Preliminary Checklist of Lichens Reported from Wyoming

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PRELIMINARY CHECKLIST OF LICHENS REPORTED FROM WYOMING

Dorothy E. Tuthill[1]

ABSTRACT.—Although lichens are a common feature in Wyoming, there has been no attempt to compile a statewide list of species since 1900. A number of surveys have been conducted in the state, especially in Yellowstone National Park and other federally managed parks and forests, though little attention has been given to lower-elevation regions of the state. The literature search conducted for this project yielded nearly 800 species names, which number was reduced to 608 currently accepted taxa. Collection locations and references are provided for each taxon, as are global ranks (conservation status, from NatureServe.org), and a brief discussion of some of the interesting results.

RESUMEN.—Aunque los líquenes son típicos en Wyoming, no ha habido intentos de compilar una lista de especies a nivel estatal desde 1900. Se han llevado a cabo una cantidad de estudios en el estado, especialmente en el Parque Nacional Yellowstone y en otros parques y bosques administrados por el estado, aunque se ha prestado poca atención a las regiones de menor elevación del estado. La investigación bibliográfica llevada a cabo para este proyecto resultó en aproximadamente 800 nombres de especies, que se redujeron a 608 taxa actualmente aceptados. Se proporcionan las localidades de colecta y referencias para cada taxón, así como también se proporcionan las categorías globales (estado de conservación de NatureServe.org) y una breve discusión sobre algunos de los resultados interesantes.

Lichens are pervasive across Wyoming. From the driest basins to the Rocky Mountain peaks, lichens inhabit the surfaces of soils, rocks, and wood (both living and dead). They play significant roles in biogeochemical cycling (Cornelissen et al. 2007, Nash 2008a), weathering (Stretch and Viles 2002, Hoffland et al. 2004), and soil stabilization (Belnap and Lange 2001) and contribute to aboveground productive biomass and biodiversity, especially in dry and cold climates (Nash 2008b). Lichens serve as an important or occasional source of forage for several Wyoming game animals (e.g., pronghorn, moose, elk, bighorn sheep), nongame mammals and birds, and a variety of invertebrates (Sharnoff 1994; http://www.lichen.com/animals.html). The number of lichen species in North America (>3600 north of Mexico; Brodo et al. 2001) exceeds the number of North American bird and mammal species combined (<1500; Kays and Wilson 2002; http://www.birdwatching.com/software/birdlists/north_amer98.html), yet lichens have been, for the most part, overlooked by most biologists and the public.

Although the lichens of Wyoming have been surveyed sporadically, at best, lichenology has a long history in the region. More than 70 lichen specimens were collected by the Hayden Expedition of 1872. These specimens were sent to Henry Willey of New Bedford, MA, for identification and were reported in the sixth annual report of the USGS in 1873. Unfortunately, location information was given for only a few species, with Wyoming localities mentioned for 9 species (Hayden 1873). A decade and a half later, Tuckerman (1888) mentioned 2 lichens found in Wyoming (almost certainly by the Hayden Expedition): *Buellia epigaea* (Pers.) Tuck., "upon the earth in calcareous regions," and "[O]n the North Platte river, Wyoming, accompanying, as in Europe, *Placodium fulgens*" [now *Fulgensia fulgens* (Sw.) Elenkin]. The former has not been recorded from Wyoming since, though it has been collected in neighboring states (CO, MT, UT, and ID; CNALH 2011).

The first compilation of lichens found for Wyoming was that by Aven Nelson (1900), botanist at the University of Wyoming. Nelson's list of 60 taxa was based primarily on his own collections around the state, with identifications provided by "Prof. T.A. Williams of the Division of Agrostology of the U.S. Department of Agriculture." Many of his collections were from underrepresented parts of the state, including Albany, Carbon, and Sweetwater counties. Unfortunately, some species have

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changed in both name and concept in the century since Nelson's work, and application of current names to Nelson's species was not always possible. As a consequence, only 36 of his taxa could be included in the current project. Fortunately, his specimens are still available at the Rocky Mountain Herbarium (University of Wyoming, Laramie, WY), awaiting further review.

Recent work has focused largely on federally managed parks and forests, especially Yellowstone National Park (Eversman 1990, Eversman et al. 2002, Eversman and Horton 2004, NPLichen 2011), Grand Teton National Park (Eversman 1998, NPLichen 2011), the Black Hills (Wetmore 1967, NPLichen 2011 for Devil's Tower NM), and the Big Horn Mountains (Wetmore 2009). Far less attention has been given to the basins and grasslands, though it must be pointed out that the majority of mountain ranges have not been surveyed.

The importance of biological soil crusts as contributors to biodiversity and ecosystem function has been recognized in recent decades (e.g., Belnap and Lange 2001, Bowker et al. 2010), yet their significance in Wyoming has barely been addressed. Generally speaking, the relative proportion of lichen biomass within biological crusts increases with cooler temperatures (Rosentreter and Belnap 2001), suggesting that lichens may contribute a significant portion of the carbon fixation in Wyoming's arid rangelands. Cyanolichens associated with biological crusts, along with free-living cyanobacteria, may also be an important source of fixed N in some arid ecosystems (Belnap 2002), thus increasing soil fertility. Only one study (Muscha and Hild 2006) has characterized biological soil crusts in Wyoming, although 2 others have identified Wyoming soil crust lichens as part of another project (St. Clair et al. 1993, States and Christensen 2001).

METHODS

Only published reports (print or web-based) of lichens have been included in this checklist, and no attempt has been made to examine herbarium collections or to verify identifications. Names have been standardized to Esslinger (2011), and synonyms combined. In a few cases, reported taxa were not included in Esslinger, or they were included but noted as misidentifications for North America. In both cases, those taxa have not been included in the final checklist. Older names, especially those applied by Nelson (1900), were difficult to associate with current nomenclature. Those taxa have also been excluded from the list.

Collection locations have been designated by county, with the exceptions of specimens from Yellowstone National Park (YNP) and a few records that did not specify exact locations. For those species recorded only from YNP, an effort was made to verify if the collection was made in Wyoming. Most of the included YNP records are known to be from the Wyoming portion of the park; however, some have not been verified as from the state. In most cases, verification was possible by searching the University of Minnesota Herbarium through the Consortium of North American Lichen Herbaria (CNALH) web site (http://symbiota.org/nalichens/), or through the references cited on NPLichen. Sharon Eversman was very helpful in providing locations for species from her publications. In a few cases, verification was not possible; those records, mostly from NPLichen, are indicated with the location code Y*. Similarly, a number of species from the Beartooth Plateau, which spans the Wyoming–Montana border, are not verified for Park County, Wyoming, and are designated with P?. All of those species, however, are verified from other locations within the state. Several authors gave no location information other than within the state (e.g., Neitlich et al. 1999), or locations were indicated very broadly (e.g., Thomson 1987, McCune and Goward 1995), and have been coded differently. See checklist footnotes for complete code information.

Global rank, an indicator of relative abundance and conservation status, was taken directly from the NatureServe web site (http://www.natureserve.org/explorer/index.htm). Those species for which no rank is provided are not included in the NatureServe database. A complete explanation of the ranking codes is available at http://www.natureserve.org/explorer/ranking.htm. In brief, the lower the number, the less common the taxon is on a global scale. Number ranges (e.g., G3G5) indicate that the true rank is thought to be within the range but has not been determined, and GNR indicates that the taxon has not been ranked. State ranks have yet to be assigned for any lichen in Wyoming.

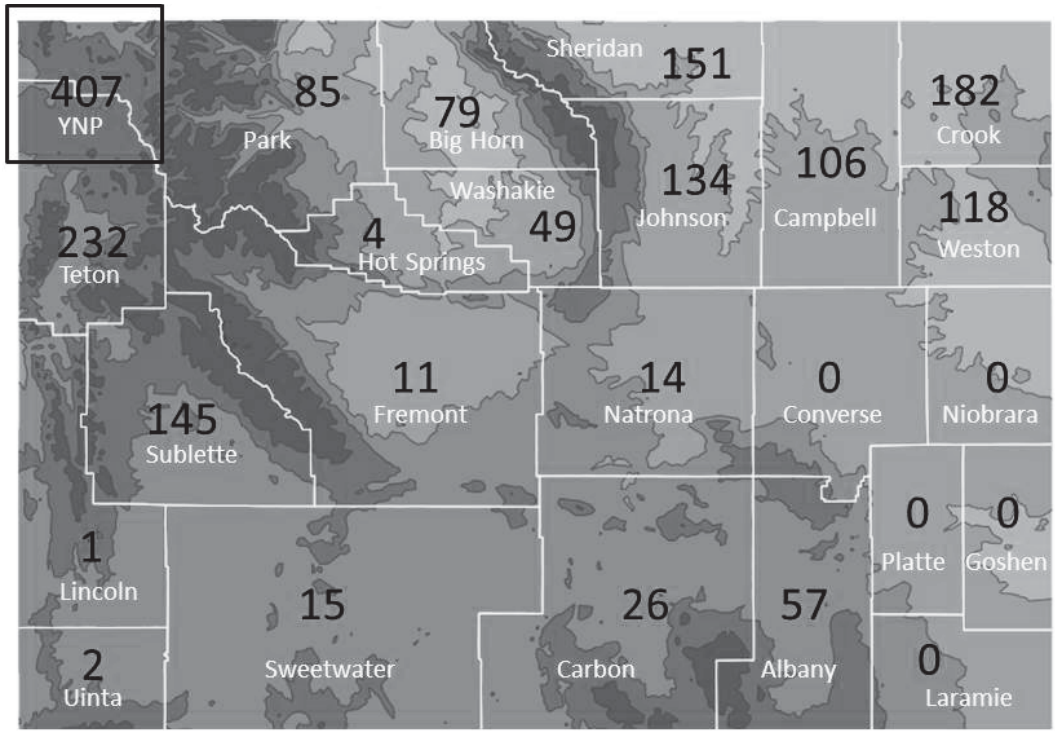

Fig. 1. Numbers of species recorded from Wyoming counties and Yellowstone National Park. Elevation contours are at 4500, 6000, 7500, 9000, and 12,000 feet. Map source: geology.com/state-map/Wyoming.shtml

The list was compiled from approximately 1800 records from 25 published accounts and 2 online databases. The earliest published report that has been included is Tuckerman (1888); earlier reports from the Hayden expedition (Hayden 1873) have not been included because of the very sparse location information provided.

