



The Shooting Star

SIERRA FOOTHILLS CHAPTER

CALIFORNIA NATIVE PLANT SOCIETY

SEPTEMBER 2020

CNPS OCTOBER PLANT SALE

Our Sierra Foothills Chapter will not be having a Fall Sale this year. Because of all the uncertainties surrounding the corona virus, we have decided to skip the sale in October. I know many of you, including myself, look forward to our annual sale. It is always a fun gathering of like-minded gardeners sharing their plant stories. If you are in need of native plants this Fall, I encourage you to shop locally and support the Nurseries in your county. Thank you for your support throughout the years.

– Stephanie Garcia, Plant Sale Chairperson

“Boredom is immoral”

A note from your editor

The July Newsletter included a recommendation for an anthology of nature writing edited by Charles William Beebe (b. 1877, d. 1962). Since I had never heard of Beebe before, I looked him up on Wikipedia. According to the article, “William Beebe was more famous in the United States than any other American naturalist prior to the days of television. As a scientific writer who participated in both the popular and academic worlds, he occupied a similar role to the role later occupied by Stephen Jay Gould.” Beebe, together with Otis Barton, conducted the first deep ocean dives in the bathysphere between 1930 and 1934.

The Wiki article includes a story that made me laugh out loud. I was unable to access the original source of this story, but I believe it to be true. Since I am light on material for this month’s newsletter, I decided to share the story:

“Beebe had high expectations of the people working under him on all of his expeditions, although he never revealed the exact characteristics that he looked for in potential employees. Henry Fairfield Osborn Jr. recounts one incident in which Beebe turned down a scientist who wished to work with him when the scientist described boredom with his current duties as one of his reasons for requesting this. In response to this request, Beebe retorted:

“Boredom is immoral. All a man has to do is see. All about us nature puts on the most thrilling adventure stories ever created, but we have to use our eyes. I was walking across our compound last month when a queen termite began building her miraculous city. I saw it because I was looking down. One night three giant fruit bats flew over the face of the moon. I saw them because I was looking up. To some men the jungle is a tangled place of heat and danger. But, to the man who can see, its vines and plants form a beautiful and carefully ordered tapestry. No, I don't want any bored men around me.”

Reference: https://en.wikipedia.org/wiki/William_Beebe#cite_note-243

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*Dedicated to the Preservation of
California Native Flora.*

Plant List from Double Header (and a third location)

Peggy Moore and your editor created an excel list of all the wildflowers that we saw in bloom on the High Sierra Double Header, which took place on July 25 & 26. PM added graminoids that she saw on the Dana Plateau trail. On July 27, DK botanized the Twenty Lakes Basin north of Saddlebag Lake. The blooming wildflowers from this third location were added to the spreadsheet. The Central Sierra Precipitation chart for the 2019-2020 Water Year is included, since total precipitation is a good indicator of when peak bloom will occur at the higher elevations. (Lower precip → earlier peak bloom.)

