actual type locality being obscure in the original description), but then it became known that the actual nominotypical subspecies was more likely from northern California (based on Lorquin's travels and syntypes which match Boisduval's description) as *Euphydryas editha bayensis* with a type locality designated restricted to Twin Peaks, San Francisco, San Francisco County, California (Emmel, Emmel & Mattoon, 1998a). This makes the name *bayensis* a junior synonym of nominotypical *Euphydryas editha editha* and it leaves the Walker Pass population without a name.

The Walker Pass population tends to be a larger sized segregate with bold red markings on yellow that has not fared well with long term drought at Walker Pass and vicinity. In fact, there have been no recent records over the past ten years or so. The populations believed to be the same butterfly at high elevations in the Piute Mountains still exist but studies by Michael Singer (pers. comm..) and others suggests that those are more similar to *augustina*.

How the Walker Pass segregate fits with Kern Canyon, low elevation Piute Mountain and the upper Kern River populations is unknown and would be an interesting study.

**Records: California:** Walker Pass 3 May 1975 (JB); 10 & 12 May 1976 (KD) and 29 Apr 1993 (KD); Walker Pass Trailhead 19 Apr 2003 and hilltop 2-3 mi E of the Pass on desert hilltop 9 May 1993 (KD); Bird Spring Pass microwave hill 5300' 13 May 2000 (KD).

**Distribution: California.** This segregate was limited to the Walker Pass area south to Bird Spring Pass and hills running about 10 miles west of Walker Pass in Kern County.

**Habitat:** Foothill woodland and elevated hills on the western edge of the Mojave Desert east of Walker Pass and on hills west of the Pass.

**Flight:** Late April-May.

**h. Edith's Checkerspot—*Euphydryas editha***-Southern Sierra Nevada, lower elevation segregate.

**Taxonomic note:** This segregate tends to have less red and much more whitish spotting than *rubicunda*. This may be an example of how butterfly species get paler in coloration as they are distributed from north (darker) to south (Hovanitz, 1978 (79) with those populations in the south paler.

**Records: California: Kern County:** Piute Mountains: 2 mi S of Bodfish 28 Apr 1972 (JB); Kern Canyon 4.9 mi W of Miracle Hot Springs (now Hobo Camp) 3 June 1971 & Miracle Hot Springs 19 May 1976 (both JB). The upper Kern River and Sherman Pass populations disappeared for several years after a major forest fire in 2002, but have reappeared after several years of absence. **Tulare County:** The populations along the upper Kern River may not be biologically the same as those in Kern County. Some feel these are a more pallid population of subspecies *rubicunda*. 2-4 mi S of Johnsondale 6 June 1983 & 12 June 1999 (KD); Dry Creek Canyon 4300' 14 Apr 1987 & 7 May 2010 (KD); Kern River S of Limestone Camp 7 & 14 May 2010 (KD); Kern River Trail off Sierra Hwy at bridge crossing S of Johnsondale 21 May 2010 (KD & RPM).

**Distribution: California:** Kern and Tulare counties in the Kern River drainage; Walker and Bird Spring Passes are SE of the Kern River. These checkerspots have gone into steep decline following several wildfires and many years of drought.

**Habitat:** Upper Sonoran Life and Transition Life Zones. These checkerspots favor riparian canyons and small streams, wet grassy areas and canyons; foothill woodland in the Kern River drainage.

**Flight:** Late March to early June.

**175. Chalcedon Checkerspot—*Euphydryas chalcedona*** (Doubleday, 1847).

This is a difficult species complex with any treatment controversial. Do we accept *sinecat* as a subspecies or not? Do we accept *irelandi* as a subspecies distinct from *sierra*? Pelham's



catalogue places *sinecat* Scott 2008 as a synonym of *macglashanii* and *irelandi* as a synonym of *sierra*. It appears that not many have accepted *sinecat* as a valid subspecies in which case the American River drainage *chalcedona* could be called near *macglashanii* as it was previously and those southward on the west slope of the Sierra Nevada would be closer to nominotypical *chalcedona*. The larval stages “stripes” were true for *sinecat* and *macglashanii* and many know *chalcedona* is extremely variable within any subspecies.

**a. Chalcedon Checkerspot—*Euphydryas chalcedona* near *chalcedona*** (Doubleday, (1847).

**Taxonomic note:** This is a subspecies which tends to be black and yellow with some red with a checkerboard spot pattern, often with reduced red along the wing margins.

**Type Locality:** San Francisco, San Francisco County, California.

**Records: California: Kern County:** Kernville 30 Apr 1983 & 6 June 1999 (KD); Greenhorn Mountains: Old State Rd. 3000’-4500’ 9 May 1981 (KD); Richbar in Kern Canyon 23 Apr 1972 (KD). **Fresno County:** San Joaquin River Gorge 16 Apr 2004 & 11 May 2008 (KD); SR 168, 14 mi NW Shaver Lake 14 May 2011 & 26 May 2016 (KD); hillsides above San Joaquin River Gorge 11 May 2008 (KD); below Pine Flat Dam 14 May 2011 (KD). **Madera County:** Coarsegold 23 May & 8 June 1992 (KD); Oakhurst 8 June 1992 (KD); ridge NE of Auberry Rd, San Joaquin River Crossing 10 Apr 2004 (KD). **Mariposa County:** Jerseydale 9 Jun 1962 (AOS); El Portal 14 May 1961 (JWT); Briceburg along Merced River 20 Apr 1984 (KD). **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 20 June 2005, 19 June 2006, 29 June 2019 (SFSU-BSNC); Smithneck Road, Tahoe National Forest 27 June 2017 (SFSU – BSNC). **Tulare County:** Mineral King Rd milepost 3-4, 7 & 8 May 2002 (KD). There are records from all west slope Sierra Nevada Counties in California but Kern County shows some tendencies towards *macglashanii* or what Scott (2008a) called *sinecat* to the north.

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 28 Apr 1959 (RC Burns); Elk Creek along middle fork trail 26 May 1979 (PN); Buckeye Flat 17 May 1985 and 13 Apr 1990 (KD); Mineral King Road above Park entrance, 9 June 1988 & 8 May 1993 (KD); Potwisha 17 May 1985 & 18 Apr 1986 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley, trail from Camp Curry to Glacier Point 9 July 1933 (JSG); Camp Curry 31 May 1964 (KD).

**Distribution: California:** This is difficult to specify with names issues on the west slope of the Sierra Nevada, counties that have had nominotypical *chalcedona* applied to their populations include Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Tulare, Tuolumne and Yuba Counties. The *chalcedona* phenotype turns up in Inyo County in Nine Mile Canyon.

**Habitat:** This widespread checkerspot occurs in foothill woodland, riparian canyons, mixed coniferous forest openings in Upper Sonoran and lower Transition Life Zones.

**Flight:** April into July.

**b. Sierra Checkerspot**---*Euphydryas chalcedona sierra* (W. G. Wright, 1905).

**Taxonomic notes:** Choosing what to do with *irelandi* is problematic. Austin & Murphy (1998b) did not recognize *irelandi*. Emmel, Emmel & Mattoon (1998g) did. I have collections of both which in series show differences in series, but not with every individual. So here I will follow Pelham's catalogue, treat these as one subspecies but still handle Tulare County populations as *irelandi* under *sierra*. The reader can decide what he or she believes is the best way to handle this controversy. *Irelandi* appears a more extensive blotchy red with more pink. Subspecies *sierra* tends to be more evenly spotted.

**Sierra Nevada Type Locality:** Central California Mountains, Sierra Nevada.

**Records: California: Alpine County:** Hwy 4 at Ebbetts Pass 16 July 1990 (Howard Grisham collection). **Amador County:** one mi E of Silver Lake on granite domes 11 July 1986 (KD). **El Dorado County:** Bishop Pass 23 July 1933 (JWT); W shore Loon Lake 18 June 1972 (MS). **Fresno County:** Kaiser Creek 6400' 11 & 28 July 1930, one male taken at Upper Little Line Creek resembles *E. colon* (LMI). **Mariposa County:** Eagle Peak (probably the Eagle Peak nearest Yosemite Falls) 1 July 1933 (JSG). **Tuolumne County:** Near Dardanelles (SR 108) 27 July 1963 (misidentified as *E. editha nubigena*, Keith Brown Jr., 1965); Niagara Creek area off Eagle Meadow Rd S of SR 108, 8 July 1987; 13 July 1994 and 7-8 July 2009 (KD); Donnell Vista off SR 108, 7-8 July 2009 (KD).

**National Park Records: Yosemite NP: Mariposa County:** Research Reserve Trail S of Tioga Rd along Yosemite Creek 14 July 1933 (JSG). **Tuolumne County:** Return Creek 11 July 1931 (JWT).

**Ireland's Checkerspot**—*Euphydryas chalcedona irelandi* Gunder, 1929.

**Sierra Nevada Type Locality:** Trail near Alta Peak, Sequoia Nat'l Park, Tulare County, California.

**Tulare County:** NF Kaweah River and Woodward Creeks 6800' 25 July 1975 (JRM); hillside above confluence of Stony & Woodward Creeks 29 June 1997 & 16 July 1992 (KD); Granite domes, 3 mi E of Generals Hwy, W of Big Meadow near Kings Canyon NP 23 June 87; 23 June 97 and 28 June 2003 (all KD), three individuals from this locality appear to be *E. colon* phenotypes (2) 23 June 97; (1) 28 June 2003; 10 mi E of Wilsonia 30 June 1979 (JHM); Boulder Creek E of Big Meadow near KCNP 30 June 2017 (KD).

**National Park Records: Sequoia NP: Tulare County:** Alta Peak Trail 18 July 1960 (J. H. Gerdes); Mineral King Basin or Valley 1 July 1979 (JHM); Timber Gap Trail N end of Mineral King 9000' 22 July 1991 (KD); White Chief Trail 9000' above Mineral King Valley 23 July 1992 (KD), the latter record is south for *irelandi* or *sierra* (if they are the same entity).

**Distribution: California:** Alpine, Calaveras, El Dorado, Fresno, Inyo, Mariposa, Plumas and Tuolumne counties for *sierra*; Fresno and Tulare Counties for *irelandi*.

**Habitat:** Canadian Life Zone on ridges and in areas with granite domes or patrolling roadsides on canyon walls overlooking streams.

**Flight:** 25 June to 22 August for *sierra*; 3 June to 25 July for *irelandi*. The main flight for both seems to be late June and July.

**c. Olancha Checkerspot—*Euphydryas chalcedona olancha*** (W. G. Wright, 1905).

**Taxonomic notes:** This subspecies is rather similar in appearance to *macglashanii*, but the spotting can be larger and uneven in size and the amount of red along the wing margins above tends to be reduced. Austin & Murphy (1998b) covered this subspecies in their paper on members of the *Euphydryas chalcedona* complex occurring on the east slope of the Sierra Nevada and adjoining Great Basin and well-illustrated *olancha*. The west slope and east slope *olancha* differ and some might feel the name *macglashanii* better applies to many west slope populations in Tulare and Kern Counties. Applying names to populations or subspecies can be problematical and subjective at times.

**Sierra Nevada Type Locality:** Sierra Nevada, Olancha Peak, Tulare/Inyo Counties, California.

**Records: California: Inyo County:** Big Pine Creek 21 Apr 2012 (JFE); Nine Mile Canyon 1.5 mi. E below Tulare Co. line 18 May 2003 (KD), a very blackish individual; up grade to Whitney Portal 18 & 24 June 2006 (KD), many were very reddish in color; SF Bishop Creek 8300' 7-8 July 1979 & 23 June 1986 (KD), 18 July 2019 (PO-EBO); Pine Creek Canyon NW of Bishop 26 May 2009 (KD). **Kern County:** 0.7 mi. S of Sageland 1 May 1981 (stray, KD); Chimney Peak Rd S of Lamont Peak 22 May 1982 & 25 June 1985 (KD); Canebrake 25 Apr 2004 (KD). **Mono County:** Tom's Place 22 June 1986 (KD); Owens Gorge Rd E of Tom's Place 10 July 1997 & 27 June 1999 (JGP); common Swall Meadow 9 & 20 May 1997 (KD) & 30 May 1999 (KD & Jack Levy). **Tulare County:** Pine Mountain area N of Kennedy Meadows 3 July 1978 (KD); canyon off Chimney Peak Rd just W of Lamont Meadows 22 May & 25 June 1985 (KD); upper Kern River E of Ant Canyon 19 & 21 June 2015 (KD); Bald Mountain & vicinity 28 May & 18 June 2007 (KD); Sherman Pass Rd 3000'-6800' 15 June 1976; 20 June 1980 and 18 June 1983 (all KD).

**Distribution: California:** Inyo, Kern, Mono and Tulare counties. The range for *olancha* is from Mono County in the north southward to the Sageland area and Havilah (Kern County) to the south.

**Habitat:** These butterflies favor foothill or pinyon-pine woodland in canyons, along streams, dry ravines, *Yerba santa* along roads and openings in mixed coniferous forests. In Tulare County, *olancha* occurs up to about 9000' and occurs in Upper Sonoran, Transition and Canadian Life Zones.

**d. MacGlashan's Checkerspot**—*Euphydryas chalcedona macglashanii* (Rivers, 1888).

**Taxonomic notes:** This subspecies is similar to *olancha* but the outer wing margins are more broadly orange-red, the rows of pale spots are deeper yellow and narrower, and the postmedian row of spots on the forewing is usually orange below the costa. See discussion and color plates by Austin & Murphy, 1998b.

**Sierra Nevada Type Locality:** Neighborhood of Truckee, Nevada County, California.

**Records: California:** El Dorado County: Pine Hill 26 May 1975 (James Scott). **Placer County:** American River SE of Auburn & Forest Hill 13 June 2003 (KD). These records may or may not represent *macglashanii*, depending on the viewpoint of the worker.

**Nevada: Douglas County:** Carson Range, Daggett Creek ova (D. Murphy). **Washoe County:** Behind Davis Creek Park 22 May 1981 (GTA).