RESULTS AND DISCUSSION

Since 1888, at least 796 lichen taxon names have been reported for Wyoming and Yellowstone National Park. Standardization of names reduced the number by about 100 taxa, and 40 taxa were removed from the list because either the currently accepted names belong to taxa not found in North America, or because the current acceptable name could not be determined. Additional taxa were removed because they were recorded only from the Montana portions of YNP or of the Beartooth Plateau. The final list includes 608 taxa.

Figure 1 shows the distribution of recorded collections by county (or region, for YNP). Not surprisingly, Yellowstone National Park has the largest share of species—two-thirds of the species on the list are found in YNP. Teton County has the greatest number of records outside YNP; nearly all of the reports are from Grand Teton National Park. Similarly, Crook County has a high number of collections from Devil's Tower National Monument (NPLichen 2011) and the Black Hills National Forest (Wetmore 1967), which extends into Weston County. The large number of species known from Sublette County are the result of a single project in the Bridger Wilderness Area (St. Clair and Newberry 1993), and all of the collections in Campbell County are from a single report (Medina 1994) covering the Rochelle Hills.

Clearly, most of the area has not been surveyed, even when relatively high numbers suggest otherwise. Albany County's figure is higher than many counties only because it was the home of Aven Nelson, who traveled and collected there and in Carbon County. Uinta County's 2 records are >100 years old (Nelson 1900), and Lincoln County has only a

single record, albeit fairly recent, and a type specimen (*Xanthoparmelia lipochlorochroa* Hale & Elix; Hale 1989, St. Clair et al. 1993).

All of the major surveys to date have occurred in the mountainous or hilly regions of the state; basin collections have been mostly sporadic and relatively small. An exception is Muscha and Hild's (2006) survey of soil crusts in basins, which added important, though small, numbers of species to Sweetwater, Fremont, Hot Springs, Washakie, and Natrona counties. Eight counties remain essentially unexplored for lichens (Lincoln, Uinta, Sublette, Laramie, Goshen, Platte, Niobrara, and Converse), despite the fact that most of these counties include mountain ranges and large tracts of federally managed lands. The distribution of lichen species in Wyoming must remain a mystery until much more of the state has been surveyed.

Approximately one-third (29%) of the species recorded from Wyoming have no global rank, either because they are not in the NatureServe database (7 taxa), or they are there but have not been ranked (code = GNR, GU or GUQ; 169 taxa). Of those that have been ranked, 3 of the rarest species are *Xanthoparmelia* spp.: *X. neowyomingica* Hale, *X. norchlorochloa* Hale, and *X. lipochlorochroa* Hale & Elix (global ranks G1, G1G2, G2?, respectively). Recent analysis of DNA sequences from western North American *Xanthoparmelia* indicates that these taxa should not be considered as distinct species (Leavitt et al. 2011). *Xanthoparmelia lipochlorochroa* and *X. norchlorochroa* are both found with the very common *X. chlorochroa* (Tuck.) Hale, and are similar in appearance and vagrancy. They have been distinguished on the basis of chemistry, with minor morphological differences (Hale 1990). Likewise, *X. neowyomingica* has been segregated from *X. wyomingica* (Gyelnik) Hale by its production of stictic rather than salazinic acid, and both species are distinguished from *X. chlorochroa* because of their attached habit and presence of apothecia (Hale 1987, 1989, 1990). Leavitt et al. (2011) provided strong evidence based on fragments of 2 protein-coding nuclear loci and 4 nuclear ribosomal markers that these 5 taxa, along with *X. cumberlandia* (Gyelnik) Hale, *X. coloradoënsis* (Gyelnik) Hale, *X. neochlorochroa* Hale, and 2 additional species not reported for Wyoming, constitute a single, commonly-occurring polymorphic taxon. These 8 species of *Xanthoparmelia* remain on the list pending acceptance or rejection of the new molecular information.

Potentially rare species (global rank G2G3 to G2G5), other than *Xanthoparmelia,* found in Wyoming are *Bacidia vermifera* (Nyl.) Th. Fr., *Cladonia imbricarica* Kristinsson, *Micarea denigrata* (Fr.) Hedl., *Parmelia omphalodes* (L.) Ach., *Psora luridella* (Tuck.) Fink, *Rhizoplaca haydenii* (Tuck.) W.A. Weber, *Thelocarpon epibolum* Nyl., *Umbilicaria hirsuta* (Sw. ex Westr.) Hoffm., and *Usnea baileyi* (Stirton) Zahlbr. Seven of these 9 species were recorded only once or twice from the state; however, 2 species, *Micarea denigrata* and *Rhizoplaca haydenii,* were recorded 4 and 5 times, respectively, from as many counties. *Rhizoplaca haydenii* is a vagrant, growing on soils and calcareous gravels "at fairly high altitudes on barren, windswept terraces" (Brodo et al. 2001). Its distribution is limited to Wyoming and parts of adjacent states (Brodo et al. 2001), hence its G2G3 rank. In Wyoming, it has been recorded from the Big Horn Mountains, from Albany, Carbon, Natrona and Sweetwater counties, and from the Beartooth Plateau. *Micarea denigrata,* on the other hand, has a much broader distribution, including North America and northern Europe (CNALH 2011).

Several of the potentially rare species may not be globally rare, but are regionally rare. For example, *Usnea baileyi* is not known from western North America (Brodo et al. 2001, CNALH 2011), *Bacidia vermifera* is sparsely distributed only in Arizona and Colorado (CNALH 2011), and *Psora luridella,* while common in the central and southern Rocky Mountains, is not common to the north (McCune and Goward 1995). Of the 608 taxa recorded from Wyoming, 181 (30%) have been reported only once, but whether these taxa are truly rare in the state cannot be determined because of the limited collecting in most of Wyoming.

Approximately 9% of the lichens on the list are cyanolichens, a number just slightly lower than the worldwide proportion of 10% (Nash 2008a). Several species appear to be widely distributed across the state, including *Collema tenax* (Swartz) Ach. and a number of *Peltigera* species. *Collema tenax* contributes significant amounts of nitrogen to desert soils of Utah (Belnap 2002) and is the most widespread of the cyanolichens in Wyoming. It is included in several general reports and in reports from 6 soil crust sites (States and Christensen 2001, Muscha and Hild 2006).

Significant contributions to the current list can be made without fieldwork, though the value of field surveys cannot be understated. The Consortium of North American Lichen Herbaria web site includes more than 5600 specimens in 15 herbaria that were collected in Wyoming, of which only a relative few have been published and therefore are not included in the current checklist. The Rocky Mountain Herbarium, which is not a member of CNALH, has hundreds of lichen specimens dating from the time of Nelson to the present, though only a portion are from Wyoming. Regional herbaria may also contain additional taxa from Wyoming; the University of Colorado Museum contains 100,000 lichen specimens, with an unknown number from Wyoming (W.A. Weber, personal communication). As understanding and appreciation of the functional diversity and ecosystem services provided by lichens increases among ecologists and land managers, the study of lichens and lichen communities will hopefully play a more important role in ecological studies. Basic knowledge of the species involved is fundamental to an understanding of the ecological roles of lichens.

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CHECKLIST OF WYOMING LICHENS

