

A person wearing a wide-brimmed hat, a dark long-sleeved shirt, and brown pants with a blue backpack is standing in a field of yellow wildflowers. The person is facing away from the camera, looking towards a rolling hillside covered in similar yellow flowers under a clear blue sky. The foreground is filled with tall, dry grasses and some green shrubs.

“On Beyond *Jepson*”

February 20, 2011

UCSC Arboretum

R. Morgan

Agrostis exarata



- Two very different local taxa currently lumped under this name ...

**[*A. exarata* var. *monolepis* (Torr.) Hitchc. =
A. exarata var. *pacifica* Vasey]**

- Common, widespread, awned form
- Gen to 2 ft. tall
- Moist soil



[*Agrostis exarata* var. *exarata*]

- Widespread but uncommon locally
- Awnless lemmas
- Taller
- Spikes +/- interrupted
- Gen in shallow water



Agrostis “holmesiae” (L)



- Small, erect annual
- Vernal pool habitat
- Fort Ord, MNT
- Discovered 2007 by Ellen Holmes & RM

Armeria maritima subsp. *californica* (tall form)



- Santa Cruz Sandhills
& Fort Ord



Artemisia pycnocephala (tall form)

- SC Sandhills and Ft. Ord



***Artemisia douglasiana* (2 forms)**

- Both planted along Guadalupe River
- **Mystery form:**
 - Much taller
 - Thicker stems
 - Virgate (vs. lax)
 - Lvs silver-gray both surfaces (vs. dk-green above)
 - Heads more numerous and smaller
- Several vars. named in original *Jepson Manual*

***Calochortus
albus***
(dwarf form)

- Floriferous
- Large-fl'd
- Coastal
- Swanton area,
SCR

Photo: Dylan Neubauer



Calochortus luteus (coastal form)



- Band of red on each petal
- n=10

Calochortus luteus (Sierra Foothills form)

- Single red spot
- $n=7$



Calochortus luteus

- Other forms to the north



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Calyptridium parryi* var. *hesseae

- RPR 1B.1
- SLO - SCR
- Not seen here since 1978
- Any more recent observations?

Cardamine californica
[var. *integrifolia* (Nutt.) Rollins]

- Open, wet meadows vs. shady woods
- Uncommon in this region



Castilleja densiflora* subsp. *d.
[*C. d.* var. *noctuinus* Eastw.]



- Uncommon
- White-tipped bracts
- Vanilla scent
- Hybridizes with subsp. *densiflora*

***Ceanothus integerrimus* var. *i.* (L)**

- Endemic to s Santa Cruz Mtns
(vs. widespread var. *macrothyrsus*)
- Only local deciduous *Ceanothus*
- Leaf 1-ribbed from base; white fls
- Near extinction?

Clarkia prostrata? (L)

- Coastal bluffs in grassland
- Grows w/ *C. davyi*
- Differs in sev chars incl smaller, con-colored fls





Prostrate to
decumbent
habit (vs.
erect in
C. davyi)

Unadorned, dk brown seeds
(vs. gray & encrusted in *C. davyi*)



Clarkia purpurea* subsp. *purpurea
(3 forms) (L)

1. Uniform interior form with small, bicolored fls
2. Very tall form nr Fort Ord with small, darker fls
3. Coastal form

Clarkia purpurea subsp. *purpurea* (coastal form) (L)

- Grassland
- Variable
- Large fls
- Uncommon



Clarkia rubicunda

[subsp. *blasdalei* (Jeps.) Lewis & Lewis (L)]



- Coastal
- Decumbent
- Infl more crowded
- Larger, paler fls
- s MRN to n SLO

Clarkia unguiculata subsp. 'lagunae' (L)

- Disc 1980s
- SCR
- Extra-compact, coastal race
- Very dk, ribbon-like petals
- Extinct?



Corallorhiza maculata [var. *immaculata* (Peck) (L)]

- As common locally as spotted form?
- White lip
- Originally a var.
- Possibly a full sp.



Photos: Dylan Neubauer

Corethrogyne filaginifolia **[*C. californica* DC.]**



- Coastal
- Solitary, lgr heads
- Stems rel stout
- Extreme expression of widespread, variable sp.

