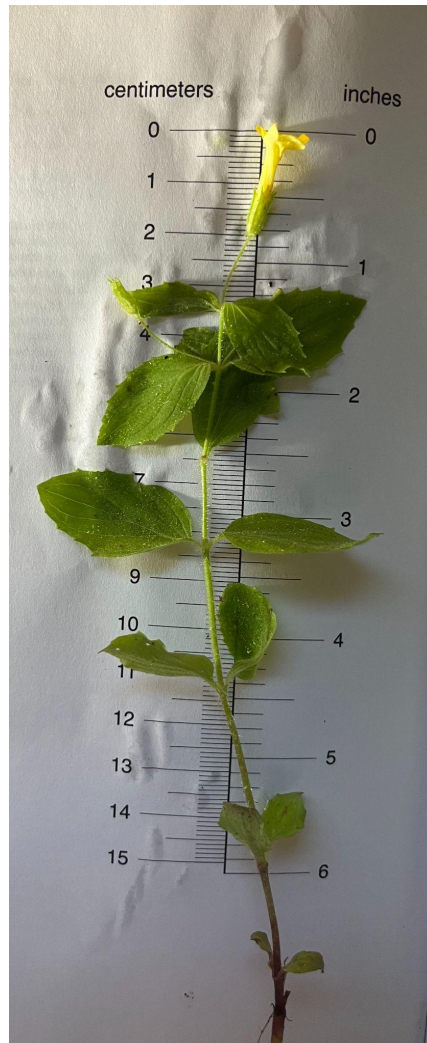
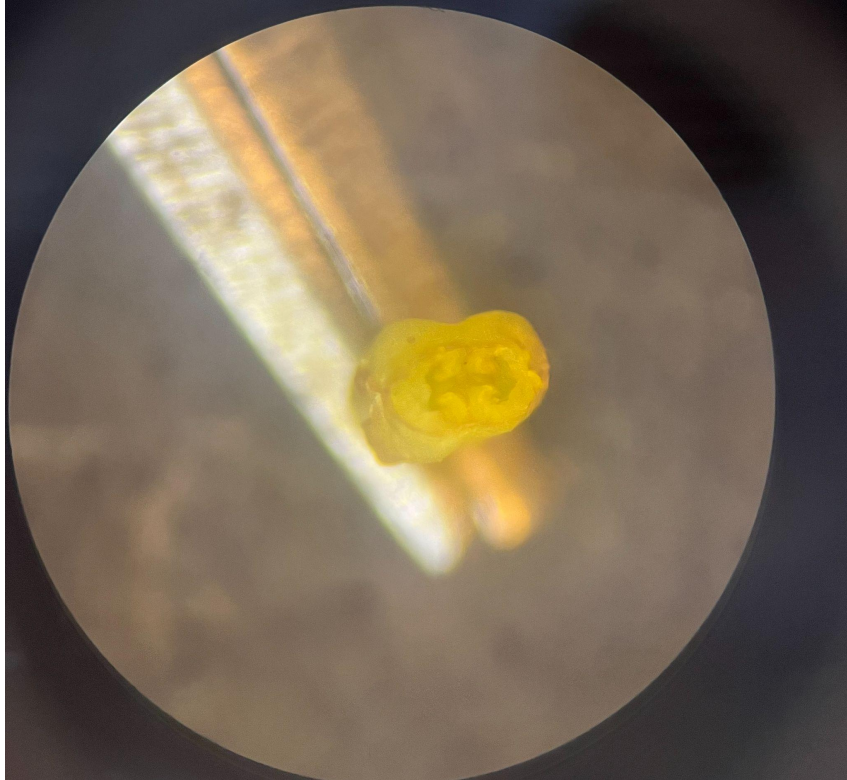


## ***Mimulus moschatus***

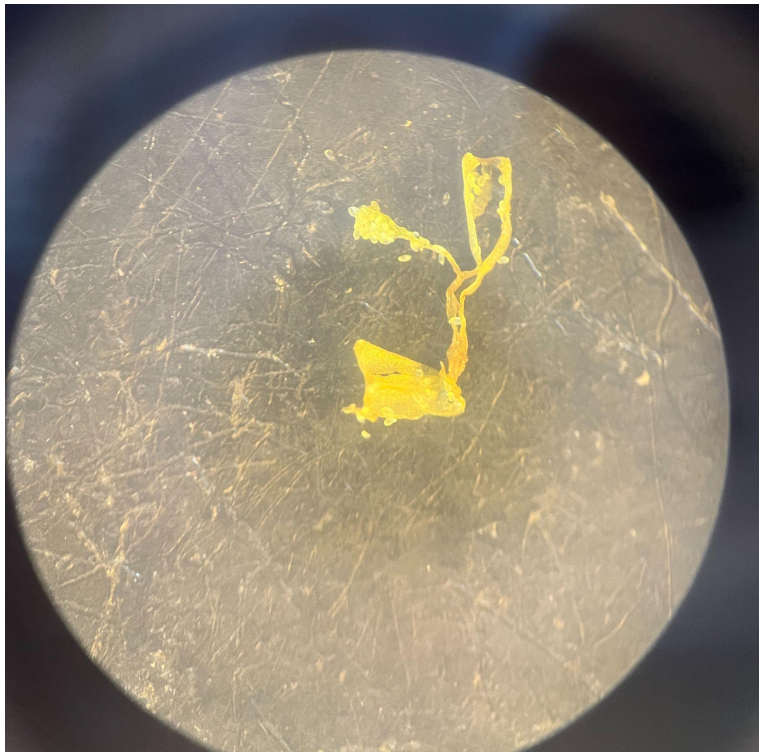
- Pedicel  $\text{gen} > \text{calyx}$ ; corolla  $\text{gen}$  deciduous; placenta axile, fused, not parted by fr dehiscence



An *M. moschatus* specimen showing the character of the pedicel being greater in length than the calyx. The flower lower down lacking the corolla also displays the deciduous corolla character. Photo AB.



An *M. moschatus* ovary with a transverse section, showing the axile placenta morphology. An axile placenta is a type of placenta that is borne along the central axis in a compound ovary with more than one chamber. This ovary is separated into two chambers. Photo AB.



An *M. moschatus* ovary with a longitudinal section, showing the axile placenta morphology. In this photo the central placenta axis is exposed and separated from the surrounding ovary wall. Photo AB.

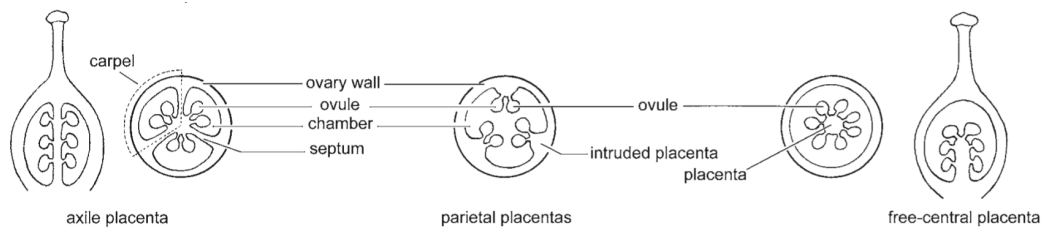


Image from the Jepson Manual showing the types of placenta morphology, for comparison of the above photos.

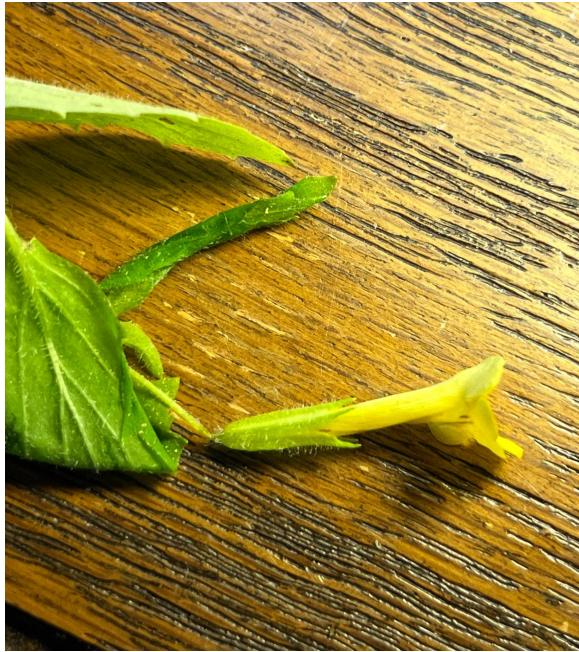
- **Gen ann; corolla color various, incl yellow; if per, corolla yellow**



Closeup of an *M. moschatus* flower showing the yellow corolla. Photo AB.

- **Calyx in fr not or symmetrically swollen, lobes gen  $\pm$  equal or lowest 2 longest, not upcurved; corolla yellow or not, lower lip base not swollen, not closing mouth**





An *M. moschatus* flower showing the calyx lobes being equal. Photo AB.



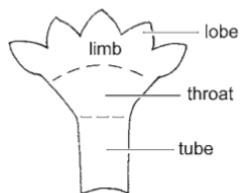
An *M. moschatus* corolla with the lower lip base not swollen and not closing the mouth of the corolla. Photo AB.



- Calyx lobes << tube; pl glabrous, puberulent, or hairs  $\pm$  straight



An *M. moschatus* specimen displaying the feature of the calyx lobes being less in length than the calyx tube. The straight hairs are also visible on the plant foliage. Photo AB.



**tube.** (p. 26) In calyces or corollas with fused sepals or petals, the often more or less cylindric, fused portion at the base, proximal to the throat and limb.

Photo image and definition of a tube from the Jepson Manual glossary.

- Per; stolons or rhizomes present

- Calyx  $\pm$  glabrous to hairy; If pinnately  $\geq 5$ -veined



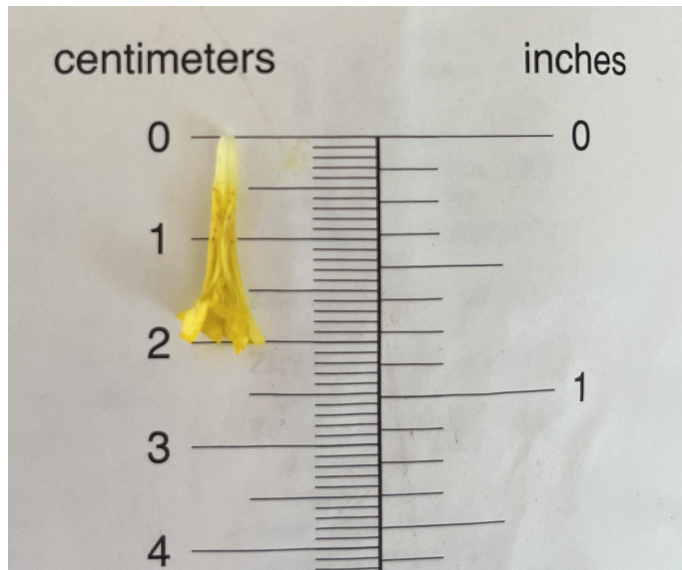
Closeup of an *M. moschatus* calyx showing it is hairy. Photo AB.



*M. moschatus* leaves showing the trait of being pinnately  $\geq 5$ -veined. The leaf to the left is showing the abaxial surface and the leaf to the right is showing the adaxial surface.



- **Corolla tube-throat 15–26 mm, tube  $\pm$  cylindric, 2–4 mm wide exc at mouth**

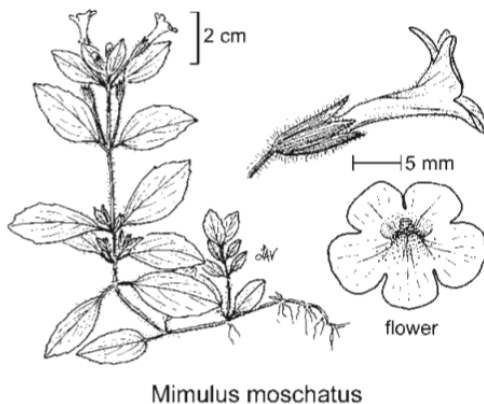


An *M. moschatus* corolla showing the tube-throat length being in the 15-26 mm range, with this specimen's tube-throat length being about 17 mm in length. Photo AB.

*M. moschatus* Lindl. (p. 999) MUSK MONKEYFLOWER Per, rhizomed,  $\pm$  glabrous to densely slimy-hairy, gen musk-scented. **ST**: 5–30 cm, prostrate to ascending. **LF**: petiole 0–15 mm; blade 10–60 mm, oblong to ovate, pinnately  $\pm$  5-veined. **FL**: pedicel 10–50 mm; calyx 8–12 mm,  $\pm$  glabrous to hairy, lobes equal, 2–5 mm; corolla yellow, tube  $\pm$  cylindric, 2–4 mm wide exc mouth, tube-throat 15–26

mm, throat floor deeply grooved; placentas axile. **FR**: 4–9 mm.  $2n=32$ . Common. Seeps, streambanks, gen partial shade; < 2900 m. CA-FP, GB; to BC, Rocky Mtns; naturalized in ne US, Chile, Eur. Jun–Aug

*M. moschatus* species description from the Jepson Manual



Mimulus moschatus

*M. moschatus* species illustration from the Jepson Manual

***Mimulus primuloides* var. *primuloides*.**

- Pedicel gen > calyx; corolla gen deciduous; placenta axile, fused, not parted by fr dehiscence



A *Mimulus primuloides* var. *primuloides* specimen showing the characteristic of pedicel greater than calyx, as well as its rosette growth form. Photo AB.

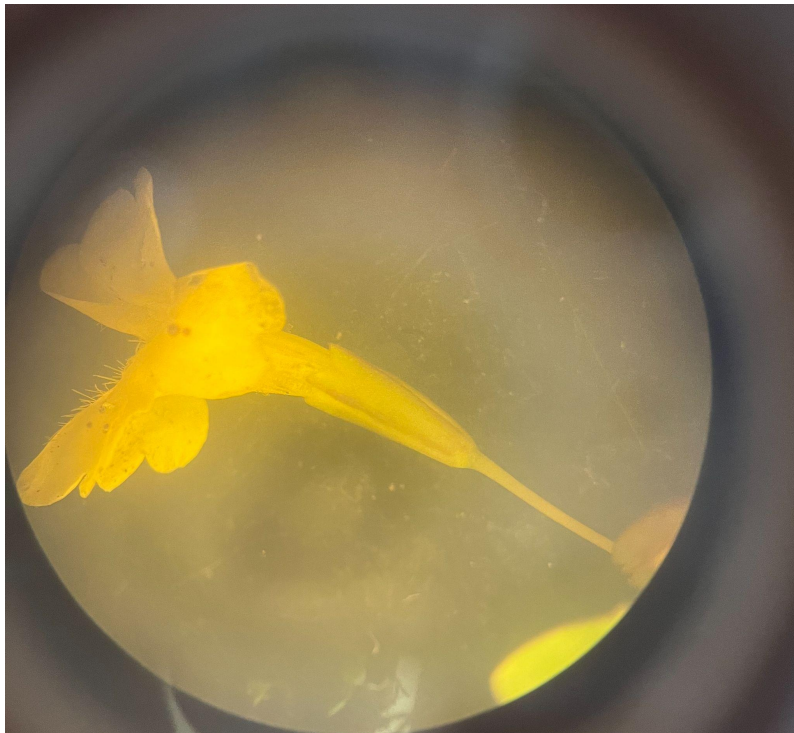
- Gen ann; corolla color various, incl yellow; if per, corolla yellow





The *Mimulus* specimen with rhizomes, indicative of a perennial growth form. The corolla also matches the description, if perennial, corolla yellow.

- **Calyx in fr not or symmetrically swollen, lobes gen  $\pm$  equal or lowest 2 longest, not upcurved; corolla yellow or not, lower lip base not swollen, not closing mouth**

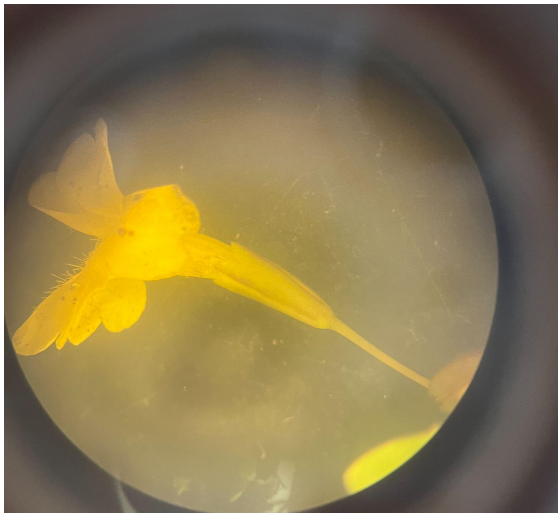


A closeup showing the symmetry of the calyx and the lobes being more or less equal. Photo AB.



A closeup of the yellow corolla with the lower lip base not swollen, and not closing the mouth. Photo AB.

- **Calyx lobes << tube; pl glabrous, puberulent, or hairs  $\pm$  straight**



A closeup photo of the calyx showing the calyx lobes being less in length than the calyx tube. Photo AB.



- Per; stolons or rhizomes present
- Calyx glabrous; lf palmately 3-veined
- Lvs oblong to obovate, gen  $\pm$  spreading in  $\pm$  distinct rosettes



An *M. primuloides* plant showing the morphology of the leaves palmately 3-veined. The leaves are oblong to obovate and are in distinct rosettes. Photo AB.

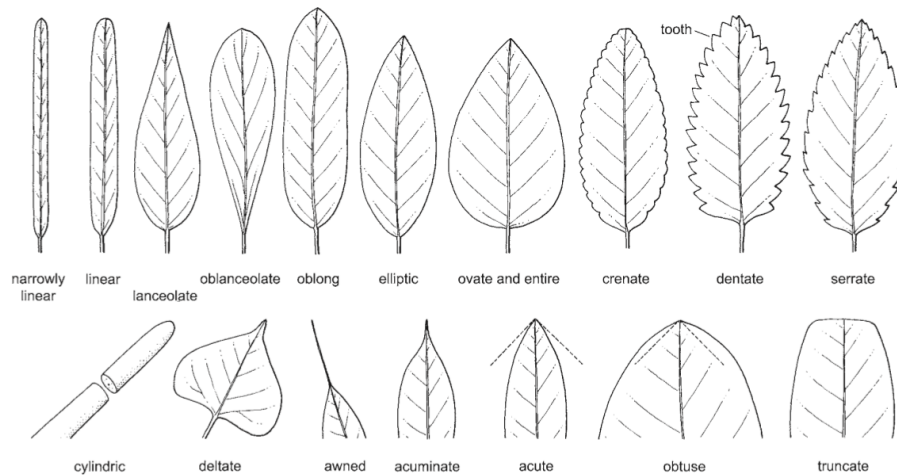
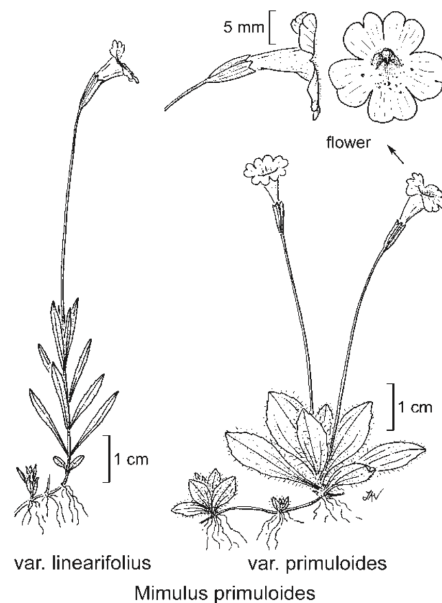


Illustration from the Jepson manual of leaf morphology. The leaves of *M. primuloides* var. *primuloides* were oblong to obovate. Obovate means ovate, but with the pattern reversed so that the widest portion of the leaf is at the tip, instead of the base.

***M. primuloides*** Benth. Per; rhizomes or stolons forming mats of  $\pm$  distinct rosettes or tufted pls; forming bulblets in fall. **ST**: glabrous. **LF**: adaxially glabrous to densely long-hairy; palmately 3-veined. **FL**: pedicel 10–120 mm, stiffly erect; calyx glabrous, lobes equal, 0.5–1.5 mm; corolla yellow, tube-throat 8–20 mm, base of lower lip lobes gen red-spotted; placentas axile. **FR**: 6–7 mm.

var. ***linearifolius*** A.L. Grant (p. 999) **ST**: 4–12 cm, tufted. **LF**:  $\pm$  erect, some  $\pm$  basal but not in rosettes, 15–50 mm, linear to oblanceolate. **FL**: calyx 7–12 mm. Wet meadows, seeps, streambanks; 600–2200 m. KR. [*M. p.* subsp. *l.* (A.L. Grant) Munz] Jul–Aug

var. ***primuloides*** (p. 999) **ST**: 0.5–4 cm. **LF**: gen  $\pm$  spreading in  $\pm$  distinct rosettes, 7–35 mm, oblong to obovate. **FL**: calyx 5–9 mm.  $2n=34$ . Wet meadows, seeps, streambanks; 600–3400 m. NW, CaR, SN, WTR, SnBr, SnJt, GB; to WA, NV. If recognized taxonomically, occ small, hairy pls (of e.g., Echo Summit, El Dorado Co.) assignable to *M. primuloides* var. *pilosellus* (Greene) Smiley but variation  $\pm$  continuous. Jun–Aug



*M. primuloides* species description and illustration from the Jepson Manual.

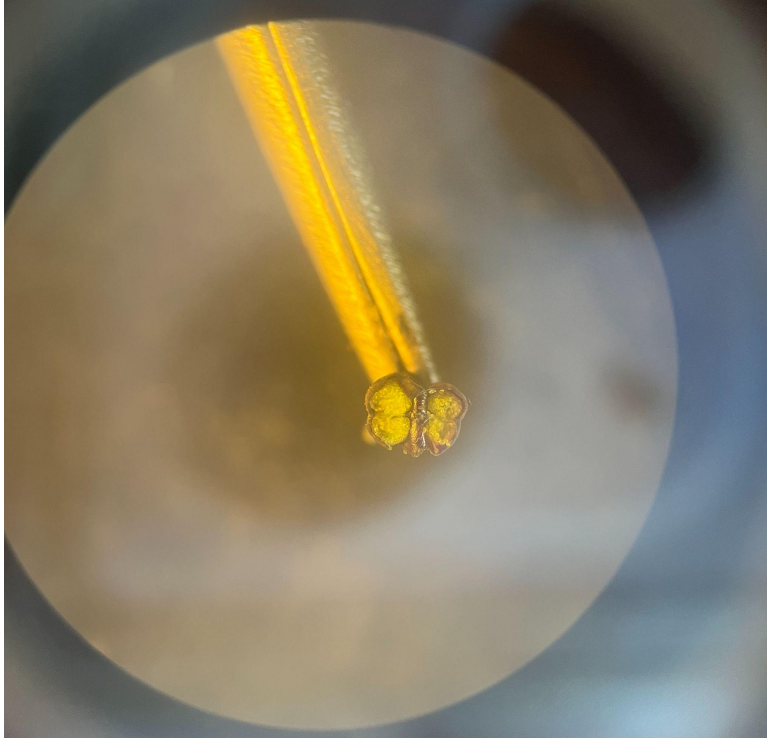
## ***Mimulus guttatus***

- ***Pedicel* gen > *calyx*; *corolla* gen deciduous; *placenta* axile, fused, not parted by fr dehiscence**



A *Mimulus guttatus* plant showing the the pedicels as greater in length than the calyx, generally. Photo AB.





A *Mimulus guttatus* ovary as with transverse section and split open, showing both halves. The placenta is axile. The ovary is compound with two chambers. Photo AB.

- **Gen ann; corolla color various, incl yellow; if per, corolla yellow**
- **Calyx in fr strongly, asymmetrically swollen, uppermost lobe longest, lowest 2 gen upcurved; corolla yellow, lower lip base gen swollen,  $\pm$  closing mouth**



Photos of *M. guttatus* showing the calyces as asymmetrically swollen, with the uppermost lobe longest and the lowest two upcurved. Photo AB.



An *M. guttatus* flower showing the corolla yellow, with the lower lip base swollen and more or less closing the mouth  
Photo AB.

- **Bracts or lvs subtending fls not a round disk, petioled or only base encircling st, not glaucous**



*M. guttatus* stem with leaves petioled, not a round disk or encircling stem. The stem is glabrous, not glaucous.  
Photo AB.



- Lvs not pinnately lobed or dissected, but base occ irregularly dissected or lobed
- Bracts or lvs subtending fls ovate to cordate or round, occ fused at base around st



*M. guttatus* stem with ovate leaves. The leaf margins are entire, not lobed or dissected.

- Fls gen > 5 per st, in a bracted raceme, cleistogamous or not, corolla tube-throat 2–40 mm; ann or per



An *M. guttatus* stem showing the flowers as more than five per stem, in a bracted raceme. This specimen had approximately 9 flowers per stem.





An unopened flower, which may represent a cleistogamous flower. Photo AB.