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Acarospora badiofusca (Nyl.) Th. Fr.	G3G5	Cl, Cr, Su, Wa, We	13, 21, 27, 29
Acarospora elevata H. Magn.	GNR	Su	21
Acarospora fuscata (Schrader) Arnold	G5?	Cl, J, P?, T, Y	4, 5, 6, 8, 13, 29
Acarospora glaucocarpa (Ach.) Körber	G5?	Cr, Sh, T, Wa, We, Y	6, 8, 17, 27, 29
Acarospora molybdina (Wahlenb.) Trevisan	G3G5	P	18
Acarospora schleicheri (Ach.) A. Massal.	G5?	A, Cl, Cn, Cr, P?, Wa, Y	4, 5, 8, 11, 13, 14, 16, 27, 29
Acarospora strigata (Nyl.) Jatta	G4G5	B, P, Sh, Y	8, 17, 18, 29
Acarospora veronensis A. Massal.	G5	A, Y	8, 11
Alectoria sarmentosa (Ach.) Ach.	G5	WY	15
Allocetraria madreporiformis (Ach.) Kärnef. & Thell	GNR	P?, Y	4, 5, 8
Amandinea polyspora (Willey) E. Lay & P. May	G5	Cl	13
Amandinea punctata (Hoffm.) Coppins & Scheid.	G5	B, Cr, J, Sh, Su, T, We, Y	6, 8, 17, 21, 27, 29
Anaptychia ulotrichoides (Vainio) Vainio	G5?	Sh	29
Arthonia glebosa Tuck.	GNR	Cl, P?, T, Wa	6, 13, 14
Arthonia lapidicola (Taylor) Branth. & Rostrup	G5?	Cr	27
Arthonia patellulata Nyl.	G5	Cr	27
Arthonia varians (Davies) Nyl.		Y	17
Aspicilia caesiocinerea (Nyl. *ex* Malbr.) Arnold	G5?	Cl, P?, Sh, Su, T, Wa, Y	4, 5, 6, 8, 13, 21, 29
Aspicilia candida (Anzi) Hue	G5	B, Sh, T, Wa, Y	6, 8, 17, 29
Aspicilia cinerea (L.) Körber	G5	Cl, Cr, J, P?, Sh, T, Y	4, 5, 6, 13, 17, 27, 29
Aspicilia filiformis Rosentreter	GNR	B, J, Sh, Y	8, 17, 29
Aspicilia laevata (Ach.) Arnold	GNR	Y	8, 17
Aspicilia reptans (Looman) Wetmore	GNR	Na, Su, WY	14, 20, 21
Aspicilia supertegens Arnold	G3G5	T	6
Aspicilia verrrucigera Hue	GNR	Su	21
Bacidia bagliettoana (A. Massal. & De Not.) Jatta	G5	Cl, Cr, We	13, 27
Bacidia beckhausii Körber	G5	Cr	27
Bacidia circumspecta (Nyl. *ex* Vainio) Malme	GNR	Sh	29
Bacidia vermifera (Nyl.) Th. Fr.	G2G4	Cn	11
Bacidina inundata (Fr.) Vězda	GNR	Cr	27
Baeomyces rufus (Hudson) Rebent.	G5?	Y	8, 17
Bellemerea alpina (Sommerf.) Clauzade & Cl. Roux	G3G5	Sh, Su, T, We, Y	4, 6, 8, 17, 21, 27, 29
Bellemerea cinereorufescens (Ach.) Clauzade & Cl. Roux	G3G5	Su, T, Y	6, 8, 17, 21
Biatoropsis usnearum Räsänen	GNR	Y	8, 17
Bilimbia lobulata (Sommerf.) Hafellner & Coppins	GNR	We, Y	8, 27
Brodoa oroarctica (Krog) Goward	G4G5	P	5
Bryonora castanea (Hepp) Poelt	G3G5	Su	21
Bryoria chalybeiformis (L.) Brodo & D. Hawksw.	G5	Cl	13
Bryoria fremontii (Tuck.) Brodo & D. Hawksw.	G3G5	Sh, T, WY, Y	4, 6, 8, 10, 15, 17, 29
Bryoria furcellata (Fr.) Brodo & D. Hawksw.	GNR	WY	15
Bryoria fuscescens (Gyelnik) Brodo & D. Hawksw.	G5?	A, B, J, Sh, Su, T, Wa, WY, Y	1, 4, 6, 15, 17, 21, 29
Bryoria glabra (Motyka) Brodo & D. Hawksw.	G3G5	Cr, T, We	6, 27
Bryoria lanestris (Ach.) Brodo & D. Hawksw.	G5?	Su, T, WY, Y	4, 6, 8, 15, 17, 21
Bryoria simplicior (Vainio) Brodo & D. Hawksw	G3G5	Su, Y*	17, 21
Bryoria trichodes (Michaux) Brodo & D. Hawksw	G3G5	Y*	17
Bryoria trichodes subsp. *americana* (Motyka) Brodo & D. Hawksw.	G3G5T4T5	T	10
Buellia aethalea (Ach.) Th. Fr.	G3?	Cr	27
Buellia arnoldii Servít	GNR	B	29
Buellia badia (Fr.) A. Massal.	G3?	Y*	8, 17
Buellia dispersa A. Massal.	GNR	Cl, Su	13, 21
Buellia epigaea (Pers.) Tuck.	GNR	WY	26

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Buellia erubescens Arnold	G3G5	B, Cl, Cr, J, Sh, Su, T, Y	4, 6, 8, 11, 13, 17, 21, 27, 29
Buellia griseovirens (Turner & Borrer *ex* Sm.) Almb.	GNR	Y	8, 17
Buellia leptocline (Flotow) A. Massal.	G3G5	Y	8
Calicium glaucellum Ach.	G4G5	Y	8
Calicium trabinellum (Ach.) Ach	G4G5	Cr	27
Calicium viride Pers.	G4G5	Y	8, 17
Caloplaca adnexa Vězda	GNR	Y	8, 17
Caloplaca ahtii Søchting	GNR	Y	17
Caloplaca albovariegata (B. de Lesd.) Wetmore	GNR	B	29
Caloplaca approximata (Lynge) H. Magn.	G3G5	T	10
Caloplaca arenaria (Pers.) Müll. Arg.	G5	A, Cr, J, Sh, Wa, We, Y	8, 11, 17, 27, 29
Caloplaca arizonica H. Magn.	GNR	Cr	27
Caloplaca atroalba (Tuck.) Zahlbr.	GNR	T	6
Caloplaca cerina (Ehrh. *ex* Hedwig) Th. Fr.	G5	Cr, We, Y	8, 17, 27
Caloplaca chrysodeta (Vainio *ex* Räsänen) Dombr.	GNR	Y	8
Caloplaca chrysophthalma Degel.	GNR	Y	8
Caloplaca citrina (Hoffm.) Th. Fr.	G4G5	Cl, T, Y	4, 6, 8, 13, 17
Caloplaca cladodes (Tuck.) Zahlbr.	G4G5	B, Sh, U?, Wa, Y	8, 16, 17, 28
Caloplaca crenulatella (Nyl.) H. Olivier	G3G5	Sh	29
Caloplaca decipiens (Arnold) Blomb. & Forssell	G4G5	Cl, Sr, Y	8, 11, 13
Caloplaca epithallina Lynge	G3G5	B, Cl, Cr, J, P?, Sh, Su, T, Y	4, 5, 6, 8, 13, 17, 21, 27, 29
Caloplaca ferruginea (Hudson) Th. Fr.	GNR	Y	4, 8, 17
Caloplaca flavovirescens (Wulfen) Dalla Torre & Sarnth.	G5	T, Y	4, 6
Caloplaca fraudans (Th. Fr.) H. Olivier	G5	Su, T, Y	4, 6, 21
Caloplaca fulvolutea (Nyl.) Jatta	GNR	Sh	29
Caloplaca furfuracea H. Magn.	GNR	J, Sh, T, Y	8, 17, 28, 29
Caloplaca grimmiae (Nyl.) H. Olivier	GNR	Y*	8, 17
Caloplaca holocarpa (Hoffm. *ex* Ach.) A.E. Wade	G5	Cn, J, Sh, Su, T, Y	6, 8, 11, 17, 21, 29
Caloplaca jungermanniae (Vahl) Tr. Fr.	G4G5	Na, P?, Su, T, Wa, Y	5, 6, 8, 14, 21
Caloplaca lactea (A. Massal.) Zahlbr.	GNR	Wa, Y	8, 14, 17
Caloplaca lobulata (Flörke) B. de Lesd.	GNR	Su	21
Caloplaca microphyllina (Tuck.) Hasse	GNR	Cl	13
Caloplaca pinicola H. Magn.	GNR	T	6
Caloplaca pyracea (Ach.) Th. Fr.	GNR	Cr, We	27
Caloplaca saxicola (Hoffm.) Nordin	G5	B, Sh, T, Y	6, 8, 17, 29
Caloplaca sideritis (Tuck.) Zahlbr.	GNR	A, T	6, 11
Caloplaca sinapisperma (Lam. & DC.) Maheu & A. Gillet	GNR	J, Y	8, 17, 29
Caloplaca sipeana H. Magn.	GNR	Cl	13
Caloplaca subsoluta (Nyl.) Zahlbr.	GNR	Cl, P?, Y	5, 8, 13
Caloplaca tiroliensis Zahlbr.	G4G5	Cl, F, J, Na, P?, Sh, T, Y	4, 5, 6, 8, 13, 14, 17, 29
Caloplaca tominii Savicz	G3G5	F, Na, Sr, Wa	14, 23
Caloplaca trachyphylla (Tuck.) Zahlbr.	G4G5	A, Sr, T, Y	4, 8, 11, 17
Caloplaca ulmorum (Fink) Fink	GNR	Cr, We	27
Caloplaca vitellinula (Nyl.) H. Olivier	GNR	T	6
Caloplaca xanthostigmoidea (Räsänen) Zahlbr.	GNR	Y	17
Calvitimela aglaea (Sommerf.) Hafellner		Sh, Y	8, 29
Calvitimela armeniaca (DC.) Hafellner	G5	P?, Y	4, 5, 8, 17
Candelaria concolor (Dickson) Stein	G5	Cr, T, Y	4, 6, 17, 27
Candelariella aggregata M. Westb.	GNR	J, Sh, Wa	29
Candelariella antennaria Räsänen	GNR	Cn	11
Candelariella aurella (Hoffm.) Zahlbr.	G5?	B, Cl, Cr, P?, Sh, Su, T, Wa, Y	4, 5, 6, 7, 8, 13, 17, 21, 27, 29
Candelariella biatorina M. Westb.	GNR	J, Y	17, 29
Candelariella canadensis H. Magn.	GNR	T	6