Distichlis spicata complex

- Vars. now lumped:
 1. [**var. *nana* Beetle**]: Locally rare, inland (Soda Lake, ALA, etc.)
 2. [**var. *stolonifera* Beetle**]: Coastal race
 3. [**var. *stricta* (Torr.) Scribn.**]: Common valley race



Erigeron (Conyza) sumatrensis



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- Name properly belongs to the large-fld, robust, weedy sp. that was misidentified as *Conyza floribunda* in *TJM1*

Erigeron (Conyza) sumatrensis
[*Conyza bilbaoana* J. Remy]

- Currently improperly lumped with *Erigeron sumatrensis*
- Uncommon urban weed v similar to *Conyza canadensis* exc for purple pigment and lack of ray fls

Erysimum franciscanum [var. *crassifolium* Rossbach]

- RPR 4.2
- No more like *E. franciscanum* than any other *Erysimum*
- Deserves own sp.?



Photo: Dylan Neubauer

Erysimum franciscanum [var. *crassifolium* Rossbach]



Photo: Dylan Neubauer

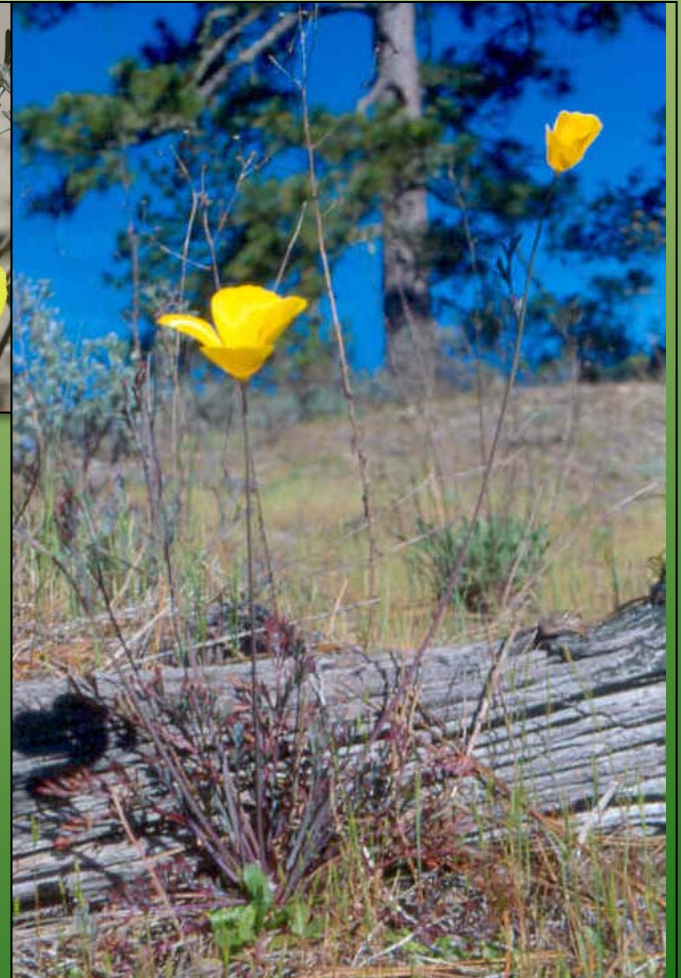
- Suffrutescent, robust biennial
- Sandy soils
- SON - SCR

Eschscholzia californica (Santa Cruz Sandhills form)

- Genetically unique
- Leggy
- Sm, yellow flowers
- Yellow not black filaments
- Leaves sm, purplish



© Jodi McGraw



Festuca (Vulpia) microstachys complex

- Varied/confusing array of self-pollinating, native annuals
- Now all lumped
- Short shrift for some of our principal native annual grasses



Fritillaria affinis

[var. *tristulis* (A. L. Grant) Ness (L)]

- A North coastal variant with short stems, broad lvs, and lg, dk fls
- Seems worth maintaining



Fritillaria sp. (L)

- Apparently new, undescribed sp. recently discovered at Fort Ord



Photos: Matt Ritter



Gilia clivorum [vars.?)

