Lichens from the South Slough and Horsfall Dunes on the Southern Oregon Coast

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Abstract. **Several notable lichens were found in the South Slough area near Coos Bay, Oregon, on a foray sponsored by the Northwest Lichenologists. A new record for *Bryoria bicolor* extends its southern range on the Pacific coast of North America, and information is presented on several other species, including *Scoliciosporum* sp., a little-reported, undescribed epiphyllous lichen.**

***Keywords. Bryoria bicolor, Cladonia prolifica, Leptogium insigne, Peltigera hymenina, Scoliciosporum* sp.**

INTRODUCTION

The Northwest Lichenologists, a non-profit group dedicated to furthering knowledge of lichens in the Pacific Northwest, encountered numerous interesting and rare lichens on a foray to the South Slough National Estuarine Research Reserve (SSNERS) and the Horsfall Dunes near Coos Bay, Oregon, in September 2008. The lichen flora of this large coastal natural area has never been thoroughly studied; since much of the unique coastal habitat of these lichens in Oregon and California has been destroyed by development, this area is a significant biological resource. Development is still a potential threat to these lichen communities, and more research

would inform creators of land-use policies to help ensure the persistence of these species on the North Spit and beyond. Brief habitat, taxonomic, distribution, or historical details are presented below for selected rare lichens that we encountered on the foray. Full lichen collection lists for each of the two sites follow the rare species summaries.

Bryoria bicolor is a maritime and subalpine species that occurs in scattered locations around the world, including northern Europe, Japan, Malaysia, and the Himalayas. In North America it is known from the Smoky Mountains in the southeastern United States, as well as a few mountainous places in the northeast, and on the west coast from Alaska to Oregon (Brodo & Hawksworth 1977). The South Slough is apparently the farthest south that it has been found on the Pacific coast of North America; previously it was reported from Cape Perpetua (pers. com. Doug Glavich), about 60 miles north of this location, and Cascade Head (McCune et al 1997), about 120 miles north of this location. It is reported here from an open stand of *Picea sitchensis* on a South Slough tidal flat.

Bryoria pseudocapillaris is a rare maritime lichen that is mostly restricted to the immediate coast in California, Oregon and Washington (Brodo and Hawksworth 1977; Glavich 2003; Glavich et al. 2005). Our specimens were collected from a stand of *Picea sitchensis* and *Pinus contorta* in the Horsfall Dunes area.

Bryoria spiralifera, a close and even rarer relative of *B. pseudocapillaris,* is endemic to the coast of Oregon and California (Brodo and Hawksworth 1977; Glavich 2003). The southern end of the Oregon Dunes Natural Resource Area, which includes the Horsfall Dunes, is an important site for B. spiralifera, second in abundance only to the Samoa Peninsula in Humboldt County, California (pers. com. Doug Glavich). Our specimens were collected from a stand of *Picea sitchensis* and *Pinus contorta* in the Horsfall Dunes area.

Cladonia prolifica is a rarely reported species occurring from British Columbia to northern California as well as in the Mediterranean region (Hammer 1995, Brodo and Ahti 1996). Similar at arm's length to the *Cladonia chlorophaea* group, it can be readily distinguished with a hand lens by the absence of soredia. The species range appears to be strongly coastal. Although Hammer (1995) reported it from Montana, he shows no points on his range map in Montana. He did, however, cite a location in Idaho. Like another rare species, *C. dimorpha*, *C. prolifica* commonly produces marginal proliferations from the cups, but it lacks squamules in the cups and the cups are commonly oblique. More searching along the coast is needed to determine its true rarity in the Pacific Northwest. Given the preponderance of records from the immediate coast, the few inland locations should be verified. Our specimen was growing on sandy soil in the Horsfall Dunes.

Erioderma sorediatum is a rare cyanolichen known in North America from the Pacific coast from Southeast Alaska to Southern Oregon. This species is also found in New Zealand (Galloway and Jørgensen 1975). In Oregon nine sites are known, all in the coastal fog zone; all but one site are in stabilized coastal dune habitats on the immediate coast (Glavich et al 2005, McCune et al 1997).

Heterodermia leucomela is a widespread species of tropical affinity that reaches the northern limit of its North American range along the Pacific coast in British Columbia (Goward et al. 1994). In Oregon *H. leucomela* is rare and restricted to the immediate coast. Despite its rarity, *H. leucomela* is apparently more common than the other *Heterodermia* species found in the state, *H. japonica* and *H. sitchensis* (Oregon Biodiversity Information Center 2010). Further south in Arizona and Mexico *H. leucomela* ssp. *boryi* is found further inland in more continental climates (Moberg and Nash 2002).