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Candelariella citrina B. de Lesd.	GNR	Na, Sr, Wa, Y	8, 14, 17
Candelariella dispersa (Räsänen) Hakul.	G3G4	Y*	8
Candelariella efflorescens R.C. Harris & W.R. Buck	G4G5	J, Sh	29
Candelariella rosulans (Müll. Arg.) Zahlbr.	G3G5	A, Cl, Cn, Sh, We, Y	8, 11, 13, 17, 27, 29
Candelariella vitellina (Hoffm.) Müll. Arg.	G5	B, Cl, Cr, J, P?, Sh, Su, T, Wa, We, Y	4, 5, 6, 8, 13, 17, 21, 27, 29
Candelariella xanthostigma (Ach.) Lettau	G4G5	Cr, P?, Su, T, Y	4, 5, 6, 8, 17, 21, 27
Carbonea vitellinaria (Nyl.) Hertel	G5?	Sh, Su, Y	21, 25
Catapyrenium cinereum (Pers.) Körber	G5	Cr, NE, P?, Su, T, Y	5, 6, 8, 17, 21, 24, 27
Catapyrenium daedaleum (Kremp.) Stein	GNR	Su, WY	20, 21
Catapyrenium lachneum (Ach.) R. Sant	G5	Su	21
Catapyrenium psoromoides (Borrer) R. Sant.	G5?	Y	8, 17
Catillaria chalybeia (Borrer) A. Massal.	G3G5	T	6
Cercidospora epipolytropa (Mudd) Arnold	GNR	F	25
Cetraria aculeata (Schreber) Fr.	G4G5	J, P?, T, Wa, Y	4, 5, 6, 8, 17, 29
Cetraria ericetorum Opiz	G5?	J, P?	5, 29
Cetraria islandica (L.) Ach.	G5	A, J, P?	5, 16, 29
Cetraria muricata (Ach.) Eckfeldt	GNR	P?, Y	4, 5, 8
Chaenotheca furfuracea (L.) Tibell	G4G5	T, Y	6, 8, 17
Chaenotheca hispidula (Ach.) Zahlbr.	GNR	Y	8, 17
Chaenotheca stemonea (Ach.) Müll. Arg.	GNR	Y	8, 17
Chaenotheca trichialis (Ach.) Th. Fr.	GNR	Y	8, 17
Chaenothecopsis debilis (Turner & Borrer *ex* Sm.) Tibell	GNR	Y	8, 17
Chrysothrix chlorina (Ach.) J.R. Laundon	GNR	T,Y	4, 6, 17
Circinaria caesiocinerea (Nyl. *ex* Malbr.) A. Nordin, S. Savić & Tibell		Cr, We	27
Circinaria calcarea (L.) A. Nordin, S. Savić & Tibell	GNR	Cl, Cr, P, T	6, 13, 18, 27
Circinaria contorta (Hoffm.) A. Nordin, S. Savić & Tibell	G5	A, Sh, Y	8, 11, 17, 29
Circinaria hispida (Mereschk.) A. Nordin, S. Savić & Tibell	G3	Y	4, 8, 17
Cladonia acuminata (Ach.) Norrlin	G5?	Cr	27
Cladonia arbuscula (Wallr.) Flotow	G5	Y	16, 17
Cladonia arbuscula subsp. *mitis* (Sandst.) Ruoss	G5	Y	4, 8, 17
Cladonia bacilliformis (Nyl.) Glück	G4G5	Cr, Y	17, 27
Cladonia borealis S. Stenroos	G5	P?, Y	5, 8, 17
Cladonia botrytes (K.G. Hagen) Willd.	G5	Cr	27
Cladonia cariosa (Ach.) Sprengel	G5	Cl, Cr, J, T, We, Y	4, 6, 8, 13, 16 , 17, 27, 29
Cladonia carneola (Fr.) Fr.	G5	B, J, T, WY, Y	4, 6, 8, 15, 17, 29
Cladonia cenotea (Ach.) Schaerer	G5	B, Cr, J, Sh, We, T, Y	4, 6, 8, 17, 27, 29
Cladonia cervicornis subsp. *cervicornis* (Ach.) Flotow	G5T5?	P?, T, Y	5, 6, 8
Cladonia cervicornis subsp. *verticillata* (Hoffm.) Ahti	G5TNR	B, Cr, J, Sh, T, We, Y	4, 6, 16, 17, 27, 29
Cladonia chlorophaea (Flörke *ex* Summerf.) Sprengel	GU	B, Cl, Cr, J, P?, Sh, Su, T, We, Y	4, 5, 6, 8, 13, 17, 21, 27, 29
Cladonia ciliata Stirton	GNR	Y*	17
Cladonia coccifera (L.) Willd.	G5	J, T	6, 29
Cladonia coniocraea (Flörke) Sprengel	G5	B, Cl, Cr, J, Sh, T, We, Y	4, 6, 8, 13, 17, 27, 29
Cladonia cornuta (L.) Hoffm.	G3G5	B, J, Y	8, 17, 29
Cladonia crispata (Ach.) Flotow	G3G5	Cr	27
Cladonia cristatella Tuck.	G5?	Cr	27
Cladonia cyanipes (Sommerf.) Nyl.	GNR	Cr	27
Cladonia decorticata (Flörke) Sprengel	G4G5	T, Y	6, 8

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Cladonia deformis (L.) Hoffm.	G5	B, Cl, Cr, J, Sh, T, We, Y	4, 6, 8, 13, 16, 17, 27, 29
Cladonia ecmocyna subsp. *ecmocyna* Leighton	G4G5TNR	T, Y	4, 6, 8, 17
Cladonia fimbriata (L.) Fr.	G3G5	A, Cn, Cr, J, Sh, Su, T, We, WY, Y	4, 6, 8, 15, 16, 17, 21, 27, 29
Cladonia gracilis (L.) Willd.	G5	A, B, Cr, T	6, 16, 27, 29
Cladonia humilis (With.) J.R. Laundon	G5?	Y*	17
Cladonia imbricarica Kristinsson	G2G3	Cr	3
Cladonia macilenta Hoffm.	G5	B, J	29
Cladonia macilenta var. *bacillaris* (Genth) Schaerer	G5T5	Cr, Su, We	21, 27
Cladonia macrophyllodes Nyl.	G4G5	Su, Y	8, 17, 21
Cladonia mateocyatha Robbins	G5?	T	4
Cladonia norvegica Tønsberg & Holien	G4G5	T, Y	6, 8
Cladonia ochrochlora Flörke	G3G5	J, T, WY, Y	6, 8, 15, 29
Cladonia phyllophora Hoffm.	G5	J, Y	16, 17, 29
Cladonia pleurota (Flörke) Schaerer	G3G5	Cr, We, Y	8, 17, 27
Cladonia pocillum (Ach.) Grognot	G4	F, H, Na, P?, Su, T, Wa, Y	5, 6, 8, 14, 21
Cladonia pyxidata (L.) Hoffm.	G5	A, Cl, Cr, J, P?, Sh, Su, T, We, Y	4, 5, 6, 8, 13, 16, 17, 21, 27
Cladonia rei Schaerer	G3G5	T	6
Cladonia robbinsii A. Evans	G3G5	Cr, We	27
Cladonia squamosa Hoffm.	G5	Y	8
Cladonia stellaris (Opiz) Pouzar & Vězda	G5	Y*	17
Cladonia subcariosa Nyl.	G5	Y	8, 17
Cladonia subulata (L.) F.H. Wigg.	G5?	Cr, T, We, Y	6, 8, 17, 27
Cladonia sulphurina (Michaux) Fr.	G5?	B, Cr, J, Sh, Su, T, We, Y	4, 6, 8, 17, 21, 27, 29
Cladonia symphycarpia (Flörke) Fr.	G3G5	B, J, Sh, Y	8, 17, 29
Cladonia transcendens (Vainio) Vainio	G5	T	6
Cladonia verruculosa (Vainio) Ahti	G4	T, Y	6, 8
Collema coccophorum Tuck.	G3G5	Sr, Y	4, 8, 14
Collema conglomeratum Hoffm.	G5?	Cr	27
Collema crispum (Hudson) F.H. Wigg	GNR	Su	21
Collema fuscovirens (With.) J.R. Laundon	G5	Cr, Su, T, We, Y	4, 6, 8, 21, 27
Collema polycarpon Hoffm.	GNR	Sh, T, Y	6, 8, 29
Collema subflaccidum Degel.	G5?	Y	4, 8
Collema tenax (Sw.) Ach.	G3G5	Cl, Cr, F, Na, P?, Sr, T, Wa, We	5, 6, 13, 14, 23, 27
Collema undulatum Laurer *ex* Flotow	G4G5	Y	4, 8, 17
Cyphelium inquinans (Sm.) Trevisan	G3G4	Y	8, 17
Cyphelium lucidum (Th. Fr.) Th. Fr.	G3G5	Su	21
Cyphelium notarisii (Tul.) Blomb. & Forssel	GNR	Cr, We	27
Cyphelium pinicola Tibell	GNR	Y	8, 17
Cyphelium tigillare (Ach.) Ach.	G5	A, B, Cl, Cr, J, Sh, T, We, Y	4, 6, 13, 16, 17, 27, 29
Cystocoleus ebeneus (Dillwyn) Thwaites	GNR	Y	8
Dactylina ramulosa (Hooker) Tuck.	G4G5	P	5
Dendriscocaulon intricatulum (Nyl.) Henssen	GUQ	Sh	29
Dermatocarpon bachmannii Anders.	GNR	Y	17
Dermatocarpon intestiniforme (Körber) Hasse	GNR	Su	21
Dermatocarpon leptophyllodes (Nyl.) Zahlbr.	GNR	Y	8
Dermatocarpon luridum (With.) J.R. Laundon	G4G5	Su, T	6, 21
Dermatocarpon miniatum (L.) W. Mann	G3G5	Cn, Sh, Su, T, Wa, Y	4, 6, 8, 10 , 11, 17, 21, 22, 29
Dermatocarpon moulinsii (Mont.) Zahlbr.	GNR	Cr, T	6, 10, 27
Dermatocarpon reticulatum H. Magn.	G5?	J, Sh, Su, T, Y	4, 6, 8, 11, 17, 19, 21, 29
Dermatocarpon rivulorum (Arnold) Dalla Torre & Sarnth.	GNR	Su, T	6, 21