**Distribution: California:** There are records from Alpine, El Dorado, Mono (depending on how *macglashani* is defined), Nevada, Placer, Plumas and Sierra Counties. **Nevada:** All counties. This subspecies occurs on the east slope of the Sierra Nevada from at least Alpine County and adjacent Douglas County, Nevada to just north of Reno, Nevada and Sierra Valley, Sierra County, California. There are also issues on the west slope of the Sierra Nevada as to whether the names *macglashanii*, *sinecat* or nominotypical *chalcedona* should be applied.

**Habitat:** This subspecies occurs on the eastern side of the Sierra Nevada in Great Basin sagebrush, canyons and along streams. On the west slope a similar phenotype occurs in foothill woodland and openings in mixed coniferous forest.

**Flight:** Mid- April to mid-July.

**176. Anicia Checkerspot**—*Euphydryas anicia* (Doubleday. 1847)

There are two subspecies in the Sierra Nevada. The origin and status of *variicolor* may show hybridization between *chalcedona* and *anicia*.

**a. Wheeler's Checkerspot**—*Euphydryas anicia wheeleri* (Hy. Edwards, 1881).

**Type Locality:** Mouth of Meadow Canyon, Toquima Range, Nye County, Nevada.

**Records: California: Mono County:** Log Cabin Mine Rd. 8800-9600', W of Lee Vining 26 June 1992 (Derham Giuliani); scenic turnout upgrade on US 395, 15 May 1988 (RPM); Mono Lake 16 June 1917 (JAC) & 13 June 1924 (J. Gunder); Green Creek S of Bridgeport 17 July 1982 (JRM); ridge E of Green Canyon 18 June 2004 & 21 June 2006 (KD, singletons); below south side Sonora Pass late May (JRM); ridge at 11,000' south side Sonora Pass 12 July 1994 & 27 July 2002 (KD) ( these could be *wheeleri* or may actually be a color form of *variicolor*). The Sonora Pass records are included here because of debate over their status.

**Distribution: California:** This is primarily a butterfly of the Great Basin Mountain ranges which can be quite common in the White Mountains in Bristlecone Pines -sagebrush habitat. This checkerspot does appear to show past contact with populations of *E. chalcedona olancha* found on Olancha Peak and the Whitney Portal areas of Inyo County as evidenced by many “*olancha*” individuals showing unusual amounts of an orange-red coloration on the upperside. This butterfly crosses the Owens Valley barrier today by inhabiting the hills at the north end of the Owens Valley which both *olancha* and *wheeleri* inhabit. There are Sierra Nevada records for only Mono County unless the more orange individuals found at Sonora Pass are actually *wheeleri* rather than *variicolor*, if so, then we could add Alpine and Tuolumne Counties to *wheeleri*'s range.

**Habitat:** Generally high elevation hills with Great Basin vegetation and the paintbrush host. It also occupies the east slope of the Sierra Nevada and adjacent hills between the Sierra Nevada and US 395 in the Tioga Pass and Bridgeport areas. These butterflies occur on hilltops or patrol sagebrush slopes, roads or flats with flowers that draw adults going to nectar.

**Flight:** Records seem to show a flight period of mid-May to mid-July in the Sierra Nevada, longer into August if Sonora Pass orange-red individuals really are *wheeleri*.

**b. Variable Colored Anicia Checkerspot—*Euphydryas anicia variicolor*** Baughmann & Murphy, 1998).

**Taxonomic notes:** This checkerspot was named as a *chalcedona* subspecies because the authors considered *chalcedona*, *anicia* and *colon* to be a single species. This checkerspot has been considered a *chalcedona* blend or hybrid zone between *E. chalcedona* and *chalcedona olancha*, *sierra* and *E. anicia wheeleri* (Howe, 1975). It is also believed that many of the reddish forms may actually be *Euphydryas anicia wheeleri*. The male genitalia are reportedly of the *anicia* type.

**Sierra Nevada Type Locality:** Ridge running south of Sonora Pass in the Sierra Nevada, 9600'.

**Records: California: Mono County:** Ridge SE of Sonora Pass 11,000'7 & 9 July 1987; 12 July 1994 (KD) and 27 July 2002 (KD). ridge S of Sonora Pass 15 July 1978 & 23 June 1979 (Deane Bowers) and S of Sonora Pass 22 July 1978; 23 June & 14 July 1979 (Deane Bowers); several on ridge 12,000' on trail to Leavitt Peak 27 July 2002 (KD). **Tuolumne County:** Leavitt Peak 11,000' 29 Aug 1967 (PAO).

**Distribution: California:** The Sonora Pass area in Alpine, Mono and Tuolumne Counties.

**Habitat:** Rocky outcrops and slopes above timberline in the Arctic-Alpine Life Zone.

**Flight:** 23 June to 29 August. Normal flight: July-August. Yearly flights vary with temperature and snowmelt.

**177. Monache Arachne Checkerspot**—*Poladryas arachne monache* (J. A. Comstock, 1918). In hand, this checkerspot is uniquely different from other checkerspots in the Sierra Nevada, but in flight, it can be difficult to separate from the Northern Checkerspot (*Chlosyne palla australomontana*).

**Taxonomic note:** This subspecies is deeper and uniform orange in color. The dorsum of females is the most lightly marked with black of all *P. arachne* populations known (Austin, 1998d). The original description was reprinted in Comstock's 1927 book on California Butterflies.

**Sierra Nevada Type Locality:** 8500' to 9000' in the Monache Meadows of Tulare County, California.

**Records: California: Tulare County:** Monache Meadows 20 June 1936 & 6 July 1935 (LACM in Howe, 1975); Pine Mountain area N of Kennedy Meadows 3 July 1978 and 25 June 1982 (KD); Spring (Pine Creek) 7 mi S Kennedy Meadows 25 June & 10 July 1982; 30 June 1988 and 20 June 1992 (KD); hills and ridges above road summit about 10 mi S Kennedy Meadows 25 June 1982; 8 June 1985; common 10 July 1982 (KD & AR); seen with one photo, Pine Mtn. area, hill S of Fish Crk. Camp N of Kennedy Meadows, 28 June 2008 (KD & NABA group); one individual 1 June 2013 (KD) and 21 June 2015 (KD & Jonathan Pelham). The region where this checkerspot lives suffered major wildfires in the 1990's and in 2002 and long-term drought. Neither the penstemon host plant nor the butterfly are now commonly seen, but was growing back in 2019 in localities where it had been absent for several years.

**Distribution: California:** This species occurs in the Sierra Nevada only in Tulare County in the Kennedy Meadows region southern Sierra Nevada, but likely occurs along ridges along the Inyo County line. This checkerspot has been found in Monache Meadows south to a hilltop near the top of Nine Mile Canyon. Gordon Pratt reports a non-Sierran population of this species differing from *monache* occurs on restricted military land in the Coso Mountains in Inyo County.

**Habitat:** This butterfly flies on hillsides, hilltops and ridges and along small streams where the Penstemon host plant grows.

**Flight:** 1 June to 7 August. The main flight is usually mid-June to mid-July.

**178. Leanira Checkerspot**—*Chlosyne leanira* (Felder & Felder, 1860).

**Taxonomic notes:** This group formerly was placed in the genus *Thessalia*, currently a subgenus in the Pelham Catalogue. Four subspecies are known in the Sierra Nevada. **a. Leanira Checkerspot**—*Chlosyne leanira leanira* (Felder & Felder, 1860).

**Taxonomic notes:** The name *daviesi* (Wind, 1947) with relatively more red and yellow on the forewings was considered a synonym of nominotypical *leanira* in the revision done by Austin & Smith, 1998.

**Sierra Nevada Type Locality:** Hwy. 70 at Chambers Creek, North Fork Feather River Canyon, 1850', Plumas County, California.

**Records: California: Madera County:** 4.6 mi N Hwy 41 Sky Ranch Rd N Oakhurst 31 May 2001 (Jack Levy). **Mariposa County:** Darrah 30 May 1957 (JWT); Jerseydale 22 June 1961 (AOS); El Portal 14 May 1961 (JWT) & 4 May 1968 (KCH & Jan Hughes; JL); Indian Flat 30 May 1959 & 13 May to 10 June 1961 (JWT) **Sierra County:** Canyon Creek trail, N Yuba River, W Downieville, Tahoe National Forest 19 June 2006, 29 June 2019 (SFSU-BSNC). **Tulare County:** E Fork of Kaweah River along road to Mineral King 6 May 1979 (JHM). **Plumas County:** Caribou Rd. off SR 70 above Queen Lily Campground 18 July 1989 (GTA).

**National Park Records: Kings Canyon NP: Fresno or Tulare County:** no locality given 15 June 1955 (Peter Jump). **Sequoia NP: Tulare County:** Crystal Cave “July 1943” (Tom Blevins) **Yosemite NP: Mariposa County:** Tamarack Flat 3 Aug 1954 (JWT); Trail from Camp Curry to Glacier Point 9 July 1933 (JSG).

**Distribution: California:** Central Tulare County (lower Mineral King Rd) northward to the north end of the Sierra Nevada northward. Sierra Nevada records exist for Alpine, Amador, Calaveras, El Dorado, Fresno, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties.

**Habitat:** This checkerspot occurs in Upper Sonoran and lower Transition Life Zones in foothill woodland or mixed coniferous forest.

**Flight:** Most records in the Sierra Nevada are in May and June.

**b. Wright’s Checkerspot—*Chlosyne leanira wrightii*** (W. H. Edwards, 1886).

**Taxonomic notes:** This subspecies has more extensive orange and red than the more blackish nominotypical *leanira*. In the southern Sierra Nevada in Kern and Tulare Counties, there is a complex blend zone between *leanira*, *wrightii* and *alma*.

**Type Locality:** San Bernardino, San Bernardino County, California.

**Records: California: Kern County:** Piute Mountains 2 mi S of Bodfish 21 May 1979 & 29 May 1995 (KD); Erskine Creek Canyon 20-30 May 2001(KD). Greenhorn Mountains: Old State Road 3500’-4000’, 24 Apr & 9 May 1981 (KD); Sawmill Rd 3-4 mi W SR 155, 28 Apr 2002 (KD) & 22 May 2002 (PAO & KD); base of E slope of Greenhorns just S of Kernville 24 Apr 1981 & 23 May 1999 (KD); Kern Canyon, Miracle Hot Springs (=Hobo Camp 30 May 1976 (KD); a single stray at Butterbrecht Peak 21 May 1988 (KD). **Tulare County:** 2-4 mi S of Johnsondale 6 & 18 June 1983; 17 May 1984 & 21 May 1990 (all KD); Dry Creek Canyon 4300’ off Sherman Pass Rd E of Kern River; hilltop & ridge above helipad and Dry Creek Canyon 29 May 2012 (KD); Limestone Camp E side Kern River 21 Apr 1997 and many other dates (KD); Goldledge Creek E of Campground 9 May 1981 & 22 Mar 1997 (KD).

**Distribution: California:** Sierra Nevada west slope in Kern and Tulare counties from Johnsondale (Tulare County) in the north, south to Havilah and a stray on Butterbrecht Peak (Kern County). Blend zones with *alma* east of Walker Pass have not been found.

**Habitat:** This checkerspot occurs in localized populations in foothill woodland or mixed juniper/oak woodland areas with pines where paintbrush grows.

**Flight:** Normally late April to mid-June depending on temperature and rainfall.

**c. Alma Checkerspot—*Chlosyne leanira alma*** (Strecker, (1878).

**Taxonomic notes:** This is a predominately orange subspecies in which the black pattern is much reduced or missing altogether. The name *cerrita* was used for a mixed population of orange and black (now *alma*) and yellow, black and orange populations (*wrightii*). The name *cerrita* is now considered a form of *wrightii*.

**Type Locality:** Northwestern Mohave County, Arizona.

**Records: California: Inyo County:** Olancho Peak 5200' 7 May 1990 (JFE); road to Bishop Creek at old toll campground on dry ridges 8 May 1997 (KD); Big Pine Canyon 30 Apr 2000 (KD). **Mono County:** Hilltops overlooking Rock Creek Gorge 17 May 1993; 9 & 20 May 1997 (KD); US 395 at scenic turnout on Sherwin Grade 15 May 1988 (RPM) & 17 May 1993 (KD). **Kern County:** E of Walker Pass 3 May 1974 (JB); 10 May 76; 29 Apr & 9 May 1993 (all KD, this colony may now be extirpated); E side of Sierra Nevada near Homestead 9 Apr 1993 (JGP). **Tulare County:** Kennedy Meadows Camp, SF Kern River 19 June 1976 (Doug Mullins) & 26 May 2001 (KD).

**Distribution: California:** This east slope Sierran butterfly has been hard hit by many years of drought and has disappeared from all Kern County localities. It has been found recently in numbers in Big Pine Canyon and near the old toll house off the road to Bishop Creek in Inyo County. **Habitat:** East slope of the Sierra Nevada desert hills on which males hilltop in sagebrush or Joshua Tree woodlands with the paintbrush host. These localities are usually in the Upper Sonoran Life Zone.

**Flight:** Late March to early June. The main flight is April and May depending on weather factors.

**d. Great Basin Leanira Checkerspot—*Chlosyne leanira basinensis*** (Austin & M. Smith, 1998).

**Taxonomic notes:** This subspecies is most similar to subspecies *alma*. The dorsal ground color of *basinensis* is a deeper orange and there is considerably more extensive black along veins, bordering submarginal spots, medially and basally. The ventral hindwing of *basinensis* has a yellowish aspect compared with the flat white color of *alma*.

**Type Locality:** Nevada: Lyon County; Sweetwater Mountains, Nevada SR 338, 1.0 miles northeast of the California State line, 1825m.



**Records: California: Mono County:** Burham Flat Rd and confluence of Rock Creek and West Walker River in May to late June (JRM); Rock Creek S of Walker above US 395, 3 mi S of Walker 26 May 1979 & 12 June 1980 (JRM); Walker 27 May 1973 (JRM). **Nevada: Carson City:** Carson City, Brunswick Canyon 27 May 1980 (GTA). **Douglas County:** Carson Valley, US 395, 2.1 mi S Carson City line 15 May 1986 (GTA).

