SPECIES FACT SHEET

Common Name: crinkled rag lichen
Scientific Name: *Platismatia lacunosa* (Ach.) Culb. & C. Culb.
Kingdom: Fungi
Division: Ascomycota
Class: Ascomycetes
Order: Lecanorales
Family: Parmeliaceae
Genus: *Platismatia* Culb. & C. Culb.
Synonym: *Cetraria lacunosa* Ach.

Technical Description:
Platismatia lacunosa is a medium to large foliose lichen, 5-16 cm broad, roundish, and appressed to suberect with edges free. The lobes are 0.6-1.5 cm broad. The upper surface is very pale greenish-gray to light grayish or almost white, the margins conspicuously darkening. It sometimes becomes browned at exposed sites, and is uniformly brown or tan in old herbarium specimens. It is prominently ridged by strong reticulations rising at right angles to the surface, and does not have pseudocyphellae (small holes in the cortex). The lower surface is black at the center, chestnut brown at the margins, and often mottled with white; it is somewhat reticulately wrinkled, not punctate, and has a few black rhizines. Isidia and soredia are lacking, but black, embedded pycnidia are found along the thallus margins. Apothecia are occasional to common, marginal to submarginal, with large, folded, brown disks 4-20 mm in diameter; spores eight per ascus, ellipsoid to ovoid, 7-10 x 3-4.5 microns. Pycnidia marginal to submarginal or even on the crests of the reticulations, the ostiole round to irregular at maturity. The photobiont is green algal (Brodo et al. 2001, Culberson & Culberson 1968, McCune & Geiser 1997).

Chemistry
Cortex K+ Y; medulla K-, C-, KC-, PD+ orange-red. Contains fumarprotocetraric acid, caperatic acid (at least in some specimens), and atranorin (Brodo et al. 2001; Culberson & Culberson 1968; McCune & Geiser 1997).

Identification Tips
Platismatia lacunosa is distinguished by its strong network of ridges and depressions, which are often visible from several feet away. It also has relatively wide lobes, and isidia and soredia are absent. The pycnidia, however, can be either protruding or stalked, and are sometimes mistaken for isidia (McCune & Geiser 1997). This species is usually more appressed to the substrate than other *Platismatia. Platismatia lacunosa* is usually on the branches, and occasionally the trunks of conifers and hardwoods, particularly alder. Associated lichen species often include *Menegazzia terebrata* and *Hypotrachyna sinuosa* (McCune & Geiser 1997).

Similar Species

"*Cetrelia* always have pseudocyphellae, are usually sorediate, and usually react C+ or KC+ *(P. lacunosa* medulla is C- and KC-). *Cetrelia* also never have the strong network of ridges and depressions characteristic of *P. lacunosa.*

Platismatia lacunosa could be mistaken for a *Lobaria* based on its slightly thicker, glossier texture that is more common in *Lobaria* (other *Platismatia* tend to have a paper-like texture). Check the underside for the white/ tan/brown mottling typical of *Platismatia; Lobaria* will have characteristic more or less tomentose furrows surrounding raised white patches.

Parmotrema…[lack] rhizines at the lobe margins but usually [have] marginal cilia, which are never present in *Platismatia* (Brodo et al. 2001).

Platismatia glauca can resemble *P. lacunos*a, but has a less appressed growth form. *P. glauca* is "fluffy and disheveled" looking (McCune & Geiser 1997), and often has soredia or isidia or both. *Platismatia glauca* occasionally has a weakly ridged upper surface.

Platismatia norvegica is most easily confused with *P. lacunosa*; both have an appressed growth form, but the ridges in *P. lacunosa* are always stronger, and *P. lacunosa* is often almost white, where *P. norvegica* usually has a green tinge. The distinction between the ridges becomes apparent after seeing several thalli of both species. *P. norvegica* almost always has at least a few (more frequently many) isidia, predominantly on the ridges; pycnidia are [rare]. *P. norvegica* [has a PD- medulla], while [the medulla] of *P. lacunosa* is PD+ orange to red.

Platismatia stenophylla, like *P. norvegic*a, also lacks isidia or soredia, but has consistently narrower lobes (0.5-4 mm wide) that lack a network of ridges." (Derr et al. 2003)

Keys to Identification of the Species

Brodo et al. (2001), Goward et al. (1994) and McCune & Geiser (1997) all provide good keys, photographs, descriptions and line drawings of this and similar species. Photos of *P. lacunosa* and similar species are available in Derr et al. (2003).

Life History:

This species may be sexually reproductive at any time of year; apothecia are occasional to common, and not necessary for identification. It is visible and identifiable year-round, unless visibility is impeded by snow cover or inclement weather. The medium to large thallus can be seen on tree branches and boles from a distance.

Range, Distribution, and Abundance:

Globally, *P. lacunosa* is restricted to western North America, from coastal northern California, north through coastal Alaska and the Aleutian Islands (Brodo et al. 2001, Oregon Natural Heritage Information Center. 2006b).

In Oregon and Washington, this species is uncommon in moist, oceanic climates west of the Cascade crest. According to McCune and Geiser (1997), this is the rarest *Platismatia* in the Pacific Northwest. It is never abundant at sites where it does occur (Derr et al. 2003).

