

## Key S – Pale-edged Brown Squamules, Apotheciatae

1a Squamules orange, pinkish orange, or brick red. Squamules medium-sized, generally 2-4(6) mm diam, flat to concave in the center; upper cortex partly pruinose or not pruinose; medulla usually K-, P- (in our area with no substances or trace of norstictic), rarely K+Y to R, P+O (norstictic); an acid-deficient chemotype is also common and widespread; a hyposalacinic acid chemotype is scattered throughout the range of the species; very common on highly calcareous, exposed soils, where it is almost always present

*Psora decipiens* (Hedw.) Hoffm.

[*Psora crenata* (Tayl.) Reinke, which occurs south of the Columbia Basin, is similar in some ways to both *P. decipiens* and *P. cerebriformis*, but is distinguished by the large squamules that are strongly depressed in the center and contain norstictic acid (K+Y to O, P+O). *Psora decipiens* also has a norstictic acid chemotype, but that species is arctic-alpine.]

1b Squamules some shade of brown or gray-pruinose over brown

2a Edges of squamules not pruinose but upturned and exposing the pale lower surface; thallus C+ pink, KC+R or pink (gyrophoric and lecanoric acids). Squamules 1-7(11) mm diam, concave with an ascending margin; upper surface pale to dark brown, often olive in the shade; apothecia dark brown to blackish, occasionally olive tinged; thallus containing gyrophoric and lecanoric acids; on soil or rock, usually associated with soil or moss over rock or rock crevices, often among mosses; widespread in western N Am, at all elevations in our area

*Psora nipponica* (Zahlbr.) G. Schneid.

2b Edges of squamules pruinose, upturned or flat; thallus C-, KC-

3a Apothecia reddish brown; thallus light to dark brown. Squamules 1-5(7) mm diam, pale brown to medium brown (to pale greenish brown when shaded), epruinose to distinctly white pruinose along the margin, convex to slightly concave; apothecia generally reddish brown to medium brown, convex and immarginate even when young; epihymenium K+R (like all *Psora* spp.); most common on HCl+ rock and on soil in crevices in HCl+ rock, but also on HCl- substrates; one of the most frequent *Psora* spp. in our area and throughout the West, especially on exposed calcareous soils and in rock crevices

*Psora tuckermanii* R. Anderson ex Tindal

3b Apothecia black; thallus dark brown, whitish, or greenish tan

4a Apothecia marginal. Squamules becoming strongly convex with numerous fissures, though occasionally slightly to deeply dimpled in the center, to 8 mm diam, variable in color from completely white pruinose on highly calcareous substrates to dull yellowish brown, olive brown, pale tan, or greenish tan on more acidic substrates; often forming thick mounds of squamules; thallus containing atranorin; widespread and common, especially on calcareous soils

*Psora cerebriformis* W. A. Weber