**Distribution: California:** This east slope Sierra Nevada checkerspot is limited to Alpine and Mono counties in the Sierra Nevada. **Nevada:** Carson City, Douglas and Washoe counties. It is unclear how the populations in Mono County area are doing which may indicate those populations are in decline, or are simply just not being sought or observed.

**Habitat:** Drier hills where the hostplant paintbrush grows.

**Flight:** Late May to late June.

**179. Hoffmann's Checkerspot—*Chlosyne hoffmanni hoffmanni*** (Behr, 1863).

**Sierra Nevada Type Locality:** Gold Lake, Sierra County, California.

**Records: California: Alpine County:** Carson Pass 8600' 29 Jun 1987 (very rare at this locality, Bill Miller); Clark Fork Meadow 8700' 6 Sep 2011 (JD). **Amador County:** Silver Lake 19 July 1947 (Tom Davies). **El Dorado County:** Echo Summit 23 July 1935 (JWT); 2 mi. E of Myers, Hwy 50, 7 July 2019 (PAO-EBO). **Fresno County:** Huntington Lake (Tom Davies, in Howe, 1975) and 4 July 2002 (RE); Upper Little Line Creek to Kaiser Pass 8500-9000 28 June to 30 July 1930' (LMI). **Madera County:** Fresno Dome area 6700' 1 & 2 July 1996; 5 & 11 July 1999 (KD); Minaret Summit near Mammoth Lakes 20-21 July 1989; 12 July 1990 and 21 July 1991 (Al & Tom Rubbert). **Mono County:** Little Walker River Canyon below Anna Lake 16 July 1974 & 3 Aug 1975 (JRM). **Placer County:** 2 mi S Soda Springs, 26 Aug 1976 (P. M. Tuskes). **Plumas County:** Mills Peak, Plumas National Forest 3 July 2007 (SEABA-C); Round Lake loop, Plumas National Forest 10 July 2012 (SFSU – BSNC). **Sierra County:** Forest road 54, S of Bassetts, Tahoe National Forest 5 July 2007 (SEABA-C); Packer Saddle, Tahoe National Forest, 22 June 2016 (SFSU-BSNC). **Tuolumne County:** Niagara Creek S. of SR 108, 15 July 1978 (MS); 8 July 1987 & 13 July 1994 (KD); Mill Creek S Hwy. 108, 13 July 1994 (KD); 1 mi W of Clark Fork turnoff (SR 108) 4 July 2002 (JGP). **Nevada: Washoe County:** Radar Peak Rd., Tahoe Rim Trail 9300' 7 July 2014 (JD).

**National Park Records: Kings Canyon NP: Tulare County:** "Grant's Park" 18 July 1929 (specimen in SBMNH). **Sequoia NP:** Alta Peak "July 1943" (Tom Blevins); Crescent Meadows 8 Aug 1944 (NC). **Yosemite NP: Mariposa County:** Research Reserve, Yosemite Creek area 14 July 1933 (JSG). **Tuolumne County:** Benson Lake 24 July 1932 (Edmund Godwin); White Wolf 10 July 1956 (JSG).

**Distribution: California:** Alpine, Amador, Calaveras, El Dorado, Fresno, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties in the Sierra Nevada. Old

records from Crescent Meadows in Sequoia National Park are probably the southmost record for this species. **Nevada:** Carson City and Washoe counties.

**Habitat:** Meadows and forest openings in the Canadian Life Zone. This butterfly tends to be highly localized and scarce but is commonly seen in early July in the Niagara Creek/Eagle Meadow Rd. area on the south side of SR 108 (the Sonora Pass Road)..

**Flight:** Late May 2000 to early August. Most records are in the first three weeks of July.

**180. Whitney's Checkerspot—*Chlosyne whitneyi* (Behr, 1863).**

**Taxonomic notes:** This butterfly was formerly called *Chlosyne* (or *Charidryas*) *damoetas malcolmi*. This butterfly has also been called the Rockslide Checkerspot which most believe best applies to *Chlosyne damoetas* which occurs in the Rocky Mountains. See comments under *C. palla altasierra*.

**Sierra Nevada Type Locality:** The headwaters of the Tuolumne River, neotype from north slope of Mt. Dana, at lower end of Glacier Canyon, 11,000', Mono County, California. Malcolmi TL: Near Mammoth Camp, Mono County, California.

**Records: California: Alpine County:** Sonora Peak 11,000' 6 Aug 1972 (JRM). **Fresno County:** Duck Lake 6 mi SE of Crystal Crag 3 Aug 1961 (RES). **Madera/Tuolumne County:** Mt. Lyell 6 Aug 1933 (JSG). **Mono County:** N slope of Mt. Dana at lower end of Glacier Canyon 11,000', 8 Aug 1969 (JFE/AOS); rocky north facing slopes SE of Sonora Pass 10,500'-11,000' 19 July 1976; 7 & 9 July 1987; 12 July 1994 (KD); E above Saddlebag Lake at 10,500'-11,000' 3 Aug 1975 & 25 July 1981 (KD); trail SW side Saddlebag Lake 18 Aug 2011 (KD); ridge SE of Mt. Conness at about 10,200', 13 July 1976 & 26 July 1981 (KD); base of Red Mountain W below Saddlebag Lake in Hudsonian Zone forest at base of talus slide 24 July 1993 & 30 July 2019 (KD); Ellery Lake at base of north facing slope of Dana Plateau 22 July 1993 (KD); Barney Lake near Matterhorn Crest 25 Aug 1991 (JFE); Mt. Excelsior 12,000' 30 Aug 2019 (Robert Gorman). **Tulare County:** Lower Vidette Lake 27 July 1991 (JFE & Tom Emmel). **Tuolumne County:** Meadows 2 mi W of Sonora Pass 9100' 3 July 1959 (RES/POA and Nora Opler).

**National Park Records: Sequoia NP: Tulare County:** Mineral King, White Chief Trail 9600'-9800' 23 July 1992 (KD). **Yosemite NP: Madera/Tuolumne County:** Mt. Lyell 6 Aug 1933 (JSG). **Tuolumne County:** Crest W of Tioga Pass 9 July to 31 July 1958 (AOS); Mt. Dana, W slope 8 Aug 1933 (JSG); Upper Gaylor Lake 31 July 1957 and 9 to 19 July 1958 (AOS).

**Distribution: California:** Alpine, Fresno, Inyo, Madera, Mono, Tulare and Tuolumne counties. This is another butterfly highly sought for collections or photographs. It tends to be found in limited numbers on talus slides or very rocky terrain, often above 11,000', but I have seen it at the lower end of talus slides at the base of Red Mountain in Hudsonian Life Zone west below Saddlebag Lake (below 9800') and on the trail on the SW side of that same lake at about 10,100'.

**Habitat:** Rocky slopes and alpine-fell fields in upper Hudsonian Life Zone and the Arctic-Alpine Zone.

**Flight:** Late June to late August. Most records are from mid-July to mid-August. The timing of flights depends on weather, including temperature and when snowmelt occurs.

**181. Sagebrush or Acastus Checkerspot**—*Chlosyne acastus* (W. H. Edwards, 1874) (1870).  
Two subspecies occur in the Sierra Nevada:

**a. Sagebrush or Acastus Checkerspot**—*Chlosyne acastus acastus* (W. H. Edwards, 1874) (1870).

**Taxonomic notes:** This subspecies tends to be a more yellow-orange on the dorsal side than *C. palla* but has a more complete linear pattern than *neumoegeni*, and like *neumoegeni* has pearly white bands on the hindwings ventrally.

**Type Locality:** Provo Canyon, Utah County, Utah.

**Records:** **California:** **Alpine County:** Woodfords 11 June 1973 (PMT). **Inyo County:** SF of Bishop Creek near Bishop Creek Lodge 8400' 23 June 1986 (KD); below Bishop Creek Lodge 7000' to 8000' 17 & 18 May 1993 (KD); Tollhouse Camp 6600', 8 & 9 May 1997 (KD); Pine Creek Canyon 30 May 1999 & 21 Apr 2015 (KD). **Mono County:** Rock Creek 3 mi S of Walker 26 May 1979 & 12 June 1980 (both JRM); Mono Lake 30 June 1950 (JWT) & 30 June 1958 (JWT); Sherwin Summit grade near scenic turnout US 395, 15 May 1988 (RPM) & 17 May 1993 (KD); hilltop NE of US 395 near Tom's Place 11 June 1996 (JGP); Lower Rock Creek, common 9 May 1997 & 14 May 2006 (KD); Hot Creek near Mammoth 24 June 2006 (KD). **Nevada County:** Truckee River Canyon, gulches N of I-80 5300', 5 June 1997 (RES).

**Distribution:** **California** Alpine, Amador, El Dorado, Inyo, Mono, Nevada and Sierra Counties. The species also appears in Nevada near the Carson Range. A Tulare County record for 3 mi. E of the Generals Hwy. near Big Meadow near Kings Canyon National Park 23 June 1997 by the author lacks pearly white bands on the hindwings of a female and is almost certainly a Northern Checkerspot (*Chlosyne palla*). **Nevada:** Carson City, Douglas and Washoe Counties.

**Habitat:** Sagebrush flats and wet meadows with sagebrush. Adults patrol dirt roads and edges of paved roads, ravines and washes. This species is closely associated with Great Basin sagebrush, usually at the eastern base of the Sierra Nevada but has been found in the Bishop Creek drainage as high as 8400' near the Bishop Creek Lodge. This species can be quite common at times. In Pine Creek Canyon near Rovana in Inyo County, males patrol the base of a steep sandy hill along the paved road.

**Flight:** Late April to mid-July. The main flight is from late April to mid- June. Apparently, there are no late summer or fall flights.

**b. Neumoegen's Checkerspot**—*Chlosyne acastus neumoegeni* (Skinner, 1895).

**Taxonomic notes:** Long believed to be a full species...” Recent unpublished hybridization studies by J. F. Emmel have helped to define the species relationships of the subgenus *Charidryas* in California. Crosses between the taxa *acastus*, *vallismortis* (J. W. Johnson) and *neumoegeni* (Skinner) show that all belong to the same species complex (Emmel, Emmel & Mattoon, 1998c).

This subspecies tends towards obsolescence of the black lines on the upperside, though some colonies tend to have more complete patterns. The pearly white bands on the hindwings below help identify this as being an *acastus* subspecies.

**Type Locality:** Virgin River Valley, Washington County, Utah.

**Records: California: Kern County:** Kelso Valley Rd in canyon 13 mi S of SR 178 (Weldon) 14 Apr 2000; 11 & 23 Apr 2005 (KD). Piute Mountains E slope in Pinyon/Juniper woodland 2 mi W Sageland 6 Apr 2002 (KD); canyon 1.5 mi S Butterbrecht Peak 29 Apr 1992 (KD); Sand Canyon 28 Oct 2005 (SS), an unusual fall record. **Inyo County:** Lubken Canyon 2 mi S Lone Pine 7 May 1992 & 30 Apr 2017 (KD); near Toll House Camp in canyon off Bishop Creek Road 8 & 9 May 1997 (blend zone with nominotypical *acastus*); lower Nine Mile Canyon 28 Mar 2003; 12 Apr 2005 & 20 Apr 2017 (KD); Lone Pine Creek near Whitney Portal 25 Apr 2005 and 27 Mar 2018 (KD).

**Distribution: California:** This checkerspot occurs in canyon bottoms and washes and on the east side of the Sierra Nevada where it meets the Mojave Desert, north to where it meets nominotypical *acastus* in the canyon below the defunct Toll House Campground. This subspecies is found only in Kern and Inyo counties in the Sierra Nevada. Interestingly, *neumoegeni* seems to have had past genetic flow with *Chlosyne palla* near the top of Nine Mile Canyon which might explain why many *palla* there share the obsolescent linear patterns on the upperside there, and why many *palla* there resemble either *neumoegeni* or nominotypical *acastus*.

**Habitat:** This desert subspecies favors arid slopes, canyons and washes with Mojave or Great Basin Desert vegetation, but also occurs in juniper/pinyon pine plant communities on eastern slopes of the Sierra Nevada up to about 7000' near Whitney Portal and on the E slopes of the Piute Mountains

**Flight:** March-April, rarely into May in the Sierra Nevada. Fall flights have been reported with some frequency following summer rains in parts of this checkerspot's range.

**182. Northern Checkerspot**—*Chlosyne palla* (Boisduval, 1852).

Three subspecies occur in the Sierra Nevada.

**a. Northern Checkerspot—*Chlosyne palla palla*** (Boisduval, 1852).

**Sierra Nevada Type Locality:** Hwy. 70 at Chambers Creek, ca 6 rd. mi SW of Belden, North Fork Feather River Canyon, 1850', Plumas County, California.

**Records: California: Fresno County:** SR 168, NW of Shaver Lake 27 May 2002 (KD); San Joaquin River Power House 7 May 2004 (KD). **Kern County:** 6 mi N of Weldon, Fay Creek Trail 14 June 1980 (KD); Greenhorn Mountains: SR 155 between Glennville & Cedar Creek 23 to 25 June 1995 (KD); 2 mi S Tiger Flat 17 June 2001 (KD); Old State Rd 17 May 2005 (KD); Kern Canyon at Democrat Hot Springs 9 June 1971 (KD). **Madera County:** Coarsegold 23 May & 8 June 1992 (KD); Sugar Pine 23 May & 8 June 1992 (KD). **Mariposa County:** Jerseydale 21 June 1961 (AOS). **Placer County:** American River near Auburn 13 June 2003 (KD). **Sierra County:** Canyon Creek trail, N Fork Yuba River, W Downieville, Tahoe National Forest 20 June 2005, 19 June 2006, 29 June 2019 (SFSU-BSNC). **Tulare County:** Freeman Creek Grove 12 & 25 June 1995 (KD); Johnsondale 14 May 1972 (KD); Sherman Pass Rd 3700-5000', 15 June 1976 (KD); upper Kern River just S Limestone Camp 21 Apr 1997 (KD); Mineral King Rd MP 8-6, 7 May 2002 (KD); Methuselah Camp near Balch Park 25 June 2005 (KD).