- Extremely variable in fl color patterns & leaf structure, etc.
- Related *G. capitata* contains 8 subspp., and *G. clivorum* may merit similar treatment



Heterotheca sessiliflora* subsp. *echioides
[var. *camphorata* (Eastw.) Semple]

- Quite distinct
- Densely glandular-pubescent
- Santa Cruz Mtns., Mt. Hamilton Range,
n Santa Lucias

Iris douglasiana
[var. *altissima* Purdy (L)]

- Endemic at Half Moon Bay
- 3 - 3.5 ft high
- Is this a form of the deep-purple coastal form of *Iris douglasiana*, or of the following ... ?

Iris douglasiana

[var. *major* Torr.]



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- Howell's "Marin iris"
- Woods away from imm coast
- Fls ivory/lt yellow/lt blue
- Same iris in lowland woods of SC and vicinity

Isolepis cernua (*Scirpus cernuus*)

- Usually referred to as annual
- Common form is a dense perennial
- Mainly coastal
- Does it have a name?



Lasthenia californica* subsp. *c.
[subsp. *hirsutula* Greene (L?)]



- Low-grwng, lg-fld coastal form
- Broad, often lobed basal lvs
- Full sp. in 1925
Jepson
- MEN to SB (Chl)



Lasthenia gracilis

- Most abundant comp in CA
- Not closely rel to *L. californica*
- Pappus of opaque white, lance-ovate scales (or none)
- Distinguished from *L. californica* subsp. *californica* by pappus and wider range (to s CA)

***Lasthenia californica* subsp. *c.* – left**
***Lasthenia gracilis* – right**

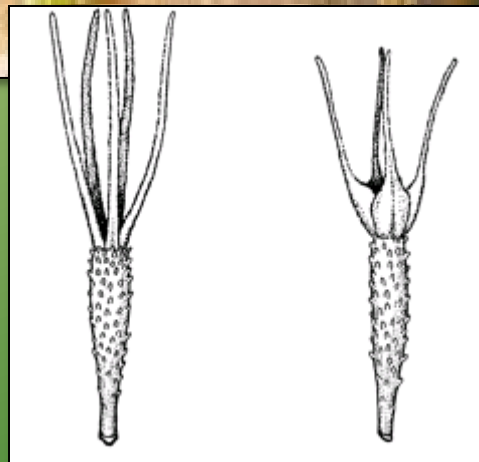
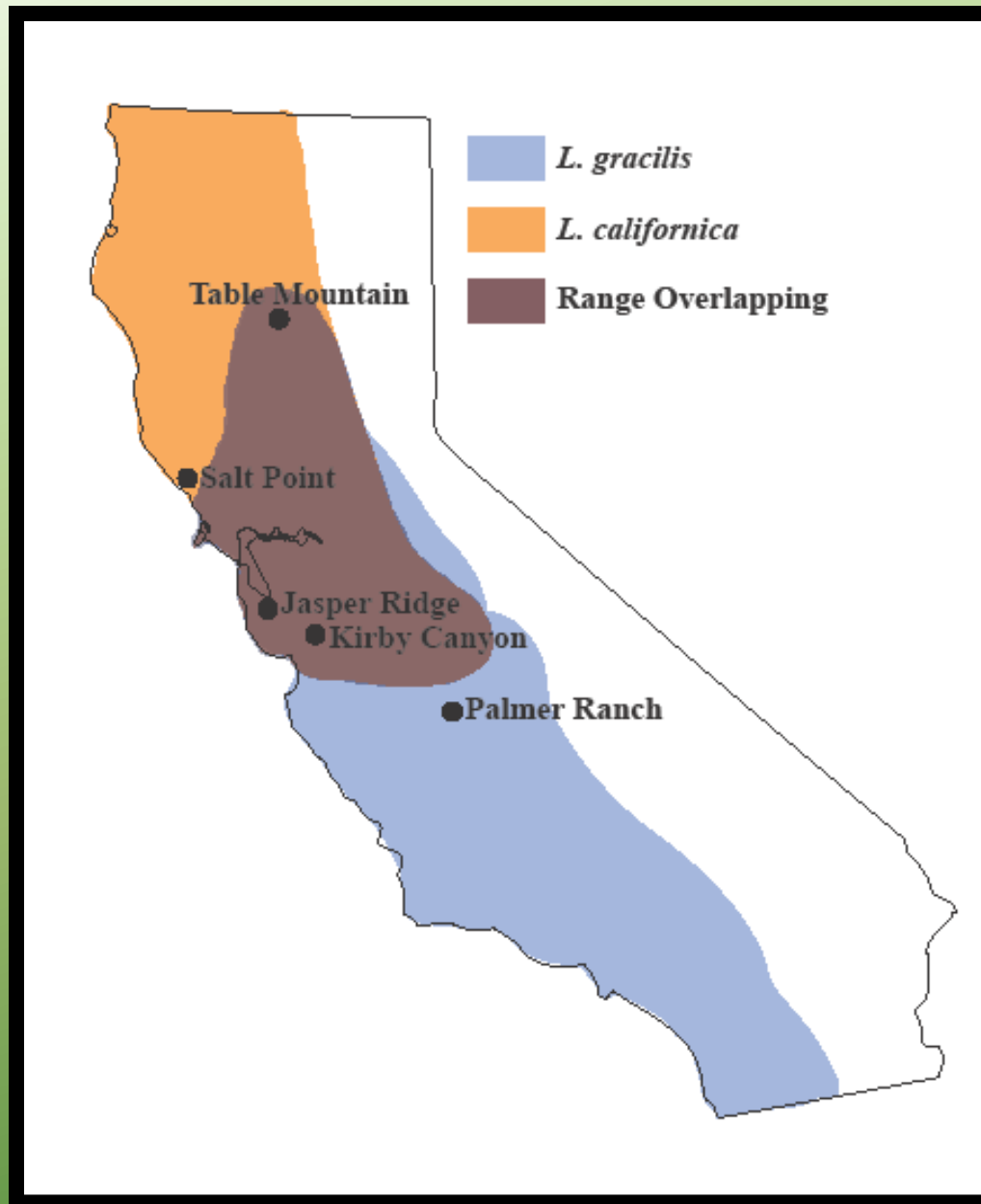