Leptogium insigne is believed to be endemic to the Pacific coast of North America, where it occurs from SE Alaska to Coos County, Oregon (Jørgensen & Tønsberg 2010, McCune and Geiser 2009 as *L. brebissonii*). It has recently been segregated from *Leptogium brebissonii*, a

subtropical species that does not occur in the Pacific Northwest (Jørgensen & Tønsberg 2010). *L. insigne* is distinguished from *L. brebissonii* and other members of the genus by its mostly marginal isidia which leave ecorticate scars resembling soredia; *L. brebissonii* has mostly laminal isidia. *L. insigne* is also smaller in size and lighter in coloration than *L. brebissonii* (op. cit.). All known sites of *L. insigne* in the Pacific Northwest are within 11 miles of the coast in the coastal fog zone (Glavich et al. 2005 as *L. brebisonii*). Our specimen was growing on *Vaccinium ovatum* in an open stand of *Pinus contorta* with mixed Ericaceous shrubs near the Horsfall Dunes.

Peltigera hymenina (synonyms: *P. lactucifolia*, *P. polydactyla* var. *hymenina*) is an occasionally encountered and potentially overlooked coastal species that also occurs in Africa and Europe (Martínez et al 2003). In North America, it is known only from British Columbia, Oregon and Washington, although it is expected in southeast Alaska (Fryday, Goward, Nelson, Spribille, and Walton pers. com., Geiser et. al. 1998 & unpublished data, Goward et. al. 1994, Goward et. al. 1995). It is distinguished by a thin, fragile and often cracked thallus with a glabrous upper surface and a lower surface with broad, low veins that are faint in some places; rhizines are simple to confluent (McCune & Geiser 2009). Our specimen was growing on *Kindbergia oregana* and duff over sand on a densely forested dune slope with mature *Pinus contorta* and *Picea sitchensis* (Kofranek 4045 deposited at Coos Bay BLM).

Pseudocyphellaria perpetua is a recently described species with a wide global distribution; it is distinguished from *P. crocata* by the mostly marginal soralia and the yellow medulla (Miadlikowska et al. 2002). In the Pacific Northwest it is mostly restricted to the immediate coast in Oregon and Washington, although there are several known sites in the Cascades of western Oregon (McCune and Geiser 2009). Reevaluation of herbarium material has shown that this species is also found in New England and is actually more common than *P. crocata* there (Hinds and Hinds 2007). Our specimens were found growing on *Picea sitchensis* branches in a grassy opening in coastal forest.

Scoliciosporum sp. is an undescribed species that has been recognized by Stefan Ekman for years (pers. com.). It is epiphyllous on *Picea sitchensis* (Kofranek 4037 pers. herb.) and *Vaccinium ovatum* (McCune 29875, collected at South Beach near Newport after the foray), and is mostly restricted to the coastline. This species is an unusual *Scoliciosporum* in having a blue green hypothecium and a distinct exciple. Description: thallus greenish granular to minutely areolate; apothecia dark gray to black, convex, the margin paler and more brownish; epithecium light olive or greenish; paraphyses coherent in water, branched, separating in K; spores averaging 32-38 μm long, straight to curved, but not spiraling.

SITE 1 - HORSFALL DUNES

These species were collected in a coastal dune matrix of open sand and mixed stands of *Picea sitchensis* and *Pinus contorta*. Species without collection information were seen but not collected.

Alectoria imshaugii Brodo & D. Hawksw. (Demmer 183016, McCune 18099)
Alectoria sarmentosa (Ach.) Ach. (McCune 18100)
Arthonia sp. Ach. (McCune 29790)
Bacidia circumspecta (Nyl. ex Vainio) Malme (McCune 25117)
Biatora rufidula (Graewe) S. Ekman & Printzen (McCune 29791)
Bryoria capillaris (Ach.) Brodo & D. Hawksw. (McCune 18093)
Bryoria fremontii? (Tuck.) Brodo & D. Hawksw. (McCune 23698)
Bryoria fuscescens (Gyelnik) Brodo & D. Hawksw.
Bryoria pseudocapillaris Brodo & D. Hawksw. (Kofranek 4040, McCune 23697 & 29788)