**National Park Records: Sequoia NP: Tulare County:** Ash Mountain 17 May 1985 (KD); Buckeye Flat 17 May 1985 & 13 Apr 1990 (KD); Potwisha 18 Apr 1986 (KD). **Yosemite NP: Mariposa County:** near Camp Curry and trail to Happy Isles 1 June 1970 (KD); trail from Camp Curry to Glacier Point 9 July 1933 (JSG).

**Distribution: California:** Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare, Tuolumne and Yuba Counties in the Sierra Nevada at lower elevations than *altasierra*. A problem giving exact distributions for subspecies in this species is that this variable checkerspot does not always fit into easily identifiable subspecies and there are such issues with *palla*, *australomontana* and *altasierra* in the Sierra Nevada making these matters subjective.

**Habitat:** This common species in much of the Sierra Nevada occurs in foothill woodland and chaparral, openings in forests, canyons and along streams in Upper Sonoran, Transition and lower Canadian Life Zones (the latter may or may not be *altasierra*).

**Flight:** April-July. Flights vary with locality and the seasonal weather.

**b. High Sierran Northern Checkerspot—*Chlosyne palla altasierra*** Emmel, Emmel & Mattoon, 1998).

**Taxonomic notes:** This subspecies tends to occur in upper Transition and Canadian life zones on the west slope of the Sierra Nevada, but high elevation *palla* found in the Great Basin have also been called *altasierra*. This subspecies was formerly called *whitneyi* before it was discovered (Emmel, Emmel & Mattoon, 1998c) from the original description of this butterfly and the habitat it occurs in, that the name actually represented what formerly went by the name *Chlosyne*

*damoetas malcolmi*. This subspecies tends to have more intricate black lines above and to be a darker red-orange color dorsally.

**Sierra Nevada Type Locality:** Fallen Leaf Lake, 6400, El Dorado County, California.

**Records: California: Alpine County:** Woodford 12 June 2003 (KD). **El Dorado County:** Fallen Leaf Lake 6400' 29 June 1961 (AOS); 2 mi. E of Myers, Hwy 50, 7 July 2019 (PAO-EBO). **Fresno County:** Huntington Lake 12 June to 28 July 1930 (LMI); Mono Hot Springs 7 July 2002 (RE). **Madera County:** Fresno Dome Saddle 7200' 1-2 July 1996 and 5 & 11 July 1999 (KD); Big Sandy Camp area 16 June 2016 (KD). **Mono County:** 9.1 mi N of Bridgeport near Devil's Gate Pass 9 July 1987 (KD); Mill Canyon Rd SW of Walker 11 June 1996 (JGP); Virginia Canyon 7 Aug 1996 (BRB); Little Antelope Canyon 14 June & 12 July 1996 (BRB). **Placer County:** Squaw Valley near Truckee 14 June 2003 (KD). **Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest, 23 June 2016 (SFSU-BSNC). **Sierra County:** Henness Pass Rd W Nevada state line 17 June 2016 (JD), placement as ssp. *altasierra* tentative; Forest road 52, S Bassetts, Tahoe National Forest, 20 June 2016 (SFSU-BSNC). **Tulare County:** Stony Creek Camp & Woodward Creek 27-29 June 1987 and 11-12 June 1990 (KD); Kings Canyon Overlook 23 June 1988 (KD, a female resembles *Chlosyne gabbii*); granite domes near Big Meadow near Kings Canyon NP 23 June 1989 & 23 June 1997 (KD). **Tuolumne County:** Niagara Creek area 8 & 13 July 1987 and 7 July 2009 (KD); Mill Creek (Sonora Pass Rd) 8 and 13 July 1987 (KD).

**National Park Records: Kings Canyon NP: Tulare County:** Buena Vista Peak Trailhead 23 June 1989 (KD). **Sequoia NP: Tulare County:** Tokopah Falls Trail 12 July 1990 & 2 Aug 1993 (KD); Dorst Camp 16 July 1992 (KD). **Yosemite NP: Mariposa County:** Yosemite Creek Trail S of Tioga Rd 7 to 17 July 1956 and White Wolf 10 July 1956 (JSG) are likely *altasierra* because of location. If not, they are nominotypical *palla* as reported by Garth & Tilden (1963). True *altasierra* does occur in the Yosemite region in the Fresno Dome area, Garth & Tilden stated they had found none in the Yosemite area.

**Distribution: California:** El Dorado, Fresno, Mono, Nevada, Placer, Sierra, Tulare (provisional) and Tuolumne counties. This checkerspot is found at the higher elevations of the Sierra Nevada from the Yosemite National Park (or Sequoia National Park if those are atypical *altasierra*) region north into Sierra County. Records from Tulare and Fresno counties are tentatively placed here. **Nevada:** Carson City, Douglas and Washoe counties. These may be closer to nominotypical *palla*.

**Habitat:** Upper Transition and Canadian Life Zones along roadside ravines and drainages, forest openings and smaller meadows.

**Flight:** Second half of May to mid-July.

**c. Southern Sierra Northern Checkerspot—*Chlosyne palla australomontana*** Emmel, Emmel & Mattoon, 1998

**Taxonomic notes:** This subspecies is the most lightly marked *palla* subspecies in California, often resembling *Chlosyne acastus acastus* or *neumoegeni*. Some females of this subspecies at Spring, a roadside turnout along a stream that flows into Pine Creek and at a Kennedy Meadows Rd. summit closely resemble Sagebrush Checkerspots on the upperside.

**Sierra Nevada Type Locality:** Kennedy Meadows Road, 16-20 miles W. of Hwy. 395, Tulare County, California.

**Records: California: Inyo County:** Upper Nine Mile Canyon 3 July 1978 and 6 July 1983 (KD). **Kern County:** 0.7 mi SW of Sageland N of Kelso Valley 15 May 1976 (KD/JB) and 26 May 1978; 1 May 1981 & 27 May 1993 (all KD); hills and canyons E Kelso Valley Rd summit 1 May 1981 & 27 May 1993 (KD); Chimney Peak Rd S Lamont Peak 13 June 1999 & 27 Apr 2003 (KD); Bird Spring Pass 28 May 2006 (KD); Piute Mountains, E slope 3-4 mi W of Sageland 24-30 May 2005 (KD). **Tulare County:** Pine Mountain area N Kennedy Meadows 3 July 1983 (KD); Kennedy Meadows 2 July 1983 (JGP) & 26 May 2001 (KD); Fish Creek 2 July 1983 (KD); Spring (Pine Creek), 5-7 mi S Kennedy Meadows 22 May, 25 June, 10 July 1982 and 25 June 2019 (KD); summit of Nine Mile Canyon 26 May 2001 (KD); Bald Mountain Lookout 9400' 10 July 1982 & 31 May 1986 (KD).

**Distribution: California:** Inyo, Kern and Tulare counties. This subspecies occurs abundantly in the Kennedy Meadows region of Tulare County south to the Kelso Valley area in Kern County where it is now scarce. It is still fairly common on the east slope of the Piute Mountains. I do not include populations further west in Kern and Tulare Counties along the Kern River and on the west slope of the Piutes as *australomontana* because those populations tend to more closely resemble nominotypical *palla*. However there does seem to be blending between these two subspecies on the Kern Plateau and in the Sherman Pass area. This subspecies also occurs in upper Nine Mile Canyon in Inyo County, possibly as far north on the east side of the Sierra Nevada as Big Pine Canyon but what subspecies occurs there is unclear. The larval host appears to be sagebrush: *Ericameria viscidiflorus*.

**Habitat:** Sagebrush scrub at high elevation in the Kennedy Meadows area, Mojave Desert plant associations in the Kelso Valley area and pinyon pine/foothill woodland on the east slope of the Piutes.

**Flight:** Mid-April to the third week of July.

**183. Orseis or California Crescent—*Phyciodes orseis herlani* W. H. Edwards Bauer, 1975).**

This is a highly prized and sought-after butterfly in the Sierra Nevada which few find. Many supposed “*orseis*” are misidentified *mylitta* or *pulchella*. Many rely on photos in Field Guides to identify this crescent, but the problem in doing that is that many photos in such books are also misidentified. Males tend to be more correctly identified but females are less frequently encountered and more likely to be misidentified female Field Crescents.

I'll cite the Kaufman Field Guide here as the most accurate description for the Sierra Nevada subspecies which is quite different from nominotypical *orseis* (Brock & Kaufman, 2003) and the photographs are correct for *herlani*: very similar to *mylitta* in males, more similar to *pulchella* in females, hindwings slightly more angular than in similar species, antennal clubs are orange, in the Sierra Nevada, above mostly orange with fine black markings, below yellow with fine brown lines. To that I'll add that female *herlani* can resemble Field Crescents but are more marked like *mylitta* below. Orange antennae are no guarantee that you found *orseis* because many individual Field Crescents in the Sierra Nevada also have orange antennae.

**Taxonomic note:** This subspecies was unknown to science until David Bauer included it in William H. Howe's 1975 classic Butterflies of North America book, now out of print. This subspecies also has been called the Sierra Nevada or Herlan's Crescent.

**Sierra Nevada Type Locality:** Glenbrook Creek 7000', Douglas County, Nevada.

**Records: California: Calaveras County:** Big Meadows 2 Aug 32 (R. Wind). **El Dorado County:** Upper Glen Alpine Crk. 7600' 19 July 1988 (larvae, JFE). **Fresno County:** Badger Flat 15 July 1996 (CS); Huntington Lake area (fide JFE); Fourth Recess Lake 4 July 2008 (Jack V. Vaughn). **Madera County:** Fresno Dome Camp along creek and Fresno Dome trailhead 1 July 1996 (KD). **Mono County:** Subalpine forest W below Saddlebag Lake 25 June 1976 (KD); 28 June 1981 (RLL); 10 July 1987; 5 July 1989 (common); 24 July 1993; 11 Aug 1991; 24 Aug 1990 (all KD); Green Canyon 10 June & 15 July 1996 (BRB); Saddlebag Lake 10,000' 28 June 1981 (RLL); Wolf Canyon 11 July 1996 (BRB); Lake Mary near Mammoth Lakes 7 July 1984 (RPM); road to Saddlebag Lake near Gardisky Trailhead in ravine along road 26-27 June 2012 (KD). **Nevada County:** Donner Pass 7000', scarce 2 & 30 July 1975 (AMS); Donner Lake and Summit Lake 7000' 19 & 26 July 1980 (RK). **Placer County:** Mt. Ellis Peak in meadow near Tahoe City 26 June 2016 (Nancy Crosby). **Sierra County:** Big Springs, Hwy 49 5 July 2007 (SEABA-C); Jones Valley, Tahoe National Forest, 23 June 2016 (SFSU-BSNC). **Tuolumne County:** Eagle Meadows area south side Sonora Pass Rd 13 July 1987 & 13 July 1994 (KD). **Nevada: Carson City County:** Kings Canyon Rd 3.6 mi SW end of pavement from Carson City 6 July 1990 (Bruce O'Hara). **Douglas County:** Carson Range, US 50, Montreal Canyon 6 July 1981 (GTA). **Washoe County:** Stateline 30 June 2000 (EDB); Carson Range above Incline, First Creek area 10 July 2003 (GTA).

**Distribution: California:** Alpine, Calaveras, El Dorado, Fresno, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra and Tuolumne counties. **Nevada:** All counties.

**Habitat:** Canadian and Hudsonian Life Zones where the species favors riparian areas in Canadian Zone forests and subalpine Hudsonian Life Zone forests. Males tend to be encountered more frequently than females and while I have much experience with males of this butterfly, the female range of variation is little known. If your female is blackish rather than orange-brown, chances are you have a Field Crescent. Males visit tall flowers along streams (not short flowers like *mylitta* and *pulchella*) and patrol small sunlit glades and will fly up steep slopes with talus, at least in the Yosemite area. Flights may not start until late in the morning and may end by mid-afternoon.



**Flight:** Mid- June to mid-August. Most years flights begin in late June and end in July, but *orseis* flies into August in years with a late snowmelt. Peak flights usually occur in the first half of July.

**184. Mylitta Crescent—*Phyciodes mylitta mylitta*** (W. H. Edwards, 1861).

**Type Locality:** Stanyan Hill, San Francisco, San Francisco County, California.

**National Park Records: Sequoia NP: Tulare County:** Mineral King Valley 19 July 1993 (KD); Ash Mountain and Hospital Rock 28 Feb 1986 (KD); Buckeye Flat 17 May 1985 (KD); Giant Forest Village 15 Aug 1986 (KD); Tokopah Falls Trail 19 July 1993 (KD). **Yosemite NP: Mariposa County:** Museum, Yosemite Valley 5 July 1933 (JSG); Yosemite Creek (trail S of Tioga Rd) 9 July 1956 (JSG); Glacier Point 23 June 1959 (JSG). **Tuolumne County:** N slope of Mt. Dana SW of Tioga Pass 25 Aug 1956 (KCH; RES); Tenaya Lake 11 July 1958 (AOS).

**Distribution: California:** All counties. This species is very widely distributed in the Sierra Nevada in almost any plant community and habitat and are often very common. This species can turn up anywhere from the edge of the San Joaquin Valley from the Lower Sonoran Zone up to the tree line in the upper Hudsonian Life Zone. In the southern Sierra Nevada, *mylitta* even occurs in Mojave Desert plant communities and in ravines in the Kelso Valley region, and on the east slope of the Sierra Nevada where the mountains meet the Mojave Desert in Inyo County. **Nevada:** All Counties in the Sierra.

**Habitat:** Canyons, riparian areas, meadows, dry ravines and roadsides on both west and east slopes of the Sierra Nevada.

**Flight:** Late February-early November in the southern Sierra.

**185. Field Crescent—*Phyciodes pulchella*** (Boisduval, 1852).

**Taxonomic notes:** Long known as *Phyciodes campestris* (Behr, 1863) or by some as *Phyciodes pratensis* (Behr, 1863). Various scientists and organizations continue to debate which is the correct name. Three subspecies and several unnamed segregates occur in the Sierra Nevada:

**a. Field Crescent—*Phyciodes pulchella pulchella*** (Boisduval, 1852).

**Taxonomic notes:** This subspecies is generally a more blackish butterfly than the more orange colored *montana*. The distributions of nominotypical *pulchella* and *montana* are not as clean cut as formerly believed and orange phenotypes can occur down to the San Joaquin Valley floor along the Kaweah River in Tulare County. The fact that most populations of this species have black and orange phenotypes commonly makes placing names at subspecies on many populations most difficult or even unwise.

