

A rare lichen, *Umbilicaria hirsuta*, pioneers an old trailer in Montana

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Abstract. *Umbilicaria hirsuta* colonized an old travel trailer parked in a pasture in western Montana, U.S.A. Although the species has been reported several times from Montana, beginning with Llano (1950), all of the previous reports were based on the same initial record from Glacier County on the east side of the Continental Divide in Glacier National Park (McCune et al. 2014).

During the first COVID-19 summer (2020), we took advantage of a lull in the pandemic to go car camping and exploring for two weeks in western Montana. During that trip we visited an old friend living in the hills on the west side of Flathead Lake. This ecosystem of grasslands, pastures, *Pinus ponderosa* savanna, and occasional piles of boulders had plenty of lichens, but the most interesting ones grew on the south side of an old fiberglass trailer parked for many years in a pasture (Figs. 1, 2), with only a few small trees nearby providing limited shelter. I was surprised to find two relatively rare species in abundance there, *Umbilicaria hirsuta* and *Umbilicaria decussata* in the broad sense, growing directly on the south side of the trailer (*U. hirsuta*: U.S.A. Montana: Lake Co., hills above Flathead Lake near Rollins, 955 m, 21 July 2020, McCune 38787, OSC).

Umbilicaria hirsuta seems to be common nowhere in North America, yet it has a very wide distribution and occurs as sprinklings of isolated localities from Maine to Oregon and the Arctic to Mexico (McCune & Geiser 2009). We have previously sequenced two populations (McCune 2018): Oregon (*Sheehy 909*, OSC), South Dakota (*Zimmerman 14-001*, OSC) and deposited these sequences in GenBank. Together with pre-existing sequences in GenBank, these form a monophyletic group (McCune 2018).

Umbilicaria hirsuta is the only sorediate species of *Umbilicaria* in North America. The species is medium-sized, with a light gray-brown upper surface with a rough texture and margins turned under (Fig. 2); see illustrations of details in Kofranek and McCune (2008) and McCune and Geiser (2009). The lower surface is pale to dark and rhizinate. The soredia develop from the disintegration of the upper cortex close to the recurved margins. Because the soredia are rather diffuse and often sparse, they can easily be overlooked.

The species has been reported several times from Montana, beginning with Llano (1950), but all of the previous reports (McCune et al. 2014) were based on the same initial record on the east side of the Continental Divide in Glacier National Park (Glacier County: route to Sun Point, 1350 m, *W. R. Brinsfield s.n.*, 1 August 1948). That specimen, originally in Llano's herbarium, now resides in MIN, but was filed under *Umbilicaria vellea*, redetermined by Clifford Wetmore in 1970. Photos provided by Daniel Stanton clearly demonstrate that the specimen is not *U. hirsuta*, but instead does belong to the *U. vellea* group (either *U. vellea* or *U. americana*). Perhaps the upper surface being browner than is typical for the *U. vellea* group led Llano (1950) to misidentify the collection.

Because the usual habitat of *U. hirsuta* is on somewhat sheltered rock faces, its occurrence on the side of a fiberglass trailer in an exposed habitat was surprising. Yet even in this case the species favored microsites just below horizontally protruding ridges in the siding (Fig. 2). Associates were a number of crustose species, unfortunately not recorded or collected.



Figure 1. Fiberglass-covered travel trailer with *Umbilicaria hirsuta* and *U. decussata* as dominant colonizing species on the south side. Arrow indicates location of detail photo in Figure 2.



Figure 2. Detail of population of *Umbilicaria hirsuta* on side of trailer in the slight shelter provided by a horizontal ridge in the siding.

As for the difference between fiberglass and rock, they certainly differ in their physical properties such as heat capacity and porosity. But saxicolous lichens often surprise us in their colonization of human-made surfaces; for example, this old leather boot on a pile of rocks nearby (**Fig. 3**).



Figure 3. Remnants of a nearby slow-moving cowboy, with saxicolous species *Lecanora muralis*, *Candelariella* sp., the moss *Grimmia*, and others.

Where and when the species arrived on the trailer is a mystery. The trailer had been parked in the same general vicinity for 25 years, except when taken on infrequent road trips. The only time it was out-of-state for any length of time was when it was taken to Arizona for the winter sometime in the late 1980's. Regardless of the origin of the population, clearly it is thriving in this location.

Chance favors a prepared mind: after 30 years of not seeing this species in Montana I had found it on a trip the year earlier (U.S.A. Montana: Sanders Co., argillite cliffs and talus, above and east of Clark Fork River and Montana Highway 135, sheltered outcrop, August 2019, *McCune* 38387, OSC). Now your mind is prepared, and your concept of potential habitats expanded, so I think that many other locations for Montana are imminent.

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