Bryoria pseudofuscescens (Gyelnik) Brodo & D. Hawksw. (Demmer 183030)
Bryoria spiralifera Brodo & D. Hawksw. (McCune 23700 & 23696, Mergenthaler 312, Miller 2012)
Buellia muriformis A. Nordin & Tønsberg (Demmer, Kofranek 4042, McCune 29785 & 23702)
Caloplaca ferruginea (Hudson) Th. Fr.
Cavernularia hultenii Degel. (Demmer 183015, Mergenthaler 305)
Cavernularia lophyrea (Ach.) Degel.
Cetraria californica Tuck. (McCune 18102)
Cetraria chlorophylla (Willd.) Vainio
Cetraria orbata (Nyl.) Fink (McCune 29787 & 29793)
Chrysothrix candelaris (L.) J. R. Laundon (Demmer 183033)
Cladonia albonigra Brodo & Ahti (McCune 29796)
Cladonia bellidiflora (Ach.) Schaerer (McCune 23691 & 29800)
Cladonia cervicornis (Ach.) Flotow (Demmer 183012, McCune 29798 & 23692)
Cladonia chlorophaea (Flörke ex Sommerf.) Sprengel (McCune 18113)
Cladonia coniocraea (Flörke) Sprengel (Demmer 183021)
Cladonia fimbriata (L.) Fr. (McCune 18114)
Cladonia furcata (Hudson) Schrader (Demmer 183013)
Cladonia gracilis (L.) Willd. (McCune 23693)
Cladonia macilenta Hoffm.
Cladonia portentosa ssp *pacifica* (Ahti) Ahti (McCune 18115 & 23690, Mergenthaler 302, Miller 2011)
Cladonia prolifica Ahti & S. Hammer (McCune 29801)
Cladonia pyxidata (L.) Hoffm. (Demmer 183018)
Cladonia scabriuscula (Delise) Nyl. (McCune 18112)
Cladonia transcendens (Vainio) Vainio (Demmer 183037)
Cladonia verruculosa (Vainio) Ahti (McCune 23694 & 19799)
Coccotrema pocillarium (Cummings) Brodo (Kofranek 4044)
Erioderma sorediatum D. J. Galloway & P. M. Jørg.
Graphis elegans (Borrer ex Sm.) Ach. (McCune 29789)
Heterodermia leucomela (L.) Poelt
Hypogymnia apinnata Goward & McCune (Demmer 183022)
Hypogymnia enteromorpha (Ach.) Nyl.
Hypogymnia heterophylla L. Pike (Demmer 183025, McCune 18094 & 18096, Mergenthaler 313, Miller 2010)
Hypogymnia inactiva (Krog) Ohlsson (McCune 29806)
Hypogymnia physodes (L.) Nyl. (Demmer 183029)
Hypogymnia occidentalis L. Pike (McCune 18095)
Hypotrachyna sinuosa (Sm.) Hale (Demmer 183011)
Lecanora impudens Degel. (McCune 18110)
Lecanora substrobilina Printzen (McCune 18109)
Leimonis erratica (Körber) R. C. Harris & Lendemer (McCune 23695)
Leptogium palmatum (Hudson) Mont.
Leptogium insigne P. M. Jørg. & Tønsberg (Sperling 08-L01)
Lobaria pulmonaria (L.) Hoffm.
Loxosporopsis corallifera Brodo, Henssen & Imshaug (Mergenthaler 306, Miller 2009)
Megalaria columbiana (G. Merr.) S. Ekman (McCune 29795)
Melanelia sp. Essl.
Menegazzia subsimilis (H. Magn.) R. Sant.
Menegazzia terebrata (Hoffm.) A. Massal. (McCune 29805, Mergenthaler 307)
Micarea prasina Fr. (McCune 23705)

