

Solenostoma schusterianum (J.D. Godfrey & G. Godfrey) Váňa, Hentschel & Heinrichs

David H. Wagner
Northwest Botanical Institute
PO BOX 30064
Eugene, OR 97403

Synonym: *Jungermannia schusteriana* J.D. Godfrey & G. Godfrey

Special Status: None. Not found in Oregon yet but known from British Columbia to California

Recognition: Strictly aquatic on rocks in small streams; leaves dark green, ovate to rounded subtriangular, nearly transversely inserted, cupped at base and only shortly decurrent; oil bodies few, fusiform. 3X chloroplasts, 2 (3) per cell, mostly botryoidal (Godfrey and Godfrey 1979; not seen in local material).

Distribution: On rocks in streams at high elevations, submerged. Originally described from British Columbia, it has recently been found in California and can be expected to be found in Oregon.

Comments: The closest look-alikes are *Jungermannia eucordifolia* and *Solenostoma fusiforme*. From both it can be distinguished by the presence of flagelliform branches. Like *Jungermannia eucordifolia*, its leaves tend to be widest near the base, broadly rounded triangular. Although *Solenostoma schusterianum* has been characterized as being distinguished by botryoidal oil bodies, there is variability in this character in all three. In particular, the oil bodies of *Solenostoma fusiforme* are prominently botryoidal.

Like other perennially submerged aquatics, reproductive organs are rarely seen. Because traditional keys like these are based on features of reproductive organs, it cannot be keyed out easily. It must first be learned from studying fresh material, pictures and herbarium specimens.

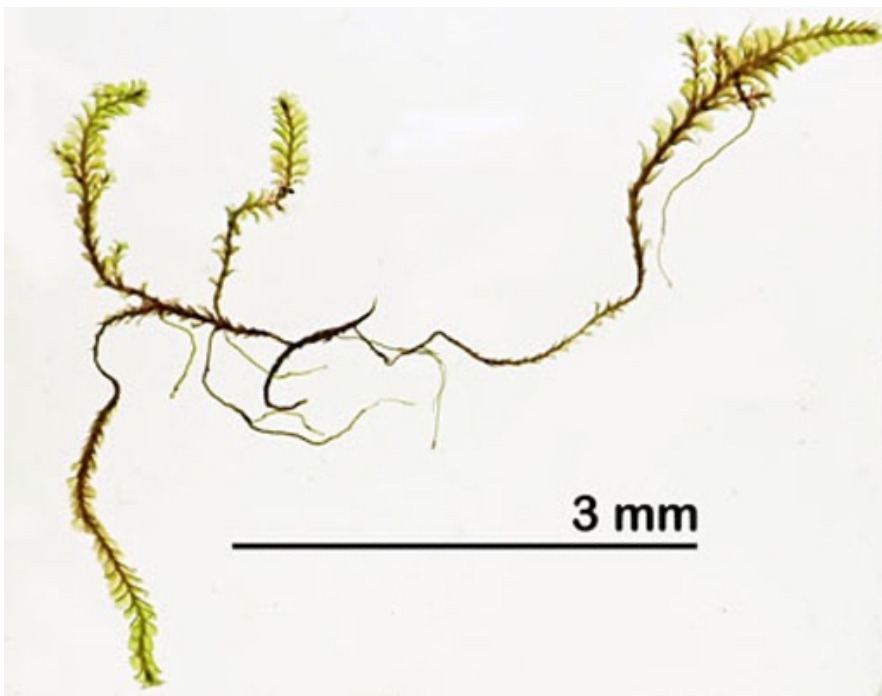
This species is obviously closely related to the near look-alikes in *Jungermannia s.l.*. They appear to me to be clearly in the same genus based on traditional taxonomic observations. However, all of them have appeared in either *Jungermannia*, *Solenostoma*, or *Plectocolea* in recent literature (Stotler and Crandall-Stotler 2017). The phylogenomic studies on which various taxonomic treatments are based are not consistent, and cannot be considered reliable. Using *Solenostoma schusterianum* here recognizes the Stotler and Crandall-Stotler (2017) recommendations.



Shoot, dorsal aspect. Siskiyou County, California. Shevock 57753 CAS.

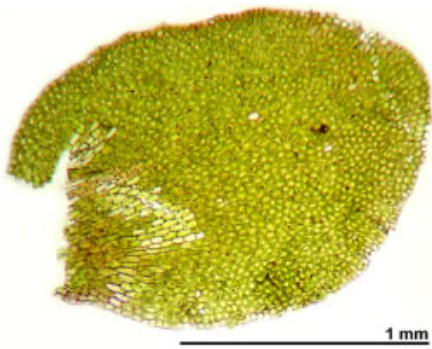


Shoot, ventral aspect. Siskiyou County, California. *Shevock 57753 CAS*.

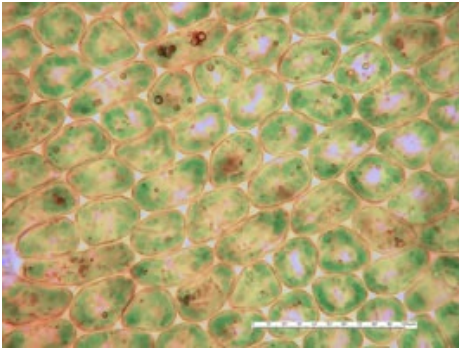


Single shoot with flagellae. Siskiyou County, California. *Shevock 57753 CAS*.

Leaf. Siskiyou County, California. *Shevock 57753* CAS.



Median leaf cells. Siskiyou County, California. *Shevock 57753* CAS.



Literature Cited

Godfrey, J.D. and G.A. Godfrey. 1979.

Jungermannia schusteriana, A new hepatic from the Pacific coast of North America. *Journal of the Hattori Bot. Lab.* 46: 109-117.

Stotler, R. and B. Crandall-Stotler. 2017.

A Synopsis of the Liverwort Flora of North America North of Mexico. *Ann. Missouri Bot. Gard.* 102: 574-709.