Photo: Jenn Yost



Map: Jenn Yost

Lasthenia gracilis (Santa Cruz Sandhills form) (L?)

- Unusually tall
- Late-flowering



Layia gaillardioides complex (L?)

- At least 4-6 types
- SHA, MEN coast, MNT & SCR
- Yellow, white, or white-tipped fls



Layia platyglossa
[subsp. *platyglossa* (F. & M.) Gray]

- Decumbent, succulent coastal form (vs. subsp. *campestris*)
- Dilated phyllary tips
- MEN to Chi
- Treated in Munz, Thomas



Layia platyglossa ("tipless" form)



- Do tipped and tipless forms mix?
- Deserving of taxonomic recognition?

Lepechinia sp. (L)

- Unidentifiable species seen 2 places at Fort Hunter Liggett

***Leptosiphon (Linanthus) grandiflorus*
subsp. “dylanae” (L)**

- RPR 4.2
- Endemic to SCR & vicinity
- Differs from *L. g.* in long-exserted tube and other chars
- Possibly extinct

Leptosiphon grandiflorus
(typical form - shorter tube)



L. grandiflorus subsp. "dylanae"



Leptosiphon parviflorus complex

- At least 2-4 spp.
- Pink-fl'd sp. recently descr from Lake Co. (*L. latisectus*) →



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Leptosiphon parviflorus complex



- Two distinct spp. in our region
- Both variable
- Differ consistently in morphology and habitat

Leptosiphon parviflorus (sand sp.) (*L. parviflorus* s. s.?)

- Widespread in CA
- Occurs on sand/
light soil
- White, pink, or
yellow



***Leptosiphon parviflorus* (sand sp.)**

- There is another distinctive form at Fort Ord with white fls and dk purple “bullseye”

L. parviflorus (grassland sp.)

- CCo
- Grassland/vernal pools/serpentine
- Longer fl tube
- 2 red marks base of cor lobes
- Whitish/pink/yellow fls



L. parviflorus [var. *rosaceus* Jeps.]



- Lg-fld, pink form of grassland sp.
- MAR - SMT (coastal)

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Leptosiphon croceus

- Coastal var of grassland sp. w/ lg yellow fls and rel short tube
- Recently redisc at Moss Beach, SMT



Leptosiphon croceus

Now
improperly
treated as
a full
species
under
original
name



Lupinus arboreus complex



- Name should *only* apply to coastal, yellow form
- e.g., NCo has at least 2 allopatric forms:
 1. Bluish fls
 2. Cream-cld fls

[*Lupinus arboreus* var. *eximius*
(Burtt Davy) C. P. Sm.]