Micarea xanthonica Coppins & Tønsberg (McCune 29794, 29797)
Mycoblastus affinis (Schaerer) T. Schauer (McCune 29780)
Mycoblastus caesius (Coppins & P. James) Tønsberg (McCune 29782, 29783)
Mycoblastus sanguinarius (L.) Norman (McCune 29807)
Nephroma laevigatum Ach.
Nephroma resupinatum (L.) Ach.
Nodobryoria oregana (Tuck.) Common & Brodo (Mergenthaler 308)
Ochrolechia juvenalis Brodo (Demmer 183036, McCune 18106, 18107)
Ochrolechia oregonensis H. Magn. (Demmer 183017)
Ochrolechia subpallescens Verseghy (McCune 29779)
Ochrolechia szatalaensis Verseghy (McCune 29778)
Parmelia hygrophila (Miller 2013)
Parmelia saxatilis (L.) Ach. (McCune 23704)
Parmelia squarrosa Hale (McCune 18092 & 23703, Mergenthaler 309)
Parmelia sulcata Taylor
Parmeliopsis ambigua (Wulfen) Nyl.
Parmotrema arnoldii (Du Rietz) Hale or *perlatum* (Hudson) M. Choisy
Parmotrema crinitum (Ach.) M. Choisy
Peltigera britannica (Gyelnik) Holt.-Hartw. & Tønsberg (Barber 200)
Peltigera collina (Ach.) Schrader
Peltigera leucophlebia (Nyl.) Gyelnik (McCune 18116)
Peltigera membranacea (Ach.) Nyl. (Demmer 183034)
Peltigera neopolydactyla (Gyelnik) Gyelnik
Peltigera hymenina (Ach.) Delise (Kofranek 4045)
Pertusaria amara (Ach.) Nyl. (McCune 29784)
Pertusaria ophthalmiza (Nyl.) Nyl. (McCune 29781)
Platismatia glauca (L.) W. L. Culb. & C. F. Culb. (Barber 201)
Platismatia herrei (Imshaug) W. L. Culb. & C. F. Culb. (Demmer 183026, McCune 18098)
Platismatia lacunosa (Ach.) W. L. Culb. & C. F. Culb.
Platismatia norvegica (Lynge) W. L. Culb. & C. F. Culb.
Platismatia stenophylla (Tuck.) W. L. Culb. & C. F. Culb.
Pseudocyphellaria anomala Brodo & Ahti
Pseudocyphellaria anthraspis (Ach.) H. Magn.
Pyrrhospora quernea (Dickson) Körber (Kofranek 4039)
Ramalina farinacea (L.) Ach. (Demmer 183023)
Ramalina menziesii Taylor (Demmer 183027, McCune 18091)
Ramalina roesleri (Hochst. ex Schaerer) Hue (Demmer 183028)
Ramalina thrausta (Ach.) Nyl.
Ramboldia gowardiana (T. Sprib. & Hauck) Kalb, Lumbsch & Elix (McCune 18111)
Sphaerophorus tuckermanii Räsänen (McCune 18097)
Sphaerophorus venerabilis Wedin, Högnabba & Goward (Kofranek 4043, McCune 29786)
Sticta limbata (Sm.) Ach.
Usnea cornuta (Demmer 183024, McCune 18104 & 29792, Rodenkirk 08-L10)
Usnea filipendula group Stirton
Usnea flavocardia Räsänen (Demmer 183032, Mergenthaler 310, McCune 18103)
Usnea fragilescens v. *mollis* (Vainio) Clerc (McCune 18105)
Usnea longissima Ach. (McCune 29802)

SITE 2 - SOUTH SLOUGH COLLECTIONS FROM HEADQUARTERS, HINCH ROAD AND ALONG THE WASSON TRAIL

This list includes collections from several locations near the South Slough: Hinch Road, SSNERS Headquarters, the Fredrickson house and along the Wasson Trail. Habitats include coastal *Picea sitchensis forest,* meadows, and an old apple orchard with young *Picea* on a tidal flat. Species without collection information were seen but not collected.