**Type Locality:** San Francisco, San Francisco County, California.

**Records: California: Fresno County:** Kings River below Pine Flat Dam 23 Apr 2011 (KD).

**Tulare County:** Freeman Creek Grove 25 June 1981; 16 & 29 July 1983 (KD); Quaking Aspen 13 July and 3 Sep 1983 (KD), the black form dominates at these localities. These populations appear to be consistently black *pulchella*.

**National Park Records: Yosemite NP: Mariposa County:** Yosemite Valley (Museum) 5 July 1933 (JSG, this may be the southern Sierra segregate). **Tuolumne County:** Hetch-Hetchy 13 July 1956 (JSG). A series of this species would help us know how the Yosemite Valley population should be placed. **Distribution: California:** Few records are published for this species on the lower west slope of the Sierra Nevada and most that have are from higher elevations with the orange coloration and are believed to be *montana*, while black colored Field Crescents have been presumed to be the nominotypical subspecies. In the region from Madera and Mariposa Counties west of Yosemite National Park southward to Kern County, this species can be black or orange in about equal numbers regardless of elevation, but there are *montana* populations in the Sierra Nevada that are consistently orange. This is a situation that requires much further field work and examination of museum and individual collections to evaluate what occurs further north of Tuolumne to Plumas County. Sometimes the butterflies do not fit well into the subspecies concept.

**Habitat:** Wet meadows, willow thickets and streamsides.

**Flight:** Late March into September.

**b. Mountain Field Crescent—*Phyciodes pulchella montana* (Behr, 1863).**

**Taxonomic notes:** Some individuals of this species in the Eagle Meadow area of Eagle Meadows, Tuolumne County and Woodford's in Alpine County resemble *P. pulchella inornatus*, Austin 1998. This subspecies tends to be a very orange colored butterfly and females can be very large in some areas as in the Eagle Meadow area in Tuolumne County and at Woodford's in Alpine County.

**Sierra Nevada Type Locality:** Tuolumne Meadows, Tuolumne County, California.

**Records: Alpine County:** Woodfords 12 June 2003 (KD). **Amador County:** Carson Pass area 11-15 July 1986 (KD). **El Dorado County:** Echo Summit 13 July 1933 (JWT). **Madera County:** Devil's Postpile, Reds Meadow, San Joaquin River 7600' 21 June 1987 (PAO); Fresno Dome Trailhead 30 June & 1 July 2004 (KD). **Mono County:** Tioga Pass 16 July 1975 (KD); subalpine meadows and subalpine forest west below Saddlebag Lake 25 June 1976 & 18 July 1973 (KD); Sonora Pass 15 Aug 2003 (BG); Virginia Canyon 9 July 1996 (BRB). A population in Warren Creek Canyon E below Tioga Pass that flies late June into August appears to be a *montana* X *vallis* blend zone. **Tuolumne County:** Niagara Creek/Eagle Meadow Rd off SR 108, 8 July 1987 & 13 July 1994 (KD).

**National Park Records: Yosemite NP: Mariposa County:** Reserve (S of Tioga Rd on Yosemite Creek Trail 16 July 1933 (JSG); Tamarack Flat 3 July 1954 (JWT). **Tuolumne County:** Mt. Dana 8 Aug 1933 (JSG); Aspen Valley 14 July 1956 (JSG); Tuolumne Meadows 30 June 2015 and 1 July 2019 (photos, Frank Model).

**Distribution: California:** Alpine, Amador, El Dorado, Fresno, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Sierra, Tulare (probable) and Tuolumne counties.

**Habitat:** This subspecies tends to occur in the upper Transition, Canadian and Hudsonian Life Zones in wet meadows, willow thickets and along streams.

**Flight:** Late May to early September.

**c. Valley Field Crescent—*Phyciodes pulchella vallis* Austin, 1998.**

**Taxonomic notes:** This subspecies tends to be a paler orange on the dorsal side than subspecies *montana*, the black between the spot rows average broader and more clearly and completely separates the rows. See Austin (1998e) for a more detailed description.

**Type Locality:** Nevada: Lyon County; Sweetwater Mountains, Nevada state route 338, Garden Canyon, 1820m.

**Records: California: Alpine County:** Carson Valley, Diamond Valley Rd, 3.6 mi S and E of SR 88, 6 Aug 2001 (GTA). **Mono County:** Mono Lake 2, 4 & 17 Aug 1975 (KD); 9.1 mi N of Bridgeport (=Devil's Gate Pass area) 17 July 1975 & 5 Aug 1978 (KD); W of Lee Vining 26-27 June 1961 (AOS); E Walker River near Sonora Jct 9 June 1996 (GTA); Rush Creek N of Silver Lake 8 July 2004 (KD); Green Canyon 1 Aug 2004 (KD); Hot Creek E Mammoth Lakes 14 May & 24 June 2006 (KD); wetland along Mill Canyon Rd, 3-4 mi W US 395, 28 July 2019 (KD). **Nevada: Douglas County:** Carson Valley, Scossa Ranch 26 Aug 1983 & 8 Sep 1984 (GTA). **Washoe County:** Carson Range, Davis Creek Park 4 Aug 2002 (GTA); Carson Range, First Creek area, 16 Aug 2003 (GTA).

**Distribution: California:** In California *vallis* occurs in extreme E Alpine County and Mono County in the Great Basin and along the east slope of the Sierra Nevada. This subspecies occurs from the Reno area south through the Carson and Little Walker River drainages to the Mono Lake area and also occurs to the south in the Hot Creek area near Mammoth. **Nevada: Nevada: Washoe County:** Carson Valley, Douglas and Washoe counties. Reports of subspecies *montana* in Carson City, Washoe and Douglas counties are likely *vallis*.

**Habitat:** Wet meadows, pastures, willow thickets and streamsides in the Great Basin. A population along Warren Creek E of Tioga Pass appears to be a *montana/vallis* intergrade.

**Flight:** Mid-May to mid-September.

**d. Field Crescent—*Phyciodes pulchella***-southern Sierra segregate.

**Taxonomic notes:** Contrary to previously held beliefs, blackish subspecies *pulchella* and the more orange *montana* are not always well defined, especially in the central and southern Sierra Nevada. Both forms occur commonly in most populations on the western slope. Such a situation makes it difficult to assess Field Crescents in terms of determining subspecies. Is it nominotypical blackish *pulchella* or the more orange *montana*? This may be determined when series of specimens are collected or a long series of photographs are taken, but past published records to subspecies on the Sierra Nevada west slope in the Yosemite region southward in the Sierra Nevada are untrustworthy to subspecies.

**Records: California: Fresno County:** Huntington Lake 12 June to 30 July 1930 (LMI), a long series of collected specimens by Lloyd Martin & Charles Ingham (in their written report of their collecting in the back country of Fresno County) showed variable characters between blackish *pulchella* and orangish *montana*; Shaver Lake 4 July 2002 (RE). **Kern County:** Kern River Valley: Weldon 8 Sep 1974 (JB); 12 July 1985 & 11 Apr 2005 (KD); Onyx 30 June to 4 Aug 1981 (KD); Canebrake 23 Apr 2005 (KD). Greenhorn Mountains: Kern Canyon, Clear Creek/Hobo Camp 14 May 1976 (KD); Old State Rd at stream at Waggy Flat Rd 2 July 2005 (KD); N of Tiger Flat 25 June 1995 & 11 June 1996 (KD). Piute Mountains: Havilah 5-12 Sep 1975 & Havilah Knolls 29 May 1979 (KD), south for the Sierra Nevada. **Madera County:** Big Sandy Camp 1 July 2004 (KD). **Mariposa County:** Jerseydale 23 June 1961 (AOS); Summerdale Camp E Fish Camp 29 June 2004 (KD). **Tulare County:** Sherman Pass Rd 4300' to 9000' 8 Aug 1980; 10 July and 5 Aug 1982 and other dates (KD); Stony Creek 27-29 June 1987 & 28 June 2003 (KD); Kennedy Meadows 31 Aug 2002 (KD); Big Meadow & Boulder Creek near Kings Canyon NP 28 June 2003 (KD).

**National Park Records: Kings Canyon NP: Tulare County:** Wilsonia 18 Aug 1989 (KD). **Sequoia NP: Tulare County:** Mineral King Valley 5 July 1985 and 22 July 1993 (KD); despite such high elevation where *montana* would be expected, very black forms predominated; Mineral King, Monarch Creek 8600' to 9200' 26 July 1985 (KD); Farewell Gap Trail at south end Mineral King 19 July 1993 (KD). Giant Forest Village 27 June 1987 (KD); Halstead Meadows 15 Sep 1987 & 16 July 1992 (KD); Tokopah Falls Trail 12 June 1990 & 2 Aug 1993 (KD) and Dorst Camp 16 July 1992 (KD). **Yosemite NP: Mariposa County:** Yosemite Valley 17 July 1967 (seen, KD).

**Distribution: California:** This crescent occurs mostly on the west slope of the Sierra Nevada but extends to the east slope in Kern and Tulare Counties where the Sierra Divide is no longer a barrier. Known from Inyo? (a population in Nine Mile Canyon may be this segregate); Fresno, Kern, Madera, Mariposa and Tulare counties. It may occur in other west slope counties.

**Habitat:** Wet meadows and along streams, sometimes in drier areas at low elevation as in the Kern River Valley, Onyx, Havilah and Clear Creek at Miracle Hot Springs.

**Flight:** May to early October.

**e. Field Crescent**—*Phyciodes pulchella*-blackish eastern Sierra Nevada segregate:

**Taxonomic notes:** This population tends to be very black, more so than nominotypical *pulchella*. This population ranges NE to Sawmill Meadow on Glass Mountain, not in the Sierra Nevada. The more orange subspecies *vallis* seems to range south to Hot Creek near Mammoth in Mono County.

**Records: California: Inyo County:** SF Bishop Creek, Lodge area 8400' 7-8 July 1979; 23 June 1986 & 31 May 1999 (KD); Table Mtn. Camp 13 July 2014 (KD); Coyote Creek 10,000', W of Bishop 20 July 1994 (E/P); Pine Creek Canyon 26 May 2009 (KD) and Aspendall 12 June 2014 (KD). **Mono County:** Swall Meadow 9 & 20 May 1997 (KD/Kevin Davenport) & 30 May 1999 (KD); Lower Rock Creek 24 June 2006 (KD).

**Distribution: California:** This segregate occurs in southwestern Mono County and northwestern Inyo County occurring at relatively high elevations in the Bishop Creek drainage and in a lush wet meadow at Swall Meadow at the base of the eastern escarpment of the Sierra Nevada. A disjunct population that is similar occurs in Sawmill Meadow on Glass Mountain in mountains technically not in the Sierra Nevada. A population at Crowley Lake is more orange colored (fide John F. Emmel).

**Habitat:** Wet meadows or grassy areas in willow thickets along streams.

**Flight:** May-August, probably flying into September.

**f. Field Crescent**—*Phyciodes pulchella*-Owens Valley segregate.

**Taxonomic notes:** This population is predominately orange and tends to resemble some features of the Rocky Mountains subspecies *camillus* (W. H. Edwards).

**Records: California: Inyo County:** Owens River E of Bishop 7 Aug 1978 (KD); Lubken Canyon S of Lone Pine just W of US 395, 8 Sep 1984; 7 May 1992 & 30 May 2000 (KD), this population may have disappeared; Pine Creek Canyon 26 May 2009 (KD). A population near the summit of Nine Mile Canyon in Inyo and Tulare counties (6 June 1983; 26 Aug 1985; 2 May 94 (KD) and other records may not represent this segregate. It may be closer to the unnamed southern Sierra Nevada segregate.

**Distribution: California:** The known distribution of this segregate is the Owens Valley along the Owens River and creeksides draining the east side of the Sierra Nevada in Inyo County. Populations of Field Crescents in the Lake Crowley area in Mono County could be this segregate.

**Habitat:** Wet meadows and streamsides in canyon bottoms and valleys east of the base of the east slope of the Sierra Nevada.

**Flight:** May-September.

**186. Common Ringlet—*Coenonympha tullia*** (Muller, 1764).

**Taxonomic notes:** Most authorities treat all *Coenonympha* in North America except **Hayden's Ringlet** (*C. haydenii* (W. H. Edwards, 1872) as subspecies of *C. tullia*. Others recognize *california*, *ampelos* and *ochracea* as separate species. While my personal preference is to treat these as distinct species, I'll follow the conservative approach here. There are three subspecies recognized in the Sierra Nevada.

**a. California Ringlet—*Coenonympha tullia californica*** Westwood, (1851).

Also known as: *Coenonympha californica californica*.

**Taxonomic notes:** This is the palest ringlet (often misidentified as moths) in the Sierra Nevada with darker forms appearing near the Pacific slope (outside the Sierra Nevada) and in the early spring or at higher elevations, becoming lighter as the season progresses. The yellow form "galactina" is not uncommon at lower elevations or in late summer and fall.

**Type Locality:** San Francisco, San Francisco County, California.

**Records: California: Inyo County:** Upper Nine Mile Canyon 12 Apr 2005 & 18 May 2019 (KD). **Kern County:** Bird Spring Pass 13 May 2000 and 18 Apr 2005 (KD); Sageland area in Mojave Desert plant community 4 May 2016 and 23 May 2005 and many other dates in years with good rainfall: E slope of Piute Mountains 4-5 mi. W of Sageland 23 May to 30 May 2005 (KD). These locations are in Mojave Desert plant communities. Since this butterfly is common in the western foothills of the Sierra Nevada, no other general records are given.