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Dimelaena oreina (Ach.) Norman	G5	A, Cl, Cn, Cr, J, P?, Sh, Su, T, We, Y	4, 5, 6, 8, 11, 13, 16, 17, 21, 27, 29
Diploschistes actinostomus (Ach.) Zahlbr.	G4G5	Cl	13
Diploschistes diacapsis (Ach.) Lumbsch	G4G5	Y	17
Diploschistes gypsaceus (Ach.) Zahlbr.	GNR	We	27
Diploschistes muscorum (Scop.) R. Sant.	G5	Cn, H, J, Na, P?, T, Wa, Y	5, 6, 8, 11, 14, 29
Diploschistes scruposus (Schreber) Norman	G5	Cl, Cr, Su, T, Y	4, 6, 8, 10, 13, 17, 21, 27
Diplotomma alboatrum (Hoffm.) Flotow	GNR	Cl, J	13, 29
Endocarpon pulvinatum Th. Fr.	G4G5	T, Y	4, 6, 8, 17
Endocarpon pusillum Hedwig	G5?	F, Na, Sr, Su, We, Y	8, 14, 17, 21, 23, 27
Endocarpon tortuosum Herre	GNR	Su	21
Ephebe solida Bornet	G3G4	WY, Y	4, 12
Evernia divaricata (L.) Ach.	G4G5	P	5
Evernia mesomorpha Nyl.	G5	Cr, Y	4, 8, 17, 27
Farnoldia jurana (Schaerer) Hertel	G3G5	Cr, T, We	6, 27
Flavocetraria nivalis (L.) Kärnefelt & Thell	G4	A, P?	5, 16
Flavopunctelia soredica (Nyl.) Hale	G3G5	Cl, Cr, We, WY, Y	8, 13, 15, 27
Fulgensia bracteata (Hoffm.) Räsänen	G5?	Sh, Wa, We, Y	4, 8, 27, 29
Fulgensia desertorum (Tomin) Poelt	G3G5	Sh	29
Fulgensia fulgens (Sw.) Elenkin	G3G5	A, WY, Y	4, 8, 16, 26
Fuscopannaria ahlneri (P.M. Jørg.) P.M. Jørg.	G4G5	Y	8, 17
Fuscopannaria mediterranea (Tav.) P.M. Jørg.	G5	Y	8
Fuscopannaria praetermissa (Nyl.) P.M. Jørg.	G5	Cr, J, Sh, Su, T, We, Y	4, 6, 8, 11, 17, 21, 27, 29
Hyperphyscia syncolla (Tuck. *ex* Nyl.) Kalb	G3G5	Cr	27
Hypocenomyce friesii (Ach.) P. James & Gotth. Schneider	G3G5	Cl, Cr, J, Sh	13, 27, 29
Hypocenomyce scalaris (Ach. *ex* Lilj.) M. Choisy	G5	Cl, Cr, J, T, We, Y	4, 6, 8, 13, 27, 29
Hypogymnia austerodes (Nyl.) Räsänen	G5	B, Cr, J, Sh, T, WY, Y	4, 6, 8, 15, 17, 27, 29
Hypogymnia farinacea Zopf	G3G5	T	6
Hypogymnia imshaugii Krog	G4	T, Y	4, 6, 8, 17
Hypogymnia physodes (L.) Nyl.	G5	Cl, Cr, J, Sh, T, We, Y	4, 6, 8, 13, 17, 27, 29
Hypogymnia tubulosa (Schaerer) Hav.	G5?	J, T, Y	6, 8, 17, 29
Icmadophila ericetorum (L.) Zahlbr.	G5	Y	8
Imshaugia aleurites (Ach.) S.F. Meyer	G5	Cr, We, WY	15, 27
Imshaugia placorodia (Ach.) S.F. Meyer	G3G5	Cr, We	27
Lecania dubitans (Nyl.) A.L. Sm.	G4?	Cr, We	27
Lecania erysibe (Ach.) Mudd	GNR	Y	8
Lecania nylanderiana A. Massal.	GNR	T	6
Lecanora albellula Nyl.	G5	B, Cr, J, Sh, Y	4, 8, 17, 27, 29
Lecanora albescens (Hoffm.) Branth & Rostr.	GNR	T, We	6, 27
Lecanora allophana Nyl.	G5?	T, Y	6, 17
Lecanora argentea Oxner & Volkova	GNR	Y	8, 17
Lecanora argopholis (Ach.) Ach.	G5	Cl, P?, Su, T, Y	4, 5, 6, 8, 13, 17, 21
Lecanora bicincta Ramond	GNR	Y	8, 17
Lecanora cadubriae (A. Massal.) Hedl.	G4?	B, Cr, J, Sh, Y	8, 17, 27, 29
Lecanora caesiorubella Ach.	G4G5	Cl	13
Lecanora cenisia Ach.	G5	B, Cr, J, P?, Sh, Su, T, We, Y	4, 5, 6, 8, 17, 21, 27, 29
Lecanora chlarotera Nyl.	G5	Cr, T, Y	6, 8, 17, 27
Lecanora circumborealis Brodo & Vitik.	G5	Y	8, 17
Lecanora conifera rum Printzen	GNR	Cr	11
Lecanora crenulata Hooker	G3G5	T, Y	4, 6, 8, 17
Lecanora densa (Śliwa & Wetmore) Printzen	GNR	Cr	11

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Lecanora dispersa (Pers.) Summerf.	G5	Cr, J, P?, Sh, T, Wa, We, Y	5, 6, 8, 17, 27, 29
Lecanora epibryon (Ach.) Ach.	G5	P?, T	5, 6
Lecanora expallens Ach.	G3G5	Cr	27
Lecanora frustulosa (Dickson) Ach.	GNR	Cr	27
Lecanora fuscescens (Sommerf.) Nyl.	G3G5	Y	8, 17
Lecanora garovaglii (Körber) Zahlbr.	G4G5	Cl, T, Y	4, 6, 8, 13, 17
Lecanora hagenii (Ach.) Ach.	G5	Cl, Cn, Cr, Sr, T, We, Y	6, 8, 13, 16, 17, 27
Lecanora hypoptoides (Nyl.) Nyl.	GNR	Y	8, 16, 17
Lecanora impudens Degel.	G5	Cr, J, Y	8, 17, 27, 29
Lecanora intricata (Ach.) Ach.	G5?	Cr, Y	8, 17, 27
Lecanora laxa (Śliwa & Wetmore) Printzen	GNR	B, J, Sh	29
Lecanora marginata (Schaerer) Hertel & Rambold	G4G5	P?, T	5, 6
Lecanora meridionalis H. Magn.	GNR	Su, Y	8, 17, 21
Lecanora mughicola Nyl.	GNR	J, Su	21, 29
Lecanora muralis (Schreber) Rabenh.	G5	A, Cl, Cn, Cr, J, P?, Su, T, We, Y	4, 5, 6, 8, 11, 13, 16, 17, 21, 27, 29
Lecanora nigromarginata H. Magn.	GNR	T, Y	4, 6, 8
Lecanora novomexicana H. Magn.	G4G5	B, J, Sh, Su, T, Wa, Y	4, 6, 8, 10, 21, 29
Lecanora phaedrophthalma Poelt	GNR	Y	8, 17
Lecanora polytropa (Hoffm.) Rabenh.	G5	B, Cr, J, P?, Su, T, Wa, We, Y	4, 5, 6, 8, 17, 21, 27, 29
Lecanora pseudistera Nyl.	GNR	J, Sh	29
Lecanora pulicaris (Pers.) Ach.	G5	T, Y	6, 8
Lecanora rupicola (L.) Zahlbr.	G5	Cl, Cr, Su, T, We, Y	6, 8, 13, 17, 21, 27
Lecanora saligna (Schrader) Zahlbr.	G3G5	B, Cl, Cr, J, Sh, Su, We, Y	4, 8, 13, 17, 21, 27, 29
Lecanora sambuci (Pers.) Nyl.	G3G5	Cr	27
Lecanora semipallida H. Magn.	GNR	Y	17
Lecanora subrugosa Nyl.	G4G5	T	6
Lecanora symmicta (Ach.) Ach.	G5	Su	21
Lecanora varia (Hoffm.) Ach.	G5	Cr, Su, T, Y	6, 8, 17, 21, 27
Lecanora wetmorei Đliwa	GNR	Y*	17
Lecidea albohyalina (Nyl.) Th. Fr.		Y	8, 17
Lecidea atrobrunnea (Lam. & DC.) Schaerer	G4G5	B, Cl, Cn, Cr, J, P?, Sh, Su, T, Wa, We, Y	4, 5, 6, 8, 13, 16, 17, 21, 27, 29
Lecidea auriculata Th. Fr.	G5?	Cr, J, P?, Sh, Su, T, We, Y	5, 6, 8, 17, 21, 27, 29
Lecidea berengeriana (A. Massal.) Th. Fr.		Cl, Cr, We, Y	4, 13, 27
Lecidea confluens (Weber) Ach.	G3G5	Y	8
Lecidea lapicida (Ach.) Ach.	G5	Y	8, 17
Lecidea leucothallina Arnold	G2G4	Su	21
Lecidea lithophila (Ach.) Ach.	G3G5	Cr	27
Lecidea plana (J. Lahm.) Nyl.	G3G5	P?, T	5, 6
Lecidea syncarpa Zahlbr.	GNR	Su, Y	8, 17, 21
Lecidea tessellata Flörke	G5	B, Cl, Cr, J, Sh, Su, We, Y	4, 8, 13, 17, 21, 27, 29
Lecidea turgidula Fr.	GNR	Su, Y	8, 17, 21
Lecidella anomaloides (A. Massal.) Hertel & H. Kilias	GNR	P	18
Lecidella carpathica Körber	G5?	Cl, Sh, Su, Y	8, 13, 17, 21, 29
Lecidella effugiens (Nilson) Knoph & Hertel	GNR	Sh	29
Lecidella elaeochroma (Ach.) M. Choisy	G5?	Y	8, 17
Lecidella euphorea (Flörke) Hertel	G5?	Cl, Cn, Cr, J, Sh, Su, Wa, We, T, Y	4, 6, 8, 11, 13, 17, 21, 27, 29
Lecidella patavina (A. Massal.) Knoph & Leuckert	GNR	Sh, Wa, Y	8, 17, 29
Lecidella stigmatea (Ach.) Hertel & Leuckert	G5	B, Cl, Cr, J, P?, Sh, Su, T, Wa, We, Y	4, 5, 6, 8, 13, 17, 21, 27, 29
Lecidella viridans (Flotow) Körber	G3G5	Cl	13

