

## Field Characters of Some Mosses

Link to preliminary Bryophyte checklist for Jasper Ridge <http://jrpb.stanford.edu/db/plants/plantdb.php>

Images

<http://picasaweb.google.com/117610348423941339885/MossesOtherBryophytesAtJasperRidge?authkey=Gv1sRgCIqqgs-cx5vHcA&feat=directlink>

<http://www.csun.edu/~hcbio028/> Images of California . . .

*Alsia californica* (p.311) \* see Dan Norris note at end

*Anacolia menziesii* (p.194). Tufts of branched, yellow green stems with dense reddish rhizoids (like felt). Roadbanks and seasonally moist rock walls.

*Bestia longipes* (p. 12). Like *Dendroalsia* but on sandstone boulders at JRBP in shaded riparian drainages, and capsules are usually lacking. See comments for *Dendroalsia*. *Bestia* often grows near by *Pterogonium* but tends to occupy moister and more shaded parts of same boulder face.

*Brachythecium albicans* (p.259). Pale yellow green mats of creeping stems, more or less julaceous. Soil, leaf litter, and thin soil over shaded rock. This moss can be confused at arms length with both *Homalothecium arenarium* and *Scleropodium touretii*, and all are members of the same family.

*Bryum argentium* (p.166). Whitish or silvery green tufts of erect shoots. Soil rock or gravel esp disturbed sites.

*Dendroalsia abietina* (p.302). The dry plants curve down in a distinctive manner when dry (the branches curve and fold downward concealing the capsules -- p.9), and when wet they appear flat like a feather. Paraphylla leaf-like structures cloak the branches under the true leaves are common, but are lacking in both *Bestia* and *Pterogonium*.

*Didymodon vinealis* (p.127). Common. Turfs or cushions of erect, sparsely branched stems. Lvs oval-lanceolate or more commonly long lanceolate, twisted when dry; generally with a reddish cast. On soil or rock. Often on boulders in serpentine.

*Eucladium verticillatum* (p.129) Dense tufts on wet rocks of calcareous springs, seeps, streambanks. Clearly seen in seeps below dam.

*Fissidens crispus* (p.84; key p.317 "lvs in 2 ranks"). Seasonally moist clayey soils along trails and roadbanks. One of only two genera likely to be found at JRBP with 2-ranked leaves. The second *Bryolawtonia* hasn't yet been found. JS refers to the Iris-like lvs but this is confusing and sometimes only apparent for lowest leaves.

*Grimmia* V-shaped lvs in cross-section; lf tip with a long hyaline hair point. *G. pulvinata* often found on concrete or calcareous rocks.

*Homalothecium* spp. (p.263). Dirty yellow-green shag-carpet when dry. Creeping (irregularly branched) stems flat to substrate at edges of its mossy mass.

*H. arenarium* on soil and litter.

*H. nuttallii* on logs, tree trunks and boulders.  
*H. pinnatifidum* on tree trunks

*Isothecium myosuroides* abundant on soil, rock, rotting wood, trees. But how to ID? [Gestalt](#)

*Leucolepsis acanthoneura* (p.177). **Little Palm Trees** (i.e., dendroid) with white (actually hyaline, i.e., transparent) scales on shoots below leaves. Photo: <http://www.csun.edu/~hcbio028/LeAcanthoneura.jpg>

*Phascum cuspidatum* epemeral moss on dirt with reddish capsule in among lvs; Trail b

*Polytrichum jumiperinum* (p. 38) erect **little trees** with white-tipped leaves (reddish in sun); soil & rock in sun or shade

*Pterogonium gracile*. (p.305). Birds-foot appearance when dry. See comments for *Bestia*.

*Scleropodium obtusifolium* (p.274). Mats or tufts of irregularly branched stems on boulders and rock walls of streams or intermittent streamlets; sometimes on exposed tree roots. On serpentine boulders along and in SF Creek, Trail 1. Has the gestalt when hydrated of *Homalothecium* but the stems are julaceous (lvs crowded and appressed against the stem and overlapping each other).