Platismatia lacunosa is documented from the Olympic Peninsula, Western Washington Cascades, Oregon Coast Range, Western Oregon Cascades, and Oregon Klamath Physiographic Provinces. In Washington, it is known from the Olympic, Mount Baker-Snoqualmie, and Gifford Pinchot National Forests; in Oregon, it occurs on the Mount Hood, Willamette, Siuslaw, Umpqua and Siskiyou National Forests and Salem, Eugene, Roseburg, and Coos Bay District BLM (Derr et al. 2003).

Habitat Associations:

In Oregon and Washington, *P. lacunosa* is uncommon on the boles and branches of hardwood and conifer bark in moist, cool upland sites as well as moist riparian forest in the Coast Range and Cascades. Elevations range from sea level to 3500 feet. It is most commonly found on *Alnus rubra*; other substrates include western hemlock, Sitka spruce, cherry, vine maple, big-leaf maple (U.S. Department of Agriculture 2006), and occasionally rocks in coastal forests (Brodo et al. 2001). Sites in the National Air Quality Database are primarily in the Western Hemlock Zone, but it also occurs in coastal stands (U.S. Department of Agriculture 2006).

Platismatia lacunosa often grows on the upper side of horizontal branches, especially hardwoods, adjacent to wetlands or lakes. It is more common in mature to old-growth forests, but it does occur in second growth forests with old-growth remnants or mature *Alnus rubra*. During a climbing survey in the Cobble Knob area of Roseburg District BLM, *P. lacunosa* was found high in the canopy of an old-growth conifer in a relatively cool, moist canyon near a riparian area (Derr et al. 2003). In a study which took place on seven Pacific Northwest forests (Umpqua, Willamette, Mt. Hood, Deschutes, Gifford-Pinchot, Siuslaw, and Winema), *P. lacunosa* was found twice as often in forests greater than or equal to 80 years old than those less than 80 years old (Edwards et al. 2004). However, this association with older stand ages was not statistically significant, possibly due to the small number of observations (it was found in 18 out of 840 plots) (Edwards et al. 2004).

Additional site-specific habitat information is available in the National Air Quality Database (U.S. Department of Agriculture 2006).

Threats:
The primary threat to this species is the removal of its substrate. Its main host trees are *Alnus rubra* and other hardwoods, which are often cut or burned during forest management activities.

Additionally, species is considered sensitive to air pollution (McCune and Geiser 1997).

Conservation Considerations:
Known populations could be protected by restricting removal of host trees and nearby habitat. Protection of riparian zones and wetland areas and retention of hardwood trees and shrubs would minimize habitat loss. Riparian and upland stands with a high proportion of hardwoods are important "hotspots" of lichen diversity, providing habitat for many species that are poorly represented in typical forests (Peterson & McCune 2003).

Other pertinent information:
Northwest Forest Plan Area survey protocols are available for this species (Derr et al. 2003).

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ATTACHMENTS:

1. **List of References**
2. **Sketch**
3. **Map of Range and Distribution in Oregon and Washington**

Attachment 1 – List of References

Brodo, I., Sylvia Sharnoff, & Stephen Sharnoff. 2001. Lichens of North America. New Haven, CT: Yale University Press. 795 pp.

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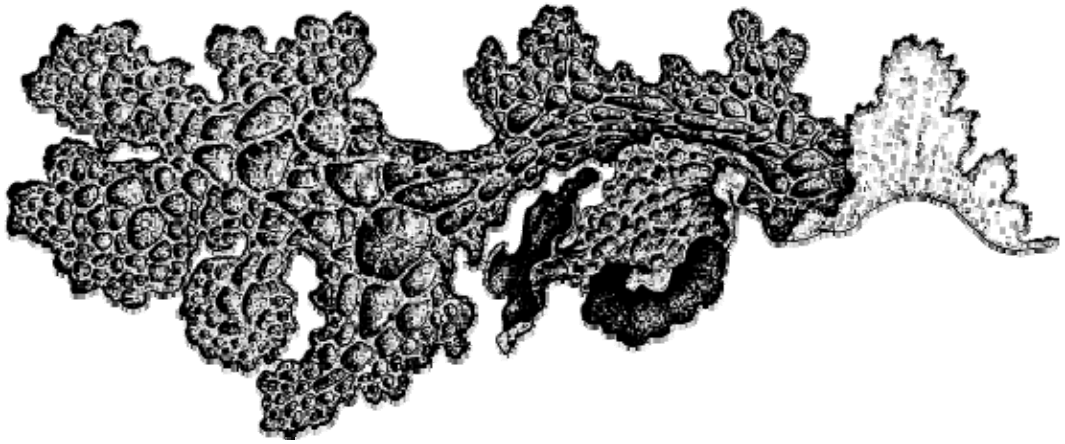
Attachment 2 - Sketch



by Alexander Mikulin
http://www.fs.fed.us/r6/aq/lichen/drawings.htm

Attachment 3 - Map of *Platismatia lacunosa* locations in Oregon and Washington from the GeoBOB database (Oct. 2006)