Alectoria imshaugii Brodo & D. Hawksw.
Alectoria sarmentosa (Ach.) Ach. (McCune 29773)
Arthonia ilicina Taylor (McCune 29776)
Baeomyces rufus (Hudson) Rebent. (Miller 2007)
Bryoria bicolor (Ehrh.) Brodo & D. Hawksw. (Miller 116)
Bryoria capillaris (Ach.) Brodo & D. Hawksw. (Demmer 182099, McCune 29761)
Bryoria sp. Brodo & D. Hawksw. (Rodenkirk 08-F11)
Bryoria trichodes (Michaux) Brodo & D. Hawksw. (Rodenkirk 08-L13)
Buellia muriformis A. Nordin & Tønsberg (Demmer 182075)
Caloplaca inconspecta Arup (McCune 22287)
Cavernularia hultenii Degel.
Cavernularia lophyrea (Ach.) Degel. (Demmer 182004, McCune 22288 & 29756, Miller 2006)
Cetraria chlorophylla (Willd.) Vainio (Demmer 182124)
Cetraria orbata (Nyl.) Fink (Demmer, McCune 29758)
Chaenotheca trichialis (Ach.) Th. Fr.
Chrysothrix candelaris (L.) J. R. Laundon
Cladonia portentosa ssp. *pacifica* (Ahti) Ahti
Cladonia carneola (Fr.) Fr. (McCune 22280)
Cladonia fimbriata (L.) Fr.
Cladonia furcata (Hudson) Schrader (Demmer 182125)
Cladonia macilenta Hoffm. (McCune 29771)
Cladonia ochrochlora Flörke
Cladonia pyxidata (L.) Hoffm.
Cladonia squamosa Hoffm. (Demmer 182131)
Cladonia transcendens (Vainio) Vainio (Demmer 182007)
Cladonia verruculosa (Vainio) Ahti
Graphis elegans (Borrer ex Sm.) Ach. (Kofranek 4036, Rodenkirk 08-L14)
Hypogymnia apinnata Goward & McCune (Barber 107, Demmer 182121, McCune 29764, 29757 & 22282, Miller 2004)
Hypogymnia enteromorpha (Ach.) Nyl. (Barber 106)
Hypogymnia physodes (L.) Nyl. (Demmer 182081)
Hypogymnia tubulosa (Schaerer) Hav.
Hypotrachyna sinuosa (Sm.) Hale
Lecanora jamesii J. R. Laundon (McCune 29768)
Lecanora pacifica Tuck.
Lecanora xylophila Hue (McCune 22286)
Lepraria incana (L.) Ach. (McCune 29769)
Lepraria lobificans Nyl. (Demmer 182077, McCune 29774)
Leptogium insigne P. M. Jørg. & Tønsberg
Lobaria pulmonaria (L.) Hoffm.
Lobaria scrobiculata (Scop.) DC. (McCune 29760, Miller 2008)
Melanelixia fuliginosa (Fr. ex Duby) O. Blanco et al.
Menegazzia subsimilis (H. Magn.) R. Sant. (Miller 2005)
Micarea peliocarpa (Anzi) Coppins & R. Sant. (McCune 29766)

Micarea prasina Fr. Syns. (McCune 29770)
Mycoblastus caesius (Coppins & P. James) Tønsberg (McCune 29759)
Mycoporum antecellens (Nyl.) R. C. Harris (McCune 29777)
Nephroma bellum (Sprengel) Tuck. (Barber 104)
Nephroma helveticum Ach.
Nephroma laevigatum Ach. (Barber 103)
Nephroma resupinatum (L.) Ach. (Demmer 182120, Barber 102)
Ochrolechia sp. A. Massal. (McCune 29775, 22285)
Ochrolechia juvenalis Brodo (Demmer 182115)
Ochrolechia subpallescens Verseghy (McCune 29775)
Parmelia saxatilis (L.) Ach. (Demmer 182104)
Parmelia sulcata Taylor
Parmelia squarrosa Hale (Demmer 182098, McCune 22284)
Parmotrema arnoldii (Du Rietz) Hale (Demmer 182131, McCune 22283)
Parmotrema crinitum (Ach.) M. Choisy (Demmer 182130)
Parmotrema perlatum (Hudson) M. Choisy (Demmer 182117, Mergenthaler 304)
Peltigera degenii Gyelnik (Demmer 182083)
Peltigera membranacea (Ach.) Nyl. (Barber 101)
Pertusaria sp. DC. (Demmer 182078)
Platismatia glauca (L.) W. L. Culb. & C. F. Culb.
Platismatia norvegica (Lynge) W. L. Culb. & C. F. Culb.
Platismatia stenophylla (Tuck.) W. L. Culb. & C. F. Culb.
Polychidium contortum Henssen (McCune 29765, Miller 2000)
Pseudocyphellaria anomala Brodo & Ahti
Pseudocyphellaria anthraspis (Ach.) H. Magn. (Barber 105)
Pseudocyphellaria crocata (L.) Vainio (Demmer 182133, McCune 29763)
Pseudocyphellaria perpetua McCune & Miadl. (McCune 29762, Miller 2002)
Pyrrhospora quernea (Dickson) Körber
Ramalina dilacerata (Hoffm.) Hoffm.
Ramalina farinacea (L.) Ach. (Barber 105, Demmer 182093)
Ramalina menziesii Taylor (Demmer 182109, Mergenthaler 300)
Ramalina roesleri (Hochst. ex Schaerer) Hue (Demmer 182132, Miller 2003)
Ramalina thrausta (Ach.) Nyl. (Demmer 182003, Miller 2001)
Scoliciosporum sp. A. Massal. (undescribed species) (Kofranek 4037)
Sphaerophorus tuckermanii Räsänen
Sticta limbata (Sm.) Ach.
Usnea cornuta Körber (Demmer 182002, McCune 22281)
Usnea filipendula Stirton (Demmer 182006, Rodenkirk 08-L11)
Usnea flavocardia Räsänen
Usnea glabrata (Ach.) Vainio
Usnea scabrata Nyl.

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