**Distribution: California.** This is one of the most common and widely distributed butterflies on the west slope of the Sierra Nevada ranging into virtually all west slope Sierra Nevada Counties and at elevations of over 9000' in the southern Sierra Nevada. South of Sherman Pass, the Sierran Divide becomes progressively lower and California Ringlets occur commonly on the east slope of the Sierra Nevada in Kern and southern Tulare counties as well, even in Nine Mile Canyon on the east slope of the Sierra, Inyo County, documented above under records. The only other known records for Inyo County other than from Nine Mile Canyon are a few strays from a Mojave Desert range, the Argus Mountains.

**Habitat:** This ringlet occurs in foothill woodland grasslands and mixed coniferous forests (Upper Sonoran and lower Transition Life Zones), straying higher into the Canadian Zone in the southern Sierra Nevada.

**Flight:** March to October in the Sierra Nevada with multiple broods.

**b. Northwest Ringlet—*Coenonympha tullia ampelos*** W. H. Edwards, 1871.

=*Coenonympha ampelos ampelos*.

**Taxonomic notes:** Several authors have treated *ampelos* as a species level butterfly. Emmel, Emmel and Mattoon (1998g) in their California state checklist treated *california* as a full species

and *ampelos* and *mono* as subspecies of *ampelos*. With the markedly different ground colors and different habitats, it can be difficult to accept all three are *tullia* subspecies or conspecific.

**Type Locality:** Goose Lake, Lake County, Oregon.

**Records:** **California: Alpine County:** Woodford's 12 June 2003 (KD). **Nevada County:** Donner Pass 7 Aug 1980 & 27 July 1985 (rare strays, AMS). **Placer County:** Martis Creek Recreation area 14 June 2003 (KD & Bruce Webb). **Plumas County:** 1 mi S Meadow Valley 4100', 6 & 8 June 1997 (RLL); Sierra Valley, Dyson Lane, 20 June 2016 (SFSU – BSNC). **Sierra County:** Bog meadow, Bassetts (on west slope) 19 July 1980 (AMS); near Sattley 5200' 9 June 1985 (Floyd & June Preston); Verdi, Crystal Peak Park 3 Sep 2013 (JD); Henness Pass Rd W Nevada state line 17 June 2016 (JD); Jones Valley, Tahoe National Forest, 21 June 2016 (SFSU – BSNC). **Nevada: Carson City County:** Lompa Lane at Airport Rd 17 June 1988 (GTA). **Douglas County:** Carson Valley, Scossa Ranch 11 Aug 1978 & 30 June 1980 (GTA); Clear Creek Canyon 26 May 1988 (JD).

**Distribution:**

**California:** Sierra Nevada counties include Alpine, El Dorado, Nevada, Placer, Plumas and Sierra counties. It may also occur in Amador County. **Nevada:** Carson City, Douglas and Washoe counties. This butterfly is primarily found on the east slope of the Sierra Nevada on the western edge of the Great Basin which occasionally strays over the Sierra Divide.

**Habitat:** This ringlet occurs in Great Basin wet meadows or pastures in sagebrush associations, or in stream drainages flowing eastward out of the Sierra Nevada.

**Flight:** May-August flying into September.

**c. Mono Ringlet—*Coenonympha tullia mono*** Burdick, 1942.

**Taxonomic notes:** Various authors have placed *mono* as either an *ampelos* or an *ochracea* subspecies. This ringlet is a brightly ochraceous colored butterfly which is very differently colored than the pale white or yellowish *california*.

**Sierra Nevada Type Locality:** Bridgeport, Mono County, California.

**Records:** **California: Mono County:** Mono Lake Park 2, 4 & 17 Aug 1975 (KD); 10 Aug 1991 (KD); Lee Vining Creek 18 July 1973 (KD); 9.1 mi N of Bridgeport (=Devil's Gate Pass) 5 Aug 1978 (KD); Green Canyon 10 June 1996 (BRB); Mill Canyon Rd SW of Walker 11 June 1996 (JGP); Virginia Canyon 7 Aug 1996 (BRB); Gull Lake & June Lake 27 June 1999 (KD); Little Walker River Rd just W of US 395, 8 Sep 2009; 25 July 2014 & 29 July 2018 (KD).

**Distribution: California:** This subspecies may be limited to Mono County in the Sierra Nevada, and is replaced by *ampelos* in Alpine County.

**Habitat:** Great Basin wet meadow or pastures in sagebrush associations, or in stream drainages flowing out of the Sierra Nevada east slope.

**Flight:** Mid- May to early September.

**187. Common Wood-nymph—*Cercyonis pegala* (Fabricius, 1775).**

There are four subspecies recorded for the Sierra Nevada.

**a. Ariane Wood-nymph—*Cercyonis pegala ariane* (Boisduval, 1852).**

**Taxonomic notes:** Austin (1992) in a review and revision of *Cercyonis pegala* in the Great Basin discussed this Sierra Nevada entity and gave a thorough description of *ariane*. This subspecies on the upper side is relatively a dark brown with moderate sized forewing ocelli and very little yellow associated with those ocelli. The dorsal hindwing normally has a single ocellus. The ventral surface is brownish and crossed with striations of medium length. The ventral hindwing has six of fewer small ocelli.

**Sierra Nevada Type Locality:** Meadow Valley Rd, 2 miles south of Spanish Ranch, Plumas County, California.

**Records: California: El Dorado County:** Myers 7 July 1937 (E. Van Dyke). **Plumas County:** SR 70, 1.4 to 4.1 mi N SR 89, 30 June 1985 (GTA); Butterfly Valley Botanical Area, Plumas National Forest 12 July 2012 (SFSU – BSNC); NF Feather River, Queen Lily Campground, 3 mi NNE Belden 13 July 1961 (BAMONA); Meadow Valley, Little Schneider Creek 24 June 2005 (BAMONA). **Sierra County:** Hwy 49, 1.4 mi N Hwy 89, 3 Aug 1987 (Charles Hageman).

**Distribution: California:** El Dorado, Nevada, Plumas & Sierra counties. Austin (1992) reported that this subspecies occurs mostly on the west slope of the Sierra Nevada. Many collectors and watchers often have difficulty telling this species apart from *Cercyonis sthenele*, especially *paulus*.

**Flight:** Early July to early September.

**b. Carson Valley Wood-nymph—*Cercyonis pegala carsonensis* Austin, 1992.**

**Taxonomic notes:** This subspecies resembles subspecies *gabbii* (W. H. Edwards) and *stephensi* (W. G. Wright) in many respects. The rather complex description is discussed in Austin, 1992.

**Sierra Nevada Type Locality:** Carson River Valley, Scossa Ranch, Nevada State Route 206, 3.6 miles south of Nevada State Route 207, Douglas County, Nevada.

**Records: Nevada: Carson City County:** 3 mi S of Carson City 20 & 26 July 1973 (JWT)

**Douglas County:** Minden (Tom Davies), illustrated in Howe, 1975; plates 3, #4; meadow along Foothill Rd. 22 July 1995 (JGP); Centerville Rd. 0.25 mi E SR 206, 3 Aug 2014 (Ricky Patterson); Carson Valley, Scossa Ranch 24 July 1984 & 11 Aug 1979 other dates (GTA).



**Distribution:** Limited in California to extreme east-central Alpine County and in Nevada at the foot of the east end of the Sierra Nevada (Carson Range) in the Carson Valley area in the Carson River and Truckee River drainages.

**Conservation:** This butterfly was proposed for threatened status not because it is rare, but because it lives in a limited range where a falling water table because of growing city populations are expected to seriously affect the habitat where they live. In 2019, California requires a permit to collect this butterfly.

**Flight:** Mid- July to early September.

**c. Walker River Wood-nymph—*Cercyonis pegala walkerensis* Austin, 1992.**

**Taxonomic notes:** This subspecies was described (another complex description) and named by Austin (1992) in his review and revision of Great Basin *C. pegala*. This species occurs in wet meadows at the base of the eastern Sierra Nevada. This subspecies is rather small and pale with the forewings more squared in shape. Forewing ocelli in this subspecies are often double ocelli.

**Sierra Nevada Type Locality:** Huntoon Valley, Swanger Creek, U. S. Hwy. 395, Huntoon Camp, 5.4 road miles NW of Bridgeport, 2048 m.

**Records: California: Mono County:** Bridgeport 5 Aug 1978 (KD & B. O’Hara); 9 Aug 1998 & 17 Aug 2000 (KD); S of Bridgeport off road to Twin Lakes 9 Aug 1998 (Bruce O’Hara); East Walker River, U. S. 395, 1.1 mi S Green Canyon Rd 20 Aug 1996 & 26 Aug 1997 (GTA); Huntoon Valley, Swanger Creek, Huntoon Camp, US 395 5.4 mi NW of Bridgeport 29 July 1978 (Charles Hageman); 13 & 23 July 1989 (GTA); Summers Canyon 7 July & 6 Aug 1996 (BRB); just W of Jct. US 395 & Green Creek Rd 1 Aug 2004 (KD).

**Distribution and Habitat: California:** This butterfly seems limited to Mono County from meadows just N of Mono Lake to the Bridgeport area and the drainage of the Little Walker River.

**Flight:** Second week of July-early September.

**d. Southern Sierra Nevada Wood-nymph—*Cercyonis pegala australosierra* Emmel, Emmel & Davenport 2008.**

**Taxonomic notes:** This subspecies is characterized by very prominent eyespots on the forewings, relatively large size, and generally pale grayish tan undersides. Surrounding the eyespots of the forewings of females is a variable amount of pale-yellow scaling, mixed with pale brown scales to give a lighter aspect to the distal two-fifths of the wing.

**Sierra Nevada Type Locality:** California: Tulare County; north end of Linn’s Valley, west-southwest of Posey, ca. 3,250 feet elevation.

**Records: California: Kern County:** Greenhorn Mountains 1.5 m. N of Glennville 21 July 1997 (KD); N end of Linn's Valley near Poso Creek 17 July & 7 Sep 1998; 15 & 22 July 2000 & 23 July 2001 (KD). **Tulare County:** Upper end Linn's Valley 4 to 15 Aug 1997; 21 July to 7 Sep 1998; 24 July 1999; 23 July 2001 & 5 July 2002 (all KD). This butterfly may now be extirpated. Since the landowner heard he had a very rare species on his land from collectors wanting permission to access, what was unfenced land is now fenced and the tall grasses that were host plants for this butterfly are now heavily grazed. The butterfly was formerly common in an area that occupied 2-3 acres. Ranchers in Kern County (a county home to many endangered species) least want an "endangered" or "threatened" species to be found on their land which would result in their being told by the government how to manage their land.

**Distribution: California:** The only known colony site is about 2-3 acres on private property on the Kern/Tulare County line now on fenced off land and there is only one record of a stray 2 or more miles from that locality at the N end of Linn's Valley in the Greenhorn Mountains. It would seem likely similar habitats exist on the west slope of the Sierra Nevada somewhere but such habitats in today's world are often highly desired for cattle ranching and growing illegal drugs and marijuana, something that has happened at six of my collecting sites.

**Flight:** 5 July to 10 September.

**188. Great Basin Wood-nymph—*Cercyonis sthenele*** (Boisduval, 1852).

There are three subspecies in the Sierra Nevada:

**a. Little Wood Satyr—*Cercyonis sthenele paulus*** (W. H. Edwards, 1879).

**Taxonomic notes:** This subspecies has strong well-defined markings below, often with several ocelli on the hindwings below.

**Near Sierra Nevada Type Locality:** Virginia City, Storey County, California.

**Records: California: Inyo County:** Whitney Portal area 25 Aug 1998; 9 July 2009 & 27 July 2018 (KD); Pine Creek Canyon 11 June 2014 (KD). **Mono County:** Mono Lake Park 2 & 4 Aug 1975; 22 July 1981 (KD); Lee Vining 2 Aug 1975 (KD); Green Canyon Rd and near Jct US 395 & Green Cyn. Rd 9 July 2004 (KD). **Tulare County:** Kennedy Meadows 30 June; 8 & 29 July 1988 & 22 Sep 2001 (KD); Spring, a roadside turnout next to Pine Creek 5-7 mi S Kennedy Meadows 29 July 1988 (KD).

**Distribution: California:** This subspecies occurs commonly in the Great Basin and on the east side of the Sierra Nevada in Alpine, Mono, Inyo, Plumas, and Tulare counties. Records seem to be lacking, or at least unpublished or unreported north of Alpine County in the Sierra Nevada.

**Nevada:** All counties.

**Habitat:** Juniper Woodland or sagebrush grasslands in arid areas. Adults favor wet areas in arid lands and often readily visit flowers for nectar.

**Flight:** Mid- June to mid-September.

**b. Sylvan Satyr**—*Cercyonis sthenele silvestris* (W. H. Edwards, 1861).

**Taxonomic note:** This subspecies is characterized by having indistinct scrawling rather than well-developed bands or lines on the ventral sides of the wings.

**Near Sierra Nevada Type locality:** Two air miles SW of Pulga, North Fork Feather River Canyon, Butte County, California.

**Records: California: Fresno County:** 2 mi SW of Mountain Rest 15 June 1968 (KCH & CS); ridge overlooking Redinger Lake 11 June 2004 (KD); SR 168 at Buckeye Helipad 11 June 2004 (KD). **Madera County:** Coarsegold 12 & 25 July 1992 (KD); 2 mi S Oakhurst 22 June 1987 (PAO) and 8 June 1992 (KD); Sky Ranch Rd S of SR 41, 11 June 1993 (KD); Auberry Rd 2-4 mi S North Fork 14 May 2004 (KD). **Mariposa County:** Mid-Pines 23 June 1987 (KD); Jerseydale 23 June 1987 & 9 Aug 1993 (KD). **Placer County:** Near Auburn 11 Sep 1967 (N. LaDue). **Plumas County:** 1 mi E Clio, Feather River 11 July 2012 (SFSU – BSNC); Mohawk-Chapman Road, Plumas National Forest 2 July 2007 (SEABA-C); **Portola** 17 Aug 1916 (JAC). **Sierra County:** Smithneck Road, SE Loyalton, Tahoe National Forest 4 July 2007 (SEABA-C). **Tulare County:** Badger/Eshom Rd 9-10 July 1983; 23 June 1997 & 23 June 2003 (KD); 6 mi W of Hartland 23 June 1997 (KD); Mineral King Rd milepost 8, 12 Aug 1992 (KD). **Tuolumne County:** Mather (AOS).