- RPR 3.2
- Endemic at Montara Mtn
- Differs in villous herbage, bicolored fls (yellow & blue)
- Infl < 10 cm



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[*Lupinus propinquus* Greene]



- *L. arboreus* relative
- Grows locally in redwood belt
- More herbaceous than shrubby
- Glabrous lvs
- Dk purple fls

[*Lupinus propinquus* Greene]



Lupinus bicolor complex

- Sympatric/ allopatric self-pollinating forms
- Some quite recognizable



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Lupinus microcarpus complex

- At least 4 spp. lumped:
 - [*L. microcarpus* Sims]
 - [*L. densiflorus* Benth]
 - [*L. horizontalis* Heller]
 - [*L. ruber* Heller]
- All but *ruber* have additional regional vars., which may deserve resurrection



***Lupinus microcarpus* complex**

[Lupinus ruber A. Heller]

- Smaller fls than others
- Red-purple color
- Ascending not spreading
- Not opening fully

Madia sativa

[*M. capitata* Nutt.]

- Coastal
- Dense-headed, native counterpart of introduced S Am *M. sativa*
- Forms intergrade with each other, and with *M. gracilis*



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Hesperomecon (Meconella) linearis & *Malacothrix floccifera*

- Some pls in sandhills have all-yellow fls



Photos: Jodi McGraw

Mimulus guttatus complex

- Many named forms
- All lumped
- Some easy to ID:
 - big coastal perennial [**var. *grandis* Greene**] →
 - [**var. *nasutus* Greene**] (red spot on lower lip) →



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Minuartia californica complex

- Several spp. lumped, *but*
 - *M. cismontana* recently split out (widespread but uncommon)
 - *M. pusilla* still recognized (widespread & rare)



***Minuartia californica* complex**

- Distinctive local race endemic to Scotts Valley grasslands
- Unusually robust & showy
- Long peduncled
- Another long-peduncled, taller, unnamed form coll in Butte Co.

Minuartia californica complex

[*M. pusilla* var. *diffusa* (Maguire) McNeill (L)]



- Lumped long ago
- Differs from related spp. in several chars incl: seed shape/surface; pink anthers; sandy habitats
- Extremely prostrate (Ft Ord) to erect (Boulder Creek)

Minuartia douglasii

[*Arenaria douglasii* var. *emarginata* H. Sharsm.]

- Lumped without explanation
- Hamilton Range endemic
- Rel short, emarginate petals
- Anthers only half the length of
var. douglasii

Montia fontana

- Formerly 2 taxa:
 1. [*M. hallii* Gray]
 - sm seeds/sepals; linear lvs
 2. [*M. verna* Neck.]
 - seeds/sepals ~ 2x as lg;
spatulate lvs
- Often found together



[*Montia verna* Neck.]



[*Montia hallii* Gray]



Muilla maritima complex

- Several races/vars?
- Differ in several chars incl:
 - Color of anthers & fls
 - Habitat (sand, serpentine, grassland, etc.)



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Nemophila pedunculata complex

- 3+ spp. or subspp. in Central CA
- Others elsewhere
- Differ in several chars



***Nemophila pedunculata* complex**

(Form 1)

- Relatively large blue fls
- Oak-savanna in the Hamilton Range

***Nemophila pedunculata* complex**

(Form 2 - [*N. humifusa* Kell.])

- Grows strictly in sand
- From SF to SLO
- Very sm, white fls, spotted lvs?

Nemophila pedunculata complex (Form 3)

- Sm, purple-spotted
fls
- Oval pods
- Grows in moist-
semi-shaded
meadows nr coast



Orobanche californica subsp. ? (L?)

- Pls keying to subsp. *jepsonii* from s CCo south may be undescribed subsp.
- Rare enough for listing?



Pentachaeta exilis subsp. *aeolica*

- RPR 1B.2
- Rays well developed--
vs. 0 in subsp. *exilis*
- Should be a forma?



Perideridia gairdneri* subsp. *g.
(3 forms/subspp.?)

- **Form 1: Northern form:**
 - Central SCR northward
 - Fls in July
 - Coastal prairie
- **Form 2: Southern form**
 - Smaller
 - Central SCR southward
 - Fls Aug – Oct
 - Coastal prairie

P. gairdneri subsp. *g.* (N & S forms)



← Northern form – SMT coast



Southern form – MNT coast

Perideridia gairdneri* subsp. *g.
(Inland Form)

- Up to 6 tubers
- Oak-savannah
- Hollister Hills Rx Vehicle Area

Phalaris paradoxa
[vars. *paradoxa* & *praemorsa* (Lam.)]

- Not in *TJM*
- Hitchcock says occurs in CA & AZ
- Much lgr w/ lg, gold spikes
- V. unlike common weed *P. p.* var. *praemorsa* (Lam.)
- Colony in field nr Moss Landing

Piperia unalascensis

- Possibly extirpated in our region
- Taxonomy of forms farther N still not resolved
- SCR coastal form matches type from Unalaska Island
- Widespr mountain form possibly different race

Plagiobothrys glaber

- RPR 1A –
Presumed extinct
- Redisc nr Dublin
- Last coll nr
Hollister (1938)



Photos: Michael Simpson, SDSU

***Plantago elongata* complex**

- Incl 2 (3+) spp.
- Vernal pools and similar habitats
- No sign of hybridization when 2 forms co-occur (e.g., Fort Ord)

***Plantago elongata* complex**
[*P. bigelovii* Gray &
subsp. *californica* (Greene) Bassett ?]

- Tiny
- Corolla lobes
< 1 mm long
- Saline/alkaline
places; coast
- SLO north



***Pogogyne* sp.**

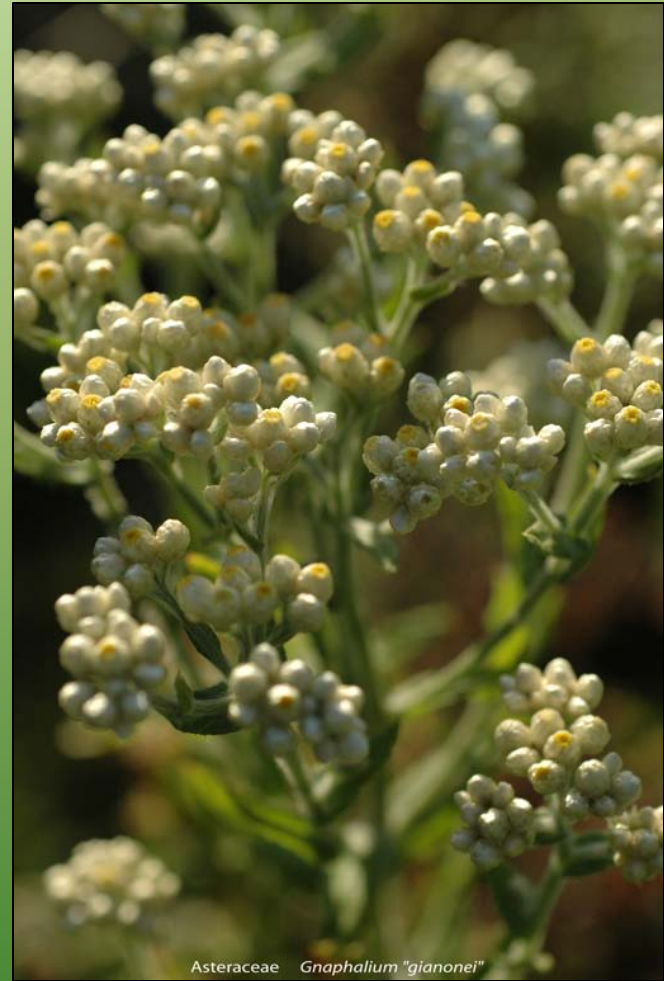
[*P. serpylloides* subsp. *intermedia* J. T. Howell ?]

- +/- int btw *P. serpylloides* & *P. zizyphoroides*
- Closer in size to *P. serpylloides*
- Vernal pool habitat like *P. zizyphoroides*
- Widely distributed but uncommon



Pseudognaphalium (*Gnaphalium*) “gianonei”

- Undescribed sp.?
- Hybrid btw
P. californicum and
P. stramineum?
- Fairly common
- Usually nr coast



Asteraceae *Gnaphalium* "gianonei"

Pseudognaphalium “gianonei”

P. californicum



© 2008 Keir Morse

P. stramineum



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Asteraceae *Gnaphalium* “gianonei”

Pseudognaphalium (*Gnaphalium*) “zayanteense” (L)

- Undescribed sp.
- Endemic to sand-parkland in SCR
- Derived from *P. beneolens* and *P. californicum*?



Pseudognaphalium beneolens (two color forms)

- **Form 1:** Green-leaved
- **Form 2:** Silver-leaved →
- Most colonies contain both



Pseudognaphalium californicum (pink-fl'd form)

- Freq in north MNT
- Can be mistaken for *Pseudognaphalium ramosissimum*



Pyrola picta

[*Pyrola aphylla* Smith]

- Local pls belong to this leafless form



Ranunculus californica [var. *cuneatus* Greene]

- Coastal form
- 9-16 + petals
(vs 5-9)
- Short, stout
ak beak
- Prostrate,
thick stems



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Sanicula “gianonei”

- Undescribed sp.
- Related to *S. crassicaulis*
- Moister habitats, acrid fragrance (vs. celery-like in *S. crassicaulis*)
- SON to SB and inland to SCL

***Sanicula* “gianonei” (on right):
w/ long, deciduous, white bristles on lvs**

S. crassicaulis



Sanicula hoffmannii

- RPR 4.3
- Oak-conifer woodlands
- Reddish base of petioles
- Middle lf lobe free almost to pt of attachment



Schoenoplectus (Scirpus) americanus [*Scirpus olneyi* Gray]

- Treated in *TJM* as syn
- Much less common
- Lf blades flat (vs. convolute)
- Pl lgr - to 2.2 m (vs. 1.1 m)
- Gen more inland



***Senecio* sp. (L)**

- Un-keyable sp found in a burn at Hunter-Liggett in 2006

Silene verecunda
[subsp. *verecunda*]

- Syn in *TJM2*
- RPR 1B.2
- Robust, denser, showier than inland
**[subsp. *platyota* (S. Watson)
C. L. Hitchc. & Maguire]**
- Imm coast from SFO s to SCR

L: *Silene verecunda* [subsp. *verecunda*]

R: *Silene verecunda* [subsp. *platyota*]



Spergularia marina [var. *tenuis* Greene]

- Treated as full sp by Jepson (1925), and as a var. by Munz
- Sm size, crowded infl, exserted capsule, rel short petals
- Fairly wide distribution; rare?
- Co-occurs with var. *marina* w/o hybridizing

Symphotrichum (Aster) lentum

- RPR 1B.2
- 4-6 ft.
- Lightly succulent
- Mostly glabrous
- Hds few & lg
- Marshes around Delta



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Symphotrichum (Aster) subspicatum

- Occ esp near coast
- Like *S. chilense* but flwng 2 months earlier (May)
- Phyllaries all +/- equal length



Toxicoscordion (Zigadenus) fremontii [var. *minor* (H. & A.) Jeps.]

- Lumped in *TJM*
- Differs from *T. f.* in:
 - Short stature
 - Very early flwng
 - Grassland habitat
- MAR to SCR



Triphysaria sp. (L)



Robert Potts © California Academy of Sciences

- Beautiful sp. at Mendocino
- Coastal prairie habitat
- Does not key to anything
- Possibly rel to *T. eriantha*?

***Triteleia laxa* complex**

- Complex of several spp.?
- At least 2 occur locally
- Can occur side-by-side (and then in diff micro-environments)

Triteleia laxa complex (Form 1)

- Short, even-length blue filaments



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***Triteleia laxa* complex (Form 2)**

- Bilaterally symmetric filaments
- Short, straight, upper filaments
- Long, upcurved lower ones (white, not blue)
- Fls often lgr and paler

***Triteleia laxa* complex**

(Form 2)



Viola adunca

- Any recent observations?



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Viola spp. (L)

- Several fragrant native woody violets
- White/pink/purple fls
- Discovered recently in SCR by Ray Collett



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Zeltnera (Centaurium) muehlenbergii?

- Increasingly common
- Somewhat weedy
- Keys to this sp.
- But ... ?





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