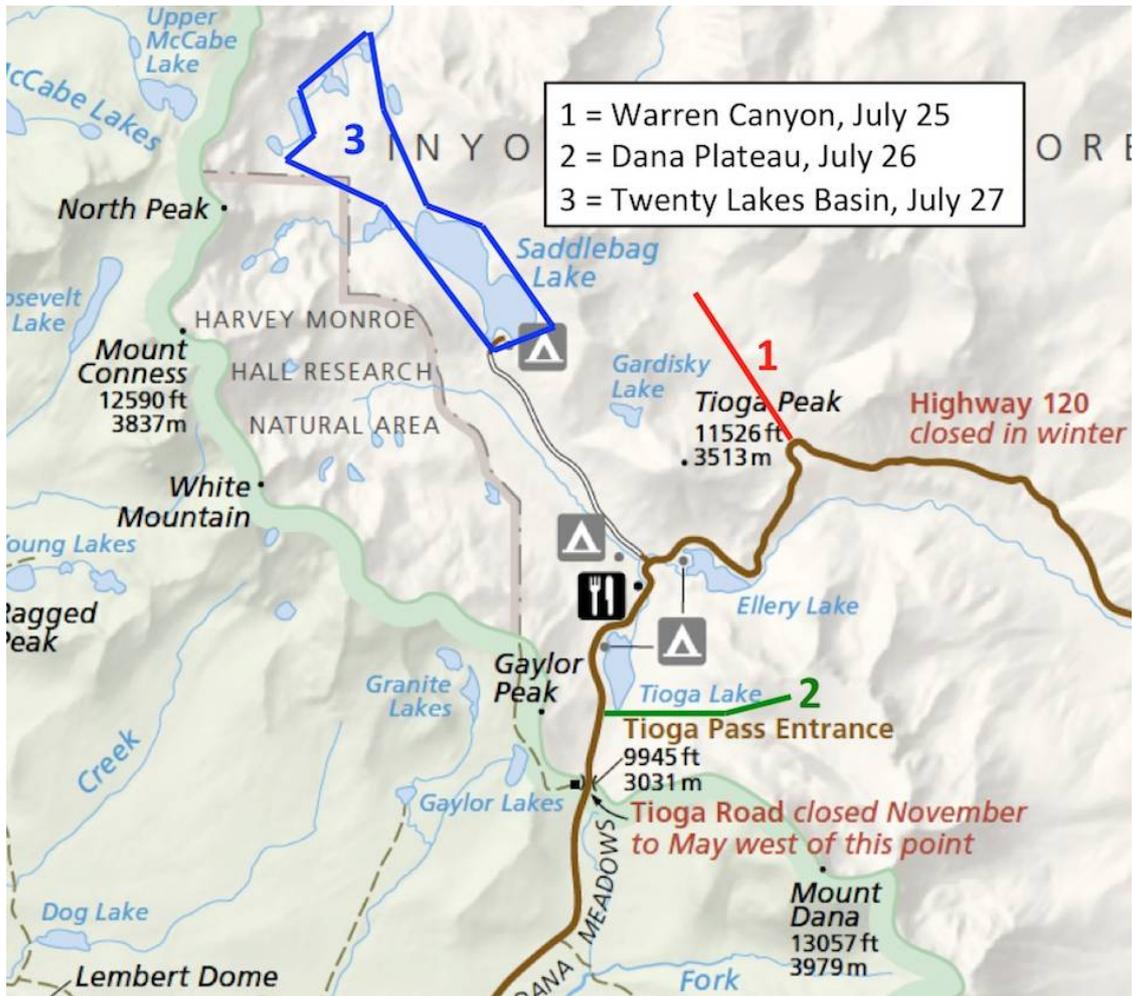
The excel file has been posted on our chapter website under the *Wildflower Information* section. You can download the excel file by clicking on the file name. Excel has one disadvantage – not everyone uses it. But for those who do use it, the sorting capabilities offer a tremendous advantage over plants lists as straight text files. Excel allows you to do mutli-level sorts. When you download the file, the default sort order is Family, then Scientific name. You will see three columns for the three locations. Each species has checkmarks in the location columns where it was found. (The first few rows of the table are pasted at the bottom of this page.)

91x wildflowers were seen in Warren Canyon; 88x were seen along the trail to the Dana Plateau; 78x in the Twenty Lakes Basin. If you want to create a list for just one location, do a three-level sort: sort first on the desired location columns; then Family; then Scientific name. If you want to see the species that were common to two locations, do a four-level sort: sort on the first location column, then the second location column, then Family, then Scientific name. If you want to see the species that were common to all three locations, do a five-level sort. Unless I made mistakes, you should find that 34x species were common to all three locations; 53x were common to Warren Canyon & Dana Plateau, but not Twenty Lakes; 45x were common to Warren & Twenty Lakes, but not Dana; and 51x were common to Dana & Twenty Lakes, but not Warren. The total # of species was 141x.