**National Park Records: Sequoia NP:** Elk Creek along Middle Fork Trail 2125' 26 May 1979 (PN). **Yosemite NP: Tuolumne County:** Hetch-Hetchy 13-15 July 1956 (JSG);

**Distribution: California:** Amador, El Dorado, Fresno, Madera, Mariposa, Nevada, Placer, Plumas, Sierra, Tulare and Tuolumne counties. This subspecies occurs on the west slope of the Sierra Nevada at least as far south as the Mineral King Road below Sequoia National Park in Tulare County.

**Habitat:** This butterfly favors grasslands in foothill woodland up into mixed coniferous forests in Upper Sonoran and lower Transition Life Zones on the west slope of the Sierra Nevada.

**Flight:** Mid-May to early October. The main flight period is late May into early August, but estivating females reappear in late August and September.

**c. Behr's Wood-nymph**—*Cercyonis sthenele behrii* F. Grinnell, 1905.

**Taxonomic notes:** This subspecies differs from *silvestris* by having more well-defined black line markings and distinct bands below. It usually has few if any ocelli on the hindwings below. Most past records of “*silvestris*” in the southern Sierra Nevada and southern California were actually *behrii* without being recognized. This butterfly was believed to be extinct by some workers but T. C. Emmel & J. F. Emmel (1998) designated a neotype for *Cercyonis behrii* and showed this is a subspecies of the California Coast Ranges and Tehachapi Mountains, now known to be in the southern Sierra Nevada as well.

**Type Locality:** Mt. Tamalpais, Marin County, California.

**Records: California: Inyo County:** Nine Mile Canyon 4 & 6 July and 26 Aug 1983; intermediates with *paulus* (KD). **Kern County:** Walker Pass (showing *paulus* influence) 8 Aug 1977 & 4 July 2004 (KD); Chimney Peak Rd S Lamont Peak 4 & 6 July 1983 and 13 July 1999 (KD); Bird Spring Pass 1 July 2000 (KD); Jawbone Canyon summit and ridge SW of Butterbredt Peak 28 June 1983 (KD); 0.7 mi SW of Sageland N of Kelso Valley in ravine 5 June 1979; 27 May 1993 & 5 June 1999 (KD); in ravine 1.5 mi S of Sageland N Kelso Valley, common and fresh 14 & 21 Sep 2011 (KD); Greenhorn Mountains: South Tobias Peak Meadow 19 June 1966 (RES); Old State Rd 14 June 1990; 19 June 1993 & 22 Aug 2003 (all KD). Piute Mountains: Piute Mtn. Rd above Bodfish/Havilah Rd summit 4 & 17 July 2000 (KD); E side of Piutes W of Sageland 13 Aug 2005 & 21 Sep 2011 (KD). **Tulare County:** 2-4 mi S of Johnsondale 16 & 29 July 1983 & 31 May 1986 (KD); W side Sherman Pass 7600' 6 July 2003 (KD); Chimney Peak Rd N side of Lamont Peak 4 & 6 July 1983; 14 June 1986 & 13 June 1999 (KD); Sherman Pass Rd at 4500' 25 June 1985 (KD); upper Kern River at Corral Creek 4 & 6 June 2003 (KD); Ant Canyon E of Kern River 21 May 2011 (KD); outbreak numbers along Kern River south Limestone Camp 12 June 2017 & fresh females 28 Aug 2018 (KD).

**Distribution: California:** Davenport (2014) provided many records for *behrii* in the southern Sierra Nevada (extreme southern Inyo, Kern and southern Tulare counties) as far north as Johnsondale and the Sherman Pass Road. This subspecies horseshoes from the Mt. Pinos region to the Tehachapi Mountains to the Piutes and Greenhorns (subranges of the Sierra Nevada), Butterbredt Peak and Kelso Valley, the latter areas and Birdspring Pass in the Mojave Desert plant community.

**Habitat:** This satyr flies in grasslands in foothill woodland, the Mojave Desert plant community in desert-Sierran hills and mixed coniferous forests in the Upper Sonoran and lower Transition Life Zones.

**Flight:** Late May-July, adults often disappear in late July or August and reappear in late August and early September. Good summer rains sometimes trigger late summer or September flights of both sexes.

**189. Dark, Least or Small Wood-nymph—*Cercyonis oetus oetus*** (Boisduval, 1869).

**Sierra Nevada Type Locality:** West slope of Mt. Judah, south-southeast of Donner Pass, Placer County, California.

**Records: California: Alpine County:** Monitor Pass (JWT, no date). **Fresno County:** Duck Lake, 6 mi SE Crystal Crag Lodge 3 Aug 1961 (RES). **Inyo County:** SF Bishop Creek 8300' 7-8 July 1979; 22 June 1988; 11 July 1994 & 8 Aug 1998 (KD), this is near the southern range limit of the Sierra Nevada near Big Pine Canyon. **Mono County:** SE above Saddlebag Lake 14 Aug 1970 & 3 Aug 1975 (KD); below Lundy Lake Dam 23 June 2012 (KD). **Madera County:** Thousand Island Lakes 5 Aug 1959 (AOS). **Mono County:** Mono Lake 1 Aug 1965 (PAO); E above Saddlebag Lake at 11,000' 14 Aug 1970 & 3 Aug 1975 (KD); 9.1 mi N of Bridgeport (Devil's Gate Pass area) 19 July 1976 & 5 Aug 1978 (KD); Sonora Pass 9 Aug 1978 & 27 July

2002 (KD). **Nevada County:** Truckee 23 July 1909-10 (LACM, in Howe, 1975). **Placer County:** Tinker Knob 8900' 11 Aug 2000 (EDB). **Tuolumne County:** Meadows 2 mi W Sonora Pass 9100' 3 July 1959 (RES/PAO/Nora Opler). **Nevada:** All Counties.

**National Park Records: Yosemite NP: Tuolumne County:** Crest W of Tioga Pass 23-28 July 1960 (AOS); Upper Gaylor Lakes 1 Aug 1958 (JSG) and 20 Aug 1958 (AOS).

**Distribution: California:** Alpine, El Dorado, Fresno, Inyo, Mono, Madera, Nevada, Placer, Plumas, Sierra and Tuolumne counties. This Wood-nymph occurs along the eastern slope of the Sierra Nevada, frequently straying or breeding west of the Sierran Divide near the east boundary of Yosemite National Park. It occurs from the north end of the Sierra Nevada south to Bishop Creek, possibly further south to Big Pine Canyon. Its absence in the elevated sagebrush around Kennedy Meadows in Tulare County seems puzzling. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** Transition, Canadian, Hudsonian and Arctic Alpine Life Zones. This species is found in elevated sagebrush, grasslands and meadows where this butterfly occurs. East of Saddlebag Lake, this species was flying commonly at 11,000' above timberline on talus slides!

**Flight:** Mid-June to mid-September.

#### **190. Riding's Satyr—*Oeneis (Neominois) ridingsii pallidus* Austin, 1986.**

This is a very unique species that can easily be mistaken for a moth, or even a grasshopper. When frightened, these butterflies can easily be mistaken for a grasshopper and some have even called this species "The Grasshopper Satyr."

**Taxonomic notes:** Austin (1986) described this very pallid Sierra Nevada subspecies that also occurs in the White Mountains and in the western Great Basin. Zhang, Cong, Shen, Opler and Grishin (2019 a & b) did genomic DNA work on this species and found it is best considered to be in the genus *Oeneis*, a surprise for this distinctively marked species, but this species often shares sagebrush slopes and above timberline habitats with *Oeneis chryxus* in various areas in the western states.

**Type Locality:** Nevada: Mineral County; Alkali Valley, Larkin Dry Lake Road, 4.8 road miles north of Nevada State Route 359. The area is a sandy flat valley.

**Records: California: Alpine County:** Carson Pass 9000'-10,500' 1 Aug 1983 (AMS). **El Dorado County:** Carson Pass 1 Aug 1983 (AMS). **Fresno County:** Duck Lake, 6 mi SE of Crystal Crag 3 Aug 1961 (RES). **Inyo County:** SF Bishop Creek 8000-8600' near Bishop Creek Lodge 7-8 July 1979; 23 June 1986 (KD), this population has not been seen in recent years. **Mono County:** Mammoth Peaks 25 July 1922 (JAC); ridge S of Sonora Pass 24 July 1976 (MS) & 29 July 1978 (JRM); Sonora Pass 9700' 1 Aug 1969 (Conner); Log Cabin Mine Rd W of Lee Vining 8800'-9600' 26 June 1992 (Derham Giuliani); Jct. US 395 & Little Walker River 4 Aug 1992 (JRM); hills lower end of Bridgeport Valley W of Green Creek 18 July 1998 (JRM); hills

above Convict Lake 25 June 1979 (JGP). **Tuolumne County:** Sonora Pass records for Mono County are closed to the county line.

**Distribution: California:** Alpine, El Dorado, Fresno, Inyo, Mono and Tuolumne counties. This species has a narrow distribution from Carson Pass to the north and Bishop Creek to the south mostly on the east slope of the Sierra Nevada but also occurs on some high rocky ridges (known from Mammoth Mountain and Sonora Pass); (Comstock, 1927 & Austin, 1986) but populations are now known to occur at lower elevations near the base of the Sierra Nevada east slope as well (Davenport, 2007).

**Habitat:** Riding's Satyr favors sagebrush hillsides or rocky ridges with sagebrush from about 6000' to 11,000' in the Sierra Nevada. Colonies are very local but the butterfly can be very common where found. The adults tend to sit among the grasses and sagebrush but take flight when disturbed. In the Great Basin in Mono County, I have noted these butterflies are often found on dirt roads or along trails.

**Flight:** Mid-June to early August.

**191. Chryxus Arctic—*Oeneis chryxus*** (Doubleday, (1849).

**Taxonomic notes:** Norbert Kondla and James Scott (2006) proposed that *ivallda* and *stanislaus* are subspecies of *Oeneis calais* (Scudder, 1865). All three entities are considered *chryxus* subspecies in the Pelham (2008) and 2019 on-line Catalogues.

**a. Ivallda Arctic—*Oeneis chryxus ivallda*** (Mead, 1878).

**Taxonomic notes:** Many authors have treated *ivallda* as a very pale distinct species endemic to the Sierra Nevada. The two subspecies in the Sierra Nevada are not really geographical subspecies since *ivallda* occurs both north and south of *stanislaus*, the range of *stanislaus* in the Sierra Nevada entirely within the range of *ivallda*.

**Sierra Nevada Type Locality:** Summit, Freels Peak and Tallac Mountain, within a few miles of Lake Tahoe, near the boundary line between California and Nevada. (Placer County, California).

**Records: California: Alpine County:** 2 mi E Alpine Lake 8400' 18 June 1981 (JRM, flying with *stanislaus*); N of Carson Pass 23 July 1969 (Conner & Ludtke); alpine ridge N Woodchuck Basin 8800' 22 July 1997 (RK). **El Dorado County:** Echo Lake below 8000' 5 July 1965 (N. LaDue). **Fresno County:** Kaiser Crest and Kaiser Peak 10,000' to 10,300' 17 June to 26 July 1930 (LMI); cliff below pass, Goddard Canyon 11,500' 21 Aug 1972 (SR). **Inyo County:** Mono Pass 30 & 31 Aug 1965 and 30 Aug 1967 (PAO); South Fork of Bishop Creek 8400' 7-9 July 1979 (KD). **Tulare County:** Chicken Spring Lake above Cottonwood Pass 11,400' 19 July 1973 (JRM); Vidette Creek 10,800' 27 July 1991 (JFE). **Mono County:** Mammoth Mountain 11,020' 20 July 1922 (JAC) & 21 July 1992 (PMT); W of Saddlebag Lake on rocky slope 13 Aug 1970 and 29 July 2019 (KD); E above Saddlebag Lake 17 July 1973; 3 Aug 1975 and 3 July 1989 (all KD); ridge between Saddlebag Lake and Gardisky Lake 2 Aug 2017 (Brian Banker, both *ivallda*

and *stanislaus* phenotypes); ridge SE of Mt. Conness 13 & 20 July 1983; 25 July 1981 and other dates (KD). Warren Creek Canyon 9500' 3 Aug 1981 and Glacier Canyon, N slope of Mt. Dana 5 July 1981 (both RLL); Minaret Vista, Devil's Postpile 29-30 June 2015 (Frank Model).

**Nevada County:** Near Donner Pass above 8500', huge numbers 13 July 1977 (AMS), but only one at 7000' (low elevation for this butterfly, AMS); one taken 10 Sep 1979 (AMS); Castle Peak 9000' 29 June and 4 Sep 1993 (AMS); Summit Castle Peak 9100' N Donner Pass 28 July 1976 (AMS), common Castle Peak 9000' 14 July-23 Aug 1979 (AMS). **Placer County:** Donner Peak 8000' 23 July 1991 (JFE). **Nevada: Carson City County:** Snow Valley Peak and ridge to north of Carson City 25 July 1981 (GTA). **Douglas County:** Carson Range, East Peak area 28 June 1985 (GTA). **Washoe County:** Tahoe Meadows, 2.4 mi W of Mt. Rose Summit 29 & 30 June 1981 (G. Harjes); Tahoe Rim Trail, Relay Peak 9400' 26 Aug 2011 (JD).

**National Park Records: Sequoia NP:** Shepherd Pass 12,000' 26-28 July 1966 (Steve Johnson); Cottonwood Pass 11,600' 15 July 1973 (JRM); Mineral King, Farewell Gap Trail 28 Aug 1983 (PN). **Yosemite NP: Madera/Tuolumne County:** Mt. Lyell 6 Aug 1933 (JSG). **Mariposa County:** Vogelsang Pass 3 Aug 1933 (JSG). **Tuolumne County:** Tioga Pass 16 Aug 1962 (JWT); N slope of Mt. Dana SW of Tioga Pass 20 Aug 1965 (KCH).