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Lecidoma demissum (Rutstr.) Gotth. Schneider & Hertel	G4G5	Y	8, 17
Lempholemma cladodes (Tuck.) Zahlbr.	GNR	We	27
Lempholemma polyanthes (Bernh.) Malme	GNR	T	6
Lepraria alpina (B. de Lesd.) Tretiach & Baruffo	GNR	P?, T, Y	5, 6, 8, 17
Lepraria caesioalba (B. de Lesd.) J.R. Laundon	GNR	Y	8, 17
Lepraria diffusa var. *diffusa* (J.R. Laundon) Kukwa	GNR	Y	8
Lepraria incana (L.) Ach.	GNR	Y	4, 8
Lepraria lobificans Nyl.	GNR	Y	8, 17
Lepraria membranacea (Dickson) Vainio	GNR	Cl, Su, Y	4, 8, 13, 21
Lepraria neglecta (Nyl.) Erichsen	GNR	A, P?, Y	2, 4, 5, 8
Lepraria vouauxii (Hue) R.C. Harris		Su, We	21, 27
Leprocaulon albicans (Th. Fr.) Nyl. *ex* Hue	G3G4	Su, Y	4, 8, 17, 21
Leprocaulon gracilescens (Nyl.) I.M. Lamb & Ward	G4G5	Y	8
Leprocaulon subalbicans (I.M. Lamb) I.M. Lamb & Ward	GNR	P	5
Leptochidium albociliatum (Desm.) M. Choisy	G4G5	Sh, Su, Y	8, 21, 29
Leptogium burnetiae C.W. Dodge	G3G5	Y	8, 17
Leptogium cyanescens (Rabenh.) Körber	G5	T	6
Leptogium gelatinosum (With.) J.R. Laundon	G4G5	Cr, We, Y	8, 17, 27
Leptogium hirsutum Sierk	G5Q	Y	8
Leptogium lichenoides (L.) Zahlbr.	G5	Y	8, 17
Leptogium saturninum (Dickson) Nyl.	G4	Cr, T, Y	4, 6, 8, 27
Leptogium tenuissimum (Dickson) Körber	GNR	Cr, We, Y	4, 8, 27
Letharia columbiana (Nutt.) J.W. Thomson	G3G5	T, WY, Y	4, 6, 8, 15, 17
Letharia vulpina (L.) Hue	G5	A, B, Cl, Cr, J, Sh, Su, T, We, WY, Y	1, 4, 6, 8, 10, 13, 15, 16, 17, 21, 22, 27, 29
Lichenoconium lecanorae (Jaap) D. Hawksw.	GNR	Y	17
Lobothallia alphoplaca (Wahlenb.) Hafellner	G5	A, Cl, T, We, Y	4, 6, 8, 11, 13, 17, 27
Massalongia carnosa (Dickson) Körber	G5?	P?, Y	5, 8
Megaspora verrucosa (Ach.) Hafellner & V. Wirth	G5	J, P?, Sh, Y	4, 5, 8, 17, 29
Melanelia disjuncta (Erichsen) Essl.	G5	B, Cl, Sh, Su, T, Y	4, 6, 8, 13, 17, 21, 29
Melanelia sorediata (Ach.) Goward & Ahti	GNR	Cr, J, Su, T, We, Y	4, 6, 8, 21, 27, 29
Melanelia stygia (L.) Essl.	G4G5	T, Y	4, 6, 8
Melanelia tominii (Oxner) Essl.	G4G5	Cl, Cr, Sh, We, Y	4, 8, 13, 17, 27, 29
Melanelixia subargentifera (Nyl.) O. Blanco et al.	G4G5	Cr	27
Melanohalea elegantula (Zahlbr.) O. Blanco et al.	G5?	B, Cl, Cr, J, Sh, Su T, Wa, We, WY, Y	4, 6, 8, 13, 15, 17, 21, 27, 29
Melanohalea exasperata (DeNot.) O. Blanco et al.	G3G5	Cr, We, Y	17, 27
Melanohalea exasperatula (Nyl.) O. Blanco et al.	G5	B, Cr, J, Sh, Su, T, WY, Y	4, 6, 8, 15, 17, 21, 27, 29
Melanohalea infumata (Nyl.) O. Blanco et al.	GNR	Cl, T, Y	4, 6, 8, 13, 17
Melanohalea subelegantula (Essl.) O. Blanco et al.	GNR	Su, T, WY, Y	4, 6, 8, 15, 17, 21
Melanohalea subolivacea (Nyl.) O. Blanco et al.	G5	A, Cl, J, Sh, T, Y	1, 4, 6, 8, 13, 17, 29
Micarea denigrata (Fr.) Hedl.	G2G4	Cr, J, We, Y	8, 17, 27, 29
Micarea misella (Nyl.) Hedl.	GNR	B, J, Y	8, 17, 29
Micarea prasina Fr.	GNR	Cr	27
Muellerella erratica (A. Massal.) Hafellner & V. John	GNR	Y	25
Mycobilimbia berengeriana (A. Massal.) Hafellner & V. Wirth	GNR	J, Y	8, 17, 29
Mycobilimbia epixanthoides (Nyl.) Vitik., Ahti, Kuusinen, Lommi & T. Ulvinen	GNR	Sh, Y	8, 17, 29
Mycobilimbia hypnorum (Lib.) Kalb & Hafellner	GNR	Y	8, 17
Mycobilimbia pilularis (Körber) Hafellner & Türk	GNR	We	27
Mycobilimbia tetramera (De Not.) Vitik., Ahti, Kuusinen, Lommi & T. Ulvinen	G4G5	Y	8, 17
Mycocalicium subtile (Pers.) Szatala	G4G5	Su, Y	8, 17, 21

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Mycomicrothelia wallrothii (Hepp) D. Hawksw.	GNR	Cr	27
Myriospora heppii (Nägeli *ex* Körber) Hue	G4G5	T	6
Naetrocymbe punctiformis (Schrank) R.C. Harris		Y	17
Nephroma parile (Ach.) Ach.	G3G5	T, Y	4, 6, 8, 17
Ochrolechia androgyna (Hoffm.) Arnold	G4G5	B, Cr, J, Su, Y	8, 21, 27, 29
Ochrolechia upsaliensis (L.) A. Massal.	G4G5	J, P?, Sh, Y	4, 5, 8, 17, 29
Ophioparma lapponica (Räsänen) Hafellner & R.W. Rogers	G5	Y	8, 17
Pannaria conoplea (Ach.) Bory	G3G4	Su	21
Parmelia fraudans (Nyl.) Nyl.	G4G5	Y	8, 17
Parmelia hygrophila Goward & Ahti	G3G5	Y	8
Parmelia omphalodes (L.) Ach.	G2G4	Sh	29
Parmelia saxatilis (L.) Ach.	G5	J, Sh, Y	4, 8, 17, 29
Parmelia sulcata Taylor	G5	B, Cl, Cr, J, Sh, T, We, WY, Y	4, 6, 8, 13, 15, 17, 27, 29
Parmeliella cyanolepra (Tuck.) Herre	GNR	Y	4
Parmeliopsis ambigua (Wulfen) Nyl.	G3G5	B, Cl, Cr, J, Sh, Su, T, We,WY, Y	4, 6, 8, 13, 15, 17, 21, 27, 29
Parmeliopsis hyperopta (Ach.) Arnold	G3G5	B, Cl, Cr, J, Sh, Su, T, We,WY, Y	4, 6, 8, 13, 15, 17, 21, 27, 29
Peltigera aphthosa (L.) Willd.	G5	A, B, Cr, J, Sh, T, Y	4, 6, 8, 10, 16, 17, 27, 29
Peltigera canina (L.) Willd.	G5	A, Cl, Cr, J, Sh, Su, T, We, Y	2, 4, 6, 8, 10, 13, 16, 17, 21, 27, 29
Peltigera collina (Ach.) Schrader	G4G5	Cr, Sh, T, Y	4, 8, 10, 27, 29
Peltigera didactyla (With.) J.R. Laundon	G5	J, Sh, Su, T, Y	6, 8, 17, 21, 29
Peltigera elisabethae Gyelnik	G5?	Y	8, 17
Peltigera kristinssonii Vitik.	G4	T, Y	6, 8
Peltigera lepidophora (Nyl. *ex* Vainio) Bitter	G4	Cr, We, Y	17, 27
Peltigera leucophlebia (Nyl.) Gyelnik	G4	B, J, P, Sh, Y	8, 11, 17, 29
Peltigera malacea (Ach.) Funck	G5	B, Cl, J, Sh, Su, T, Y	4, 6, 8, 13, 17, 21, 29
Peltigera membranacea (Ach.) Nyl.	G4G5	T, Y	6, 8
Peltigera neckeri Hepp *ex* Müll. Arg.	G4G5	T	6
Peltigera polydactylon (Necker) Hoffm.	G5?	Cl, Cr, Su, T, We, Y	4, 6, 8, 10, 13, 17, 22, 27
Peltigera ponojensis Gyelnik	G4G5	B, Cn, J, Sh, T, Wa, Y	6, 8, 11, 29
Peltigera praetextata (Flörke *ex* Sommerf.) Zopf	G3G5	B, Cr, T, Y	6, 8, 27, 29
Peltigera retifoveata Vitik.	G4?	T, Y	6, 8
Peltigera rufescens (Weiss) Humb.	G5	B, Cl, J, P?, Sh, Su, T, Y	4, 5, 6, 8, 13, 16, 17, 21, 29
Peltigera venosa (L.) Hoffm.	G4G5	B, Cl, Cr, J, Sh, Su, T, Y	4, 6, 8, 13, 17, 21, 27, 29
Pertusaria saximontana Wetmore	G3G5	Cl, Cr	13, 27
Phaeophyscia ciliata (Hoffm.) Moberg	G4G5	Cr, J, Su, WY	15, 21, 27, 29
Phaeophyscia decolor (Kashiw.) Essl.	G3G5	B, J, Sh, T, Wa, Y	6, 8, 17, 29
Phaeophyscia endococcina (Körber) Moberg	G3G4	Su, Y	4, 8, 21
Phaeophyscia hispidula (Ach.) Essl.	G4G5	Y	8, 17
Phaeophyscia nigricans (Flörke) Moberg	G4	Cr, Su, T, We, Y	6, 8, 17, 21, 27
Phaeophyscia orbicularis (Necker) Moberg	G5	Cl, Cr, Y	4, 8, 13, 27
Phaeophyscia sciastra (Ach.) Moberg	G4	Cl, Cr, J, Sh, Su, T, Y	4, 6, 8, 13, 17, 21, 27, 29
Phaeorrhiza nimbosa (Fr.) H. Mayrhofer & Poelt	G4G5	P?, Y	4, 5, 8
Phaeorrhiza sareptana (Tomin) H. Mayrhofer & Poelt	GNR	B, J, Sh, Wa, Y	8, 17, 29
Physcia adscendens (Fr.) H. Olivier	G5	B, Cl, Cn, Cr, J, Sh, T, We, WY, Y	4, 6, 8, 11, 13, 15, 17, 27, 29
Physcia aipolia (Ehrh. *ex* Humb.) Fürnr.	G5	Cl, T, WY, Y	4, 6, 8, 13, 15, 17
Physcia biziana (A. Massal.) Zahlbr.	G5	T, Y	6, 8, 17
Physcia caesia (Hoffm.) Fürnr.	G5	Cl, Cr, J, P?, Sh, Su, T, We, Y	4, 5, 6, 8, 13, 17, 21, 27, 29

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Physcia dimidiata (Arnold) Nyl.	G5?	T, WY, Y	6, 8, 15, 17
Physcia dubia (Hoffm.) Lettau	G5	Cl, Cr, Sh, Su, T, Wa, We, Y	4, 6, 8, 13, 17, 21, 27, 29
Physcia phaea (Tuck.) J.W. Thomson	G4G5	Cl, Sh, Su, T, Y	4, 6, 8, 13, 17, 21, 29
Physcia stellaris (L.) Nyl.	G5	A, Cr, J, Sh, T, Y	4, 6, 8, 16, 17, 27, 29
Physcia subalbinea Nyl.	GNR	Y	8
Physcia tenella (Scop.) DC.	G4	A	16
Physcia tribacia (Ach.) Nyl.	G4?	Cl	13
Physciella chloantha (Ach.) Essl.	G5?	Sh, WY	15, 29
Physconia detersa (Nyl.) Poelt	G5?	J, Y	4, 8, 29
Physconia enteroxantha (Nyl.) Poelt	G3G5	Y	4, 8
Physconia isidiigera (Zahlbr.) Essl.	G3G4	Y	8
Physconia leucoleiptes (Tuck.) Essl.	G3G5	Y	8, 17
Physconia muscigena (Ach.) Poelt	G3G5	B, Cl, Cr, J, P?, Sh, Su, T, Y	4, 5, 6, 8, 13, 17, 21, 27, 29
Physconia perisidiosa (Erichsen) Moberg	G3G5	Sh, Su, Y	8, 17, 21, 29
Placidium lachneum (Ach.) Breuss	G5	Cl, Na, SE, Y	4, 13, 14, 24
Placidium lacinulatum (Ach.) Breuss	G5	J, Sh, Wa	29
Placidium norvegicum (Breuss) Breuss	GNR	T	6
Placidium squamulosum (Ach.) Breuss	G5?	F, Na, Sr, T, Wa	6, 14
Placopyrenium fuscellum (Turner) Gueidan & Cl. Roux	GNR	T, We, Y	6, 8, 17, 27
Placynthiella dasaea (Stirton) Tønsberg	GNR	Sh, Y	8, 29
Placynthiella icmalea (Ach.) Coppins & P. James	GNR	Y	8
Placynthiella oligotropha (J.R. Laundon) Coppins & P. James	G3G4	B, J, Sh, Y	8, 17, 29
Placynthiella uliginosa (Schrader) Coppins & P. James	G5	Cr, J, T, Y	4, 6, 8, 17, 27, 29
Placynthium nigrum (Hudson) Gray	G5	Cr, Sh, We, Y	8, 17, 27, 29
Platismatia glauca (L.) W.L. Culb.. & C.F. Culb.	G5	Cr, Sh, We, Y	8, 17, 27, 29
Pleopsidium chlorophanum (Wahlenb.) Zopf	G5	A, Cl, Cn, Cr, P?, Su, T, Y	4, 5, 6, 13, 16, 17, 21, 27
Pleopsidium flavum (Bellardi) Körber	GNR	J, Sh, Y	8, 17, 29
Polychidium muscicola (Sw.) Gray	G3G5	Su, T, Y	4, 6, 8, 21
Polysporina simplex (Davies) Vězda	G5?	Sh, T, Wa	6, 29
Polysporina urceolata (Anzi) Brodo	GNR	B, Sh, Wa	29
Porocyphus coccodes (Flotow) Körber	G3G5	Su	21
Porpidia crustulata (Ach.) Hertel & Knoph	G4G5	Cr, Sh, T, Y	6, 8, 17, 27, 29
Porpidia macrocarpa (DC.) Hertel & A.J. Schwab	G4	T, Y	6, 8
Porpidia speirea (Ach.) Kremp.	G3G5	Sh, Sr	16, 29
Pronectria erythrinella (Nyl.) Lowen	GNR	Y	17
Protoblastenia rupestris (Scop.) J. Steiner	G4G5	Cr, Sh, T, Y	6, 8, 17, 27, 29
Protopannaria pezizoides (Weber) P.M. Jørg. & S. Ekman	G4G5	Cl, J, Su, T, Y	6, 8, 13, 17, 21, 29
Protoparmelia badia (Hoffm.) Hafellner	G4G5	Cr, J, P?, Sh, Su, T, Y	4, 5, 6, 8, 17, 21, 27, 29
Pseudephebe minuscula (Nyl. *ex* Arnold) Brodo & D. Hawksw.	G4G5	Su, T, Y	6, 8, 21
Pseudephebe pubescens (L.) M. Choisy	G5?	B, J, P?, Sh, T, Y	4, 5, 6, 8, 17, 29
Psora cerebriformis W.A. Weber	G4G5	Cn, Y	8, 11, 17
Psora decipiens (Hedwig) Hoffm.	G5	F, Sh, T, Wa, We, Y	4, 6, 8, 14, 23, 27, 29
Psora globifera (Ach.) A. Massal.	G4G5	Cr, J, T, Y	4, 6, 8, 17, 27, 29
Psora himalayana (Church. Bab.) Timdal	G3G5	B, J, Sh, T, Wa, Y	6, 8, 17, 29
Psora icterica (Mont.) Müll. Arg.	G5?	Y	8
Psora luridella (Tuck.) Fink	G2G3	Cl, Su	13, 21
Psora montana Timdal	G3G5	H, J, Su, T, Wa, Y	6, 8, 14, 17, 21, 29
Psora nipponica (Zahlbr.) Gotth. Schneider	G4G5	T, We, Y	4, 6, 8, 17, 27
Psora russellii (Tuck.) A. Schneider	G4G5	Cl, Cr, We	13, 27

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Psora tuckermannii R.A. Anderson *ex* Timdal	G5	T, Wa, Y	6, 8, 14, 17
Psoroma hypnorum (Vahl) Gray	G5	B, J, P?, T, Y	4, 5, 6, 8, 17, 29
Psoroma tenue Henssen var. *boreale* Henssen	G3G4T2T4	Su	21
Psorotichia schaereri (A. Massal.) Arnold	GNR	Cr, We	27
Punctelia borreri (Turner) Krog	GNR	Cr	27
Pycnora xanthococca (Sommerf.) Hafellner	GNR	Cr, Y	8, 27
Ramalina intermedia (Delise *ex* Nyl.) Nyl.	G4G5	Cl	13
Ramalina pollinaria (Westr.) Ach.	G4	Cr	27
Ramboldia elabens (Fr.) Kantvilas & Elix	GNR	T	6
Rhizocarpon badioatrum (Flörke *ex* Sprengel) Th. Fr.	G4G5	Su	21
Rhizocarpon cinereovirens (Müll. Arg.) Vainio	G4G5	B, J	29
Rhizocarpon concentricum (Davies) Beltr.	G4G5	Cr	27
Rhizocarpon disporum (Nägeli *ex* Hepp) Müll. Arg.	G4G5	A, Cl, Cr, J, P?, Su, T, We, Y	4, 5, 6, 8, 11, 13, 17, 21, 27, 29
Rhizocarpon distinctum Th. Fr.	G3G5	Cr	27
Rhizocarpon ferax H, Magn.	GNR	Su	21
Rhizocarpon geminatum Körber	G5	J, P?, Sh, Su, T, Y	5, 6, 8, 17, 21, 29
Rhizocarpon geographicum (L.) DC.	G5	Cr, J, P?, Sh, Su, T, We, Y	4, 5, 6, 8, 17, 21, 27, 29
Rhizocarpon grande (Flörke *ex* Flotow) Arnold	G5	Cr, J, Sh, Su, T, Y	6, 8, 17, 21, 27, 29
Rhizocarpon hochstetteri (Körber) Vainio	G4G5	Y	17
Rhizocarpon lavatum (Fr.) Hazsl.	GNR	Su	21
Rhizocarpon lindsayanum Räsänen	GNR	Su	21
Rhizocarpon macrosporum Räsänen	G3G4	B, J, Sh, Y	8, 29
Rhizocarpon reductum Th. Fr.	GNR	Cr	11
Rhizocarpon renneri Poelt	GNR	Su	21
Rhizocarpon riparium Räsänen	G4G5	Cl, T, Y	6, 8, 13
Rhizocarpon saanaënse Räsänen	GNR	Su	21
Rhizoplaca chrysoleuca (Sm.) Zopf	G5	A, Cl, Cn, Cr, J, P?, Sh, Su, T, We, Y	4, 5, 6, 8, 11, 13, 16, 17, 21, 27, 29
Rhizoplaca haydenii (Tuck.) W.A. Weber	G2G3	A, Cn, J, P?, Na, Sh, Sr	5, 11, 14, 16, 29
Rhizoplaca melanophthalma (DC.) Leuckert & Poelt	G3G5	B, Cl, Cr, J, P?, Sh, Su, T, Wa, We, Y	4, 5, 6, 8, 10, 13, 21, 22, 27, 29
Rhizoplaca peltata (Ramond) Leuckert & Poelt	G3G4	Y	4, 8
Rhizoplaca subdiscrepans (Nyl.) R. Sant.	G4G5	J, Su	21, 29
Rimularia insularis (Nyl.) Rambold & Hertel	GNR	Cr, T, We, Y	4, 6, 8, 27
Rinodina archaea (Ach.) Arnold	G4G5	B, J, Sh, T, Y	4, 6, 8, 17, 29
Rinodina bischoffii (Hepp) A. Massal.	G4G5	T, We	6, 27
Rinodina calcigena (Th. Fr.) Lynge	G3G5	T	6
Rinodina colobina (Ach.) Th. Fr.	GNR	Cr	27
Rinodina coloradiana H. Magn.	GNR	A	11
Rinodina confragosa (Ach.) Körber	GNR	Cr, Y	4, 8, 27
Rinodina exigua (Ach.) Gray	GNR	Cl, T, Y	6, 13, 17
Rinodina freyi H. Magn.	GNR	Y	17
Rinodina gennarii Bagl.	GNR	Y	4, 8
Rinodina imshaugii Sheard	GNR	A	11
Rinodina milvina (Wahlenb.) Th. Fr.	GNR	Cr, T	6, 27
Rinodina mniaraea (Ach.) Körber	G5?	B, Su, Y	8, 11, 17, 21
Rinodina obnascens (Nyl.) Oliv.		Su	21
Rinodina olivaceobrunnea C.W. Dodge & Baker	GNR	P?, We, Y	4, 5, 17, 27
Rinodina orculata Poelt & M. Steiner	GNR	Y	17
Rinodina parasitica H. Mayrhofer & Poelt	GNR	Y	17
Rinodina pyrina (Ach.) Arnold	GNR	A, Su, T	6, 11, 21
Rinodina subminuta H. Magn.	GNR	T	6
Rinodina turfacea (Wahlenb.) Körber	G5?	A, Y	8, 17, 16
Sagedia mastrucata (Wahlenb.) A. Nordin, S. Savić & Tibell	GNR	Cr	27
Sarcogyne clavus (DC.) Kremp.	G4	Cl, We	13, 27
Sarcogyne dakotensis H. Magn.	GNR	A	11
Sarcogyne privigna (Ach.)A. Massal.	G3G4	Cr	27

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Sarcogyne regularis Körber	G5	Cr, Sh, We, Y	8, 17, 27, 29
Sclerophora peronella (Ach.) Tibell	GNR	Y	8
Seirophora contortuplicata (Ach.) Fröden	G3G5	Sh	29
Silobia scabrida (H. Magn.) M. Westb.	G3G5	B	29
Silobia smaragdula (Wahlenb.) M. Westb. & Wedin	G4G5	Cl, Cr, T, We	6, 13, 27
Solorina bispora Nyl.	G3G5	T	6
Solorina crocea (L.) Ach.	G5?	P?, Su, T, Y	4, 5, 6, 8, 17, 21
Sphaerellothecium abditum Triebel	GNR	Y	25
Sphaerellothecium contextum Triebel	GNR	Sh	25
Spilonema revertens Nyl.	G3G5	Cl	13
Sporastatia testudinea (Ach.) A. Massal.	G5?	P?, Su, T, Y	4, 5, 6, 8, 17, 21
Squamarina lentigera (Weber) Poelt	G3G5	Cn, We, Y	4, 11, 27
Staurothele areolata (Ach.) Lettau	G4G5	Su, Y	8, 17, 21
Staurothele clopimoides (Arnold) J. Stein	G3G5	Su, Y	8, 17, 21
Staurothele drummondii (Tuck.) Tuck.	G5	B, Cl, Cr, Sh, T, We, Y	4, 6, 8, 10, 13, 17, 27, 29
Staurothele fissa (Taylor) Zwackh	G4G5	Su, T, Y	6, 8, 17, 21
Stereocaulon alpinum Laurer *ex* Funck	G5	P?, T	5, 6
Stereocaulon glareosum (Savicz) H. Magn.	G5	Su, Y	8, 17, 21
Stereocaulon paschale (L.) Hoffm.	G5	P?, Y	5, 8, 17
Stereocaulon rivulorum H. Magn.	G5	Su, Y	4, 21
Stereocaulon tomentosum Fr.	G5	A, Cr, Y	4, 8, 16, 17, 27
Strangospora microhaema (Norman) R.A. Anderson	GNR	Cn	11
Tephromela atra (Hudson) Hafellner	G5	Cl	13
Tetramelas papillatus (Sommerf.) Kalb	G5?	P?, Y	4, 5, 8, 17
Tetramelas triphragmioides (Anzi) A. Nordin & Tibell	G4	Y	8, 17
Thamnogalla crombiei (Mudd) D. Hawksw.	GNR	P	25
Thamnolia subuliformis (Ehrh.) W.L. Culb.	G3G5	Y	4, 8, 17
Thamnolia vermicularis (Sw.) Ach. *ex* Schaerer	G3G5	P?, Y	4, 5, 8, 17
Thelenella muscorum var. *muscorum* (Fries) Vainio	GNR	Cl	13
Thelocarpon epibolum Nyl.	G2G3	Y	8
Thelomma ocellatum (Körber) Tibell	GNR	Y	8
Thrombium epigaeum (Pers.) Wallr.	G4G5	Y	8, 17
Thyrea confusa Henssen	G3G5	Sh	29
Toninia alutacea (Anzi) Jatta	G4G5	Y	17
Toninia candida (Weber) Th. Fr.	G3G5	Y	4, 8
Toninia ruginosa (Tuck.) Herre	G3G5	Y	8, 17
Toninia sedifolia (Scop.) Timdal	G5	Sh, T, Wa, Y	6, 8, 14, 17, 29
Toninia squalida (Ach.) A. Massal.	G3G5	Y	4, 8
Trapelia coarctata (Turner *ex* Sm. & Sow.) M. Choisy	G4G5	Y	16, 17
Trapeliopsis flexuosa (Fr.) Coppins & P. James	G5	B, J, Sh, Wa, Y	4, 8, 29
Trapeliopsis granulosa (Hoffm.) Lumbsch	GNR	Cl, Cr, Sh, Su, T, We, Y	6, 8, 13, 21, 27, 29
Tuckermanella fendleri (Nyl.) Essl.	G5?	Cr, We, Y	17, 27
Tuckermannopsis chlorophylla (Willd.) Hale	G4G5	Cl, J, T, Y	8, 13, 17, 29
Tuckermannopsis sepincola (Ehrh.) Hale	G5	Cr, We	27
Umbilicaria americana Poelt & T.H. Nash	G5?	J, Sh, Su, Y	8, 17, 22, 29
Umbilicaria angulata Tuck.	G4?	Y	8
Umbilicaria decussata (Vill.) Zahlbr.	G3?	Su	21
Umbilicaria deusta (L.) Baumg.	G5	Su, Y	4, 8, 17, 21
Umbilicaria hirsuta (Sw. *ex* Westr.) Hoffm.	G2G4	Y	4, 8
Umbilicaria hyperborea (Ach.) Hoffm.	G3G5	B, Cr, J, P?, Sh, Su, T, We, Y	4, 5, 6, 8, 17, 21 27, 29
Umbilicaria krascheninnikovii (Savicz) Zahlbr.	G4?	B, P? , T, Y	4, 5, 6, 8, 29
Umbilicaria mammulata (Ach.) Tuck.	G4G5	Y*	17
Umbilicaria polyphylla (L.) Baumg.	G5?	Y	16, 17
Umbilicaria proboscidea (L.) Schrader	G5	Y	8, 17
Umbilicaria torrefacta (Lightf.) Schrader	G5?	Cl, Cr, T, We, Y	6, 8, 13, 17, 27
Umbilicaria vellea (L.) Hoffm.	G4?	Cr, P?, Sh, Su, T, Y	4, 5, 6, 8, 16, 17, 21, 27, 29
Umbilicaria virginis Schaerer	G5?	P?, Su, T, Y	4, 5, 6, 8, 17, 21

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Usnea baileyi (Stirton) Zahlbr.	G2G5	T	10
Usnea cavernosa Tuck.	G3G5	Cr	27
Usnea fulvoreagens (Räsänen) Räsänen	GNR	T, Y	4, 10
Usnea hirta (L.) F.H. Wigg.	G3G5	A, Cl, Cr, Su, T, We, WY, Y	1, 4, 8, 10, 13, 15, 21, 27
Usnea lapponica Vainio	G5?	B, Cr, J, Sh, Su, T, Wa, We, WY, Y	6, 8, 15, 21, 27, 29
Usnea subfloridana Stirton	GNR	Su, T	10, 22
Usnea substerilis Motyka	GNR	T, Y	6, 8, 17
Vahliella leucophaea (Vahl) P.M. Jørg.	G5?	Su, T, Y	4, 6, 21
Verrucaria acrotella Ach.	G4G5	Y	8
Verrucaria caerulea DC.	GNR	T	6
Verrucaria compacta (A. Massal.) Jatta	G3G4	NC, SW, T	6, 24
Verrucaria glaucovirens Grummann	GNR	Cr, T, We	6, 27
Verrucaria inficiens Breuss	G3	Cl, SW	13, 24
Verrucaria muralis Ach.	G5?	Sh, Y	8, 17, 29
Verrucaria nigrescens Pers.	G5	T	6
Verrucaria nigrescentoidea Fink	GNR	Y	8
Verrucaria rupestris Schrader	G3G5	Cr, Sh, We	27, 29
Vulpicida canadensis (Räsänen) J.-E. Mattsson & M.J. Lai	G3G5	Y	8, 17
Vulpicida pinastri (Scop.) J.-E. Mattsson & M.J. Lai	G4G5	A, B, Cr, J, Sh, T, We, WY, Y	1, 4, 6, 8, 15, 17, 27, 29
Vulpicida tilesii (Ach.) J.-E. Mattsson & M.J. Lai	G4G5	P?	5
Xanthomendoza fallax (Hepp *ex* Arnold) Søchting, Kärnefelt & S. Kondr.	G5	Cl, Cr, Su, T, WY, Y	4, 6, 8, 13, 15, 17, 21, 27
Xanthomendoza fulva (Hoffm.) Søchting, Kärnefelt & S. Kondr.	G5	B, Cn, J, Sh, WY, Y	8, 11, 15, 17, 29
Xanthomendoza galericulata L. Lindblom	GNR	B, Sh	29
Xanthomendoza mendozae (Räsänen) S. Kondr. & Kärnefelt	GNR	Sh, Y	8, 17, 29
Xanthomendoza montana (L. Lindblom) Søchting, Kärnefelt & S. Kondr.	GNR	Cn, J, Sh, Y	8, 11, 17, 29
Xanthomendoza oregana (Gyelnