

Perspectives and Comments

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[This is the third essay in an invited three-part series by Janice Glime about the biology of stream mosses]

**Adventures with stream mosses – A *Fontinalis* point of view**

**Part III: Surviving the flow**

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As mentioned earlier in this series, living in moving water can both solve problems and create others. One of the major problems in fast water is surviving the drag and abrasion created. Hence, a major problem is the ability to stay put. But the bryophytes also face destruction and breakage from those sudden cloudbursts or spring melt waters. In this regard, *Fontinalis antipyretica* var. *gigantea* is ill-equipped to survive. It has large leaves with keels (Figure 1, left), giving it an exposed soft edge on each leaf that soon results in a 2-parted leaf as the keel is worn away. And its stem (Figure 2, left) is weak compared to the common mountain stream species. Likewise, *Fontinalis flaccida* (Figure 1, right) has weak stems (Figure 2, center) and in my limited experience with the species I have found it confined to lakes and pools of streams – habitats that can also have *F. antipyretica* var. *gigantea*. On the other hand, *Fontinalis dalecarlica* has very stiff stems, thick cell walls, and lots of phenolic coloration (Figure 2, right). I could recognize this moss by feel because it feels like a wire brush in my hands.



**Figure 1.** *Fontinalis antipyretica* var. *gigantea* (left), showing keeled leaves that are easily torn in rapid water. *Fontinalis flaccida* (right), with perigonia, showing narrow leaves with tattered ends, but not keeled, and undivided.