**Distribution: California:** This paler light colored "Arctic" butterfly occurs in Alpine, Amador, El Dorado, Fresno, Inyo, Madera, Mariposa, Mono, Nevada, Placer, Tulare and Tuolumne counties reflecting the geology of the rock formations found along the High Sierra where lighter colored granitic peaks dominate. The southern range limits are in the Mineral King area and back country of Sequoia National Park. *Ivallda* does not seem to reach the lower elevations of the range in Sierra or Plumas counties. **Nevada:** Carson City, Douglas and Washoe counties.

**Habitat:** This wary and elusive butterfly is usually limited to the unforested upper Hudsonian and Arctic Alpine Life Zones where *ivallda* favors rocky terrain and outcrops with difficult footing for the observer and is difficult to approach. This species flies to the tops of the highest peaks in the Sierra Nevada, but I have occasionally found adults on steep sagebrush slopes or meadow drainages below rocky slopes.

**Flight:** 8 June to 16 September. Early flights happen in dry years with higher temperatures coming early in the season; flights can be delayed in wet years with summer storms and/or delayed snowmelt.

#### **b. Stanislaus Arctic—*Oeneis chryxus stanislaus* Hovanitz, 1937.**

**Taxonomic notes:** Some authors (Garth & Tilden, 1986) treated *stanislaus* as a different species than *ivallda* based on disjunct range distributions within the Sierra Nevada. Hovanitz (1978 (79) reprint of 1941 paper) discussed that the two subspecies coloration appears tied in with the coloration of the rocks in which they occur, which presumably gives them a protective advantage from predators.

**Sierra Nevada Type Locality:** Deadman Creek, tributary of the Middle Fork Stanislaus River, border of Tuolumne County and Alpine County, California 8400' (Sonora Pass, Alpine County).

**Records: California: Alpine County:** 2 mi E Alpine Lake 8400' (flying with *ivallda*) 18 June 1981 (JRM); St. Mary's Pass 10,000' 3 Aug 1991 (B. Neill) and at 10,400' 7 Sep 2011 (JD). **Mono County:** Little Walker River Canyon 9200' 3 Aug 1975 (JRM); E of Saddlebag Lake 11,400' 30 July 1969 (Conner & Ludtke); Patterson Peak near Nevada border 20 Aug 1969 (Peter Herlan); ridge south side of Sonora Pass 24 July 1976 and 22 July 1978 (MS) & 29 July 1978 (JRM); ridge NE of Sonora Pass 11,000' 7 & 9 July 1987 and one individual, 9 Aug 1998 (KD). **Tuolumne County:** 1 mi SW of Clark's Fork turnoff on SR 108 just W Dardanelles 26 to 28 July 1963 (Keith Brown Jr.); many Sonora Pass records are from this county.

**Distribution: California:** This darker subspecies seems to occur only on dark-red tertiary volcanics and red Miocene andesite rocks (Hovanitz 1978(79)) than the lighter colored rocks *ivallda* occurs on, presumably more protected from predation by blending in with the coloration of the rocks. Its published or known range is limited to Alpine, Mono and Tuolumne counties. This "Arctic" Butterfly normally occurs near or above timberline. A well-known classic locality is the hills north of Sonora Pass. In some areas, both *ivallda* and *stanislaus* can occur as color forms in the same area (Tioga Pass region W above Warren Creek) and I have taken at least one *ivallda* on the south side of Sonora Pass.

**Habitat:** This butterfly occurs in rocky situations like *ivallda* but at Sonora Pass it occurs in more accessible rocky outcrops, easily reached from a parking lot, open hilltops where adults are easily observed. Accessing the *stanislaus* off the Tioga Pass Rd via the Gardisky Trail (Saddlebag Lake Rd.) requires some strenuous hiking.

**Flight:** 8 June to 7 September. This butterfly flies late June to mid-August every other year... this butterfly apparently takes 2 years to complete its life cycle and therefore flies in alternate years, with an occasional exception; however, note that the above records include both even-numbered and odd-numbered years.

**192. Great Arctic—*Oeneis nevadensis nevadensis*** (Felder & Felder, 1867).

**Taxonomic note:** This butterfly was named based on the belief it occurs in the state of Nevada. This was unfortunate because to date, there are no records of this butterfly from that state, though it occurs nearby. Another possibility is that it was named from the Sierra Nevada (the last word of this mountain ranges name).

**Sierra Nevada Type Locality:** Little Volcano Mountain, ca 7 air miles southeast of Quincy, Plumas County, California.

**Records: California: Plumas County:** Butterfly Valley Botanical Area, Plumas National Forest, 23 June 2016 (SFSU – BSNC); 4 mi NE of Chester 15 July 1983 (Laurence Crabtree); Meadow Valley (Forestry Field Station) 1-3 June 1984 (RLL) and others, Lep Soc. Meeting; near UC Forestry Camp, Old Big Creek Rd 3 June 1984 (Floyd & June Preston); Stoney Ridge 7 July 2016 (Mary Maki). **Sierra County:** Oregon Creek at Miller Creek 24 June 2002 (DS).



**Distribution: California:** This species known distribution in the Sierra Nevada is in El Dorado, Nevada (a reported record by David Bauer 28 July 50), Sierra and Plumas Counties. Tilden and Smith (1986) stated the range of this species is south to Tulare County in their Western Butterfly Field Guide. This may be true because I witnessed what appeared to be a Great Arctic flying among fallen trees near the top of the Timber Gap Trail above Mineral King Valley in Sequoia National Park on 22 July 1991. Ivallda Arctics also are known from this area, but the coloration of the orange-brown butterfly I saw was much different than the pallid *ivallda* and this was a larger butterfly. While I personally have no Sierra Nevada experience with this species, I do have at Mt. Shasta (California) and Mt. Ashland and the North Umpqua River in Oregon.

**Habitat:** Openings in coniferous forests in upper Transition or Canadian Life Zone; sometimes in mixed coniferous forests, often flitting about in small sunny glades near fallen trees or branches.

**Flight:** May-July. This species usually flies in even years but rarely are found in odd-numbered years.

#### **RARELY RECORDED OR QUESTIONABLE RECORDS IN THE SIERRA NEVADA.**

\*definite record or likely species reported in the Sierra Nevada.

**Juvenal's Duskywing**—*Gesta (Erynnis) juvenalis juvenalis* (Fabricius, 1793).

This species was reported as occurring at Donner Pass in Placer County from June 19 to July 25 by Emmel & Emmel (1962). That was before John Burns major 1964 paper defining the identifications of North American duskywings. **Juvenal's Duskywing** is an eastern USA species and likely what Emmel & Emmel observed was the **Propertius Duskywing** (*Erynnis propertius*).

**Afranius Duskywing**—*Gesta (Erynnis) afranius* (Lintner, 1878).

This species was also reported to occur at Donner Pass by the Emmel's (1962) and elsewhere in the Yosemite area by Oakley Shields. There are no verified records of *afranius* in the Sierra Nevada but there is a similar looking species: *Erynnis persius* that does occur.

**Small Checkered Skipper**--*Pyrgus scriptura scriptura* (Boisduval, 1852).

This record for the Sierra Nevada is based on two males in the California Academy of Sciences from Huntington Lake, Fresno County dated July 30, 1919 by E. P. Van Duzee. That locality is in the Canadian Life Zone where *Pyrgus ruralis* would be expected, *Pyrgus scriptura* is a lowland species in California and mislabeling is suspected.

**Baird's Swallowtail—*Papilio machaon bairdii*** W. H. Edwards, 1866.

This butterfly (reported as *Papilio bairdii brucei* W. H. Edwards, 1895) has been reported from the Sierra Nevada by Comstock (1927); Martin & Ingham (1930); Garth & Tilden (1963) and more recently Vizgirdas (2007), the latter probably using Garth & Tilden as a source. There are no actual records of *bairdii* in the Sierra Nevada I know of and Comstock's illustration of *P. bairdii brucei* appears to be a *Papilio zelicaon* from Round Valley in Inyo County.

This author did publish a record of a yellow *Papilio bairdii* from Erskine Creek Canyon east of the town of Lake Isabella collected May 20, 2001 in the annual Season Summary for that year. The pupil of that specimen touches the inner angle of the wings, as do two yellow *P. polyxenes coloro* taken on Baker Point Lookout 4 and 24 July 1995 in the Greenhorn Mountains. Jim Brock reports some very black swallowtails have been seen in the Piute Mountains. The three large yellow swallowtails with the "bairdii" like pupils do overall look more like *P. polyxenes coloro*.

**Lyside Sulphur—*Kricogonia lyside*** (Godart, 1819).

Davenport (2007) cites three questionable records for this species reportedly collected in the Mono Basin in the John Emmel collection. However, the specific locality, date and collectors name are lost. The problem relates to separating data in a notebook from specimen labels which only have a code number. This record remains unverified 12 years later.

**\*Western Sulphur—*Colias occidentalis*** Scudder, 1862.

There is a reported sight record from Mather, Tuolumne County, June 30, 1962 by J. W. Tilden. There is an "old" record for "Yosemite" in June, 1926 by E. O. Essig. Oakley Shields examined two specimens of *C. occidentalis* in the Yosemite Museum in the Yosemite Valley NPS insect collection and recalls these were collected along the Ledge Trail below Yosemite Falls (Mariposa County) in late May sometime in the 1930's, collector unknown. No subsequent search has found this species in the Park, but being in a National Park, there have been few with permits to collect there. Sight records or photographs are likely insufficient for a valid determination of this species. See Garth & Tilden (1963) and Davenport (2007).

**\*Banded Hairstreak—*Satyrium calanus*** (Hubner).

There is one record from Mariposa County in Yosemite Valley near Happy Isles May 31, 1964 by Ken Davenport. This was likely an accidental import brought in on an out of state vehicle. This species is not known to occur in the state as a resident anywhere.

**\*Silver Banded Hairstreak**—*Chlorostymon simaethis sarita* (Skinner, 1895).

There is one Sierra Nevada record for Kern County north of Kelso Valley May 24, 1992 by Larry Muller and John G. Pasko.

**Coral Hairstreak**—*Satyrrium titus immaculosis*

There is a record for the Red Rock area N Reno, Washoe County, Nevada 27 July 1987 (GTA). This is just outside of what is considered the Sierra Nevada here.

**Comstock's Hairstreak**—*Callophrys sheridanii comstocki* Henne, 1940 or *interrupta* Austin, 1998.

This butterfly was reported in the 2003 Season Summary as *C. comstocki interrupta* from above Hot Creek, 0.5 to 1 mile E of Hot Springs 31 May 2003 by Michael Smith. Others who live in areas from Lake Tahoe to Reno, Nevada often report “Comstock's Hairstreak” along the Sierra Nevada east slope. I decided to try and confirm the identity of what green hairstreak was at Hot Creek. What I found were all *C. sheridanii lemberti*. **Comstock's Hairstreak** (*C. sheridanii comstocki*) occurs in the desert mountain ranges.

**Viceroy Butterfly**--*Limenitis archippus* (Cramer, 1775).

Vizgirdas (2007) includes this species in his Butterflies of the Sierra Nevada book but provides no records or information why he included this species. To my knowledge, no such verifiable records have been reported. Barbara Beck a former Tulare County resident as a young girl reported that Viceroys did occur along the Kaweah River from Visalia to the edge of the Sierra Nevada prior to human development and heavy use of pesticides, but are now long gone.

**Unsilvered Fritillary**—*Speyeria adiaeste atossa* (W. H. Edwards).

This species was reported to occur in the Piute Mountains, the southernmost subrange of the Sierra Nevada by William H. Howe (1995). He reported “the late Lloyd Martin of the Los Angeles County Museum caught dozens of the Atossa Fritillary (*Speyeria (Argynnis) adiaeste atossa*) on thistles in late June in 1926 in the Piute Mountains in Kern County, California”. Lloyd apparently believed that very hot weather killed all the males and there were no mates for females when they emerged.

This seems unlikely. No one else has reported this butterfly in the Sierra Nevada and if such specimens were collected, it would seem likely some would be in the LACM collection. When I was an associate at that museum (1985 to about 2004), I checked every specimen of *atossa* and their labels, if some existed, they must have gone to other museums or were destroyed by insect pests at the museum.

**\*California Patch—*Chlosyne californica*** (W. G. Wright, 1905).

There is one sight record from near Butterbrecht Peak on Tom's Hill, Kern County April 13, 1985 seen by Richard P. Meyer.

**Gabb's Checkerspot—*Chlosyne gabbii gabbii*** (Behr, 1863).

This species has been reported to be in the Sierra Nevada, including two in the 1995 Season Summary from Fresno County: Evolution Valley, Kings Canyon NP 10 July 1958 collected by Hardin B. Jones at the California Academy of Sciences, reported by Robert Langston. This species is also frequently reported elsewhere in the Sierra Nevada, including higher elevations of the Sherman Pass Road. In this area *Chlosyne palla* can resemble *gabbii*, *acastus* and *neumoegeni*. However, when closely examined, those checkerspots have cream colored bands on the hind wings, not pearly white bands. I have not seen the Kings Canyon NP specimens, but found no *Chlosyne gabbii* while collecting in Sequoia and Kings Canyon National Parks over several years under NPS permit, nor were any *gabbii* in the NPS collection at Ash Mountain.

**\*Texan Crescent—*Anthanassa texana texana*** (W. H. Edwards, 1863).

There is one capture record in the Sierra Nevada north of Kelso Valley by Sageland along Kelso Creek, May 24, 1992 by John G. Pasko. That specimen is now in the Colorado State University's C.P. Gillette Museum collection.

**Ox-eyed Wood-Nymph—*Cercyonis pegala boopis*** (Behr).

Lloyd Martin and Charles Ingham reported one badly worn male of this butterfly near Cedar Crest, Fresno County at 7000' on July 28, 1930. John F. Emmel was not able to find this butterfly in the LACM collection.

**Wheeler's Wood-Nymph—*Cercyonis pegala wheeleri*** W. H. Edwards, 1873).

**Sierra Nevada Type Locality:** Owens Lake, Inyo County, California.

If this actually occurred at Owens Lake, now essentially a dry lake, the habitat is now destroyed by the diversion of water in the Owens River to the city of Los Angeles. John Emmel and others have searched in the Olancho area without success.

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