*Scleropodium touretii* (p. 275). Common on soil and rock away from streams (e.g., along Trail 5 bank). Less julaceous and lighter green color than above.

*Syntrichium* sp. On blue oak seen on Trail b

## Liverworts

*Fossonbronnia* sp. **Romaine Lettuce** liverwort. A simple thallose liverwort on soil, need spores to determine species.

*Lunularia* sp. almost always has crescent shaped receptacles that hold asexual reproductive bodies called gemmae. Abundant along Trail 9 in holly-leaved cherry zone. Gemmae present 1/19/2011 [http://en.wikipedia.org/wiki/Gemma\\_\(botany\)](http://en.wikipedia.org/wiki/Gemma_(botany))

*Porella bolanderi* (Austin) Pearson [Porellaceae]

*Porella*, a large nearly cosmopolitan but mainly east Asian genus, is the most common of the leafy liverworts found in the Santa Monica Mountains (the other being *Cephaloziella*). Elsewhere the plants may grow on soil or trees but in the Santa Monica Mountains they seem to prefer mostly vertical rock faces, forming often large patches. The species of *Porella* are often difficult to identify because of their plasticity which makes several of them nearly fade from one to the next.

*Riccia* sp. near small serpentine rocks embedded in Road F at west end.

*Riccia trichocarpa* (liverwort) is perhaps the most distinctive of the local *Riccia* for its long hairs lining the thallus margins. Growing with *Fossonbronnia* sp. Romaine Lettuce liverwort on unnamed spur trail off Rd F near intersection with Rd E. A simple thallose liverwort on soil, need spores to determine species.

## Hornworts

*Phaeoceros* spp. Sporophytes look like small blades of grass. [http://en.wikipedia.org/wiki/File:Phaeoceros\\_laevis.jpg](http://en.wikipedia.org/wiki/File:Phaeoceros_laevis.jpg)

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\* *ALSIA CALIFORNICA*: A Bay Area Moss of Ecological Interest

There are about 750 species of bryophytes (mosses, liverworts, and hornworts) in California, more than in any other state of the Union. My 56 years of moss study have given me favorite stories about mosses, in part because of their ecological interest, but mainly because of their beauty. What is my favorite moss of the Bay Area? My choice could be *Alsia californica*. This large and conspicuous moss grows mostly on the trunks of various broad-leaved trees in the Bay Area, but northward it becomes increasingly restricted to alder forests of northern California. In Oregon it is encountered on such mainland sites as coastal apple orchards, and it is regularly found on offshore islands with sea bird rookeries. In Washington State and British Columbia, it seems mostly restricted to the very scattered oak forests.

*Alsia californica* is one of about 32 species of "julaceous" mosses in California--plants with deeply concave leaves so closely inserted around the stem that that leafy stem appears almost worm-like. The plants with this life form are not necessarily closely related, but these plants may be difficult to identify because of great similarities. Throughout the world, I need only to be shown a species list for me to conclude that the list is a description of an area with a Mediterranean climate (maximum rainfall in winter with almost no precipitation in the summer). It appears that there must be an advantage to a julaceous condition when a moss is growing in Mediterranean areas.

In this regard it must be remembered that mosses have no root system and must get all their water from drops or mist, absorbed immediately on contact with any part of the moss. It grows with stems closely arranged and defining capillary spaces for water distribution inside the leaf concavities. Leaves having smaller leaf-like structures (paraphyllia) further subdivide the capillary space in the concavity. The localization of water storage in the area defined by the angle between the leaf and stem allows a feature advantageous to photosynthesis in these mosses. Photosynthesis in mosses is restricted by the relative inability of carbon dioxide to pass through a film of water. The julaceous condition allows a moss to take in carbon dioxide through the outer cell surface while storing that water between the inner cell surface and the stem. Some mosses in the Mediterranean climate of the Bay Area have solved the problem of how to take in carbon dioxide while storing relatively large amounts of water in the stem-leaf complex --Dan Norris



**Mosses & other Bryophytes at Jasper  
Ridge**