What about species that were *only* seen at *one* of the three locations? You should be able to do this on your own, but if you are having trouble, the answers are given on a worksheet titled “Comparisons.” The tables from that worksheet are reproduced on the next page, just below a map of the Tioga Pass region with the three botanizing paths superimposed. Even though the three paths are only separated by a few miles, quite a few plants were seen on only one path. No doubt some of the “unique” plants are accidents of observation. If we had searched longer and harder, we might have found them at one or both of the other locations. There were, however, differences between paths that cannot be ascribed to operator error. Examples: *Silene bernardina*, *Erythranthe erubescens*, and *Leptosiphon pachyphyllus* were extremely abundant in Warren Canyon, while none were seen at the other two locations. *Podistera nevadensis* and *Sphaeromeria cana*, both seen near the Dana Plateau, would have been hard to miss at the other locations, if present. *Micranthes tolmiei* was abundant near Cascade Lake on the Twenty Lakes loop, and should have been spotted if it had been blooming at the other locations. If you have your heart set on seeing one of these plants, it helps to know more than just the general advice: “Look for it around Tioga Pass.”

What accounts for the changes in flora over such a short distance? There are many factors. I am not qualified to address this question in any detail. For the purpose of this newsletter, I only wish to draw your attention to one factor: the underlying geology. See page 4 for geological map and discussion.

Scientific name	Common name	FAM	Calflora	WarrenCnyn	Dana_PI	SaddlebagLk
<i>Allium validum</i>	Swamp Onion	ALL		✓	✓	✓
<i>Angelica capitellata</i>	Ranger's Buttons	API		✓	✓	✓
<i>Angelica lineariloba</i>	Poison or Sierra Angelica	API		✓		
<i>Cymopterus terebinthinus</i>	Turpentine Cymopterus or Pteryxia	API		✓	✓	✓
<i>Descurainia californica</i>	Sierra Tansy Mustard	API		✓		
<i>Ligusticum grayi</i>	Gray's Lovage	API				✓
<i>Osmorhiza berteroi</i>	Mountain Sweet-cicely	API		✓	✓	✓
<i>Perideridia spp.</i>	Yampah	API		✓	✓	✓
<i>Podistera nevadensis</i> [4.3]	Sierra Podistera	API	Link		✓	



Plants blooming only in Warren Canyon

<i>Angelica lineariloba</i>	Poison or Sierra Angelica	API
<i>Descurainia californica</i>	Sierra Tansy Mustard	API
<i>Apocynum androsaemifolium</i>	Spreading or Bitter Dogbane	APO
<i>Microseris nutans</i>	Nodding Microceris	AST
<i>Taraxacum officinale</i> *	Common Dandelion	AST
<i>Nasturtium officinale</i>	Watercress	BRA
<i>Symphoricarpos rotundifolius</i>	Mountain Snowberry	CAP
<i>Silene bernardina</i>	Mountain Campion	CAR
<i>Hypericum anagalloides</i>	Tinker's Penny	HYP
<i>Iris missouriensis</i>	Western Blue Flag	IRI
<i>Sisyrinchium idahoense</i>	Idaho Blue-eyed Grass	IRI
<i>Lilium parvum</i>	Alpine Lily	LIL
<i>Oenothera elata</i> ssp. <i>hirsutissima</i>	Hooker's Evening Primrose	ONA
<i>Aphyllon fasciculatum</i>	Clustered Broomrape	ORO
<i>Erythranthe erubescens</i>	Pink Monkeyflower (prev. Lewis's)	PHR
<i>Penstemon laetus</i>	Gay Penstemon	PLA
<i>Penstemon rostriflorus</i>	Scarlet or Beaked Penstemon	PLA
<i>Ipomopsis aggregata</i>	Scarlet Gilia	POLE
<i>Leptosiphon pachyphyllus</i>	Sierra Linanthus	POLE
<i>Eriogonum umbellatum</i>	Sulfur Buckwheat	POLY
<i>Thalictrum sparsiflorum</i>	Few-flowered Meadow Rue	RAN
<i>Geum macrophyllum</i>	Large-leaf Avens	ROS
<i>Purshia tridentata</i>	Antelope Bitterbrush	ROS
<i>Micranthes odontoloma</i>	Brook Saxifrage	SAX

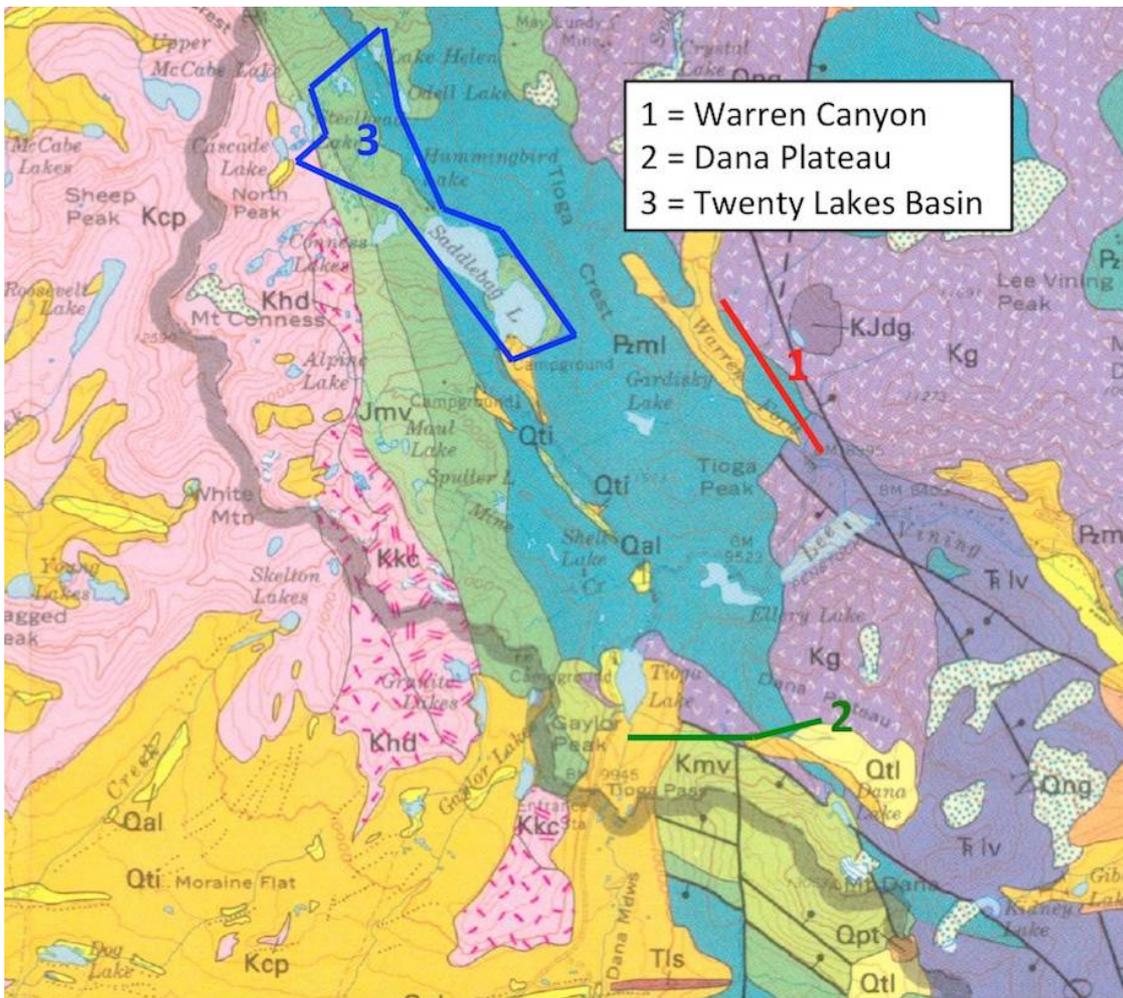
Plants blooming only on Dana Plateau trail

<i>Podistera nevadensis</i>	Sierra Podistera	API
<i>Eucephalus breweri</i>	Brewer's Aster	AST
<i>Erigeron compositus</i>	Cutleaf Daisy	AST
<i>Packera wernerifolia</i>	Hoary Groundsel	AST
<i>Raillardella argentea</i>	Silky Raillardella	AST
<i>Senecio integerrimus</i>	Mountain Butterweed	AST
<i>Sphaeromeria cana</i>	Gray Chickensage	AST
<i>Cryptantha nubigena</i>	Sierra Cat's-eye	BOR
<i>Draba densifolia</i>	Dense-leaved Draba	BRA
<i>Draba praealta</i> [2B.3]	Slender White Draba	BRA
<i>Penstemon davidsonii</i>	Davidson's Beardstongue	PLA
<i>Penstemon rydbergii</i> ssp. <i>oreocharis</i>	Meadow Penstemon (non-glandular)	PLA
<i>Leptodactylon pungens</i>	Prickly Phlox	POLE
<i>Eriogonum spergulinum</i>	Spurry Buckwheat	POLY
<i>Ivesia lycopodioides</i> var. <i>lycopodioides</i>	Clubmoss ivesia	ROS
<i>Sibbaldia procumbens</i>	Creeping Sibbaldia	ROS
<i>Pectiantia breweri</i>	Brewer's Miterwort	SAX

Plants blooming only in Twenty Lakes Basin

<i>Ligusticum grayi</i>	Gray's Lovage	API
<i>Erigeron algidus</i>	Sierra Daisy	AST
<i>Packera pauciflora</i>	Alpine Groundsel	AST
<i>Boechea davidsonii?</i>	Davidson's Rockcress	BRA
<i>Minuartia nuttallii</i>	Nuttall's Sandwort	CAR
<i>Silene menziesii</i>	Menzies's Campion	CAR
<i>Silene sargentii</i>	Alpine Campion	CAR
<i>Cassiope mertensiana</i>	White Mountain Heather	ERI
<i>Rhododendron columbianum</i>	Western Labrador Tea	ERI
<i>Castilleja pilosa</i>	Hairy or Parrothead Paintbrush	ORO
<i>Oxyria digyna</i>	Mountain Sorrel	POLY
<i>Primula tetrandra</i>	Alpine Shooting Star	PRI
<i>Potentilla flabellifolia</i> &/or <i>grayi</i>	Fan-leaved &/or Gray Cinquefoil	ROS
<i>Micranthes bryophora</i>	Bud Saxifrage	SAX
<i>Micranthes tolmiei</i>	Tolmie's Saxifrage	SAX
<i>Urtica dioica</i> ssp. <i>holosericea</i>	Stinging Nettle	URT

TOP: Map of Tioga Pass region with three paths superimposed. Paths 1 and 2 were the Double Header field trips. Path 3 is the Twenty Lakes Basin. BOTTOM: Lists of species that were *only* seen blooming in *one* of the three locations, but not the other two.



The Jepson Manual is to the geologist, as the Geologic Map is to the botanist

This is a small portion of the “Geologic Map of Yosemite National Park and Vicinity,” scaled to precisely match the map on the preceding page, with the same three botanizing paths superimposed. [The map was prepared by N. King Huber, Paul C. Bateman, and Clyde Wahrhaftig in 1989. If you want to know what all the colors and abbreviations mean, you can download a high-resolution digital version of the map and legend from USGS at the following link: <https://pubs.usgs.gov/imap/i1874/>]

The “simple” point I want to make here is that the geology is “complicated” around Tioga Pass. Everyone knows that Yosemite is the granite capitol of the world. Dark granites, light granites, pink granites. But as you exit the park and cross over to the east side, you start to see the metamorphic rocks that overlaid the granite when it intruded. Over most of Yosemite NP, the metamorphics have eroded away, exposing the granites (actually granodiorites). At the crest, some of the metamorphics remain. There are also extrusive igneous rocks on the east side, even in Warren Canyon. This produces the patchwork depicted in the map.

Even though the three botanizing paths are not far apart in miles, they sample different rock formations, hence different soils. Obviously, geology is not the sole determining factor of what grows from place to place around Tioga Pass. It is one of many factors causing the flora to vary along the three paths.

If you want to learn more about Yosemite geology, the book *Geology Underfoot in Yosemite National Park*, written by Allen F. Glazner & Greg M. Stock, is an excellent resource. (Much better than what you just read.)



**Tolmei's Saxifrage & North Peak
Twenty Lakes Basin, July 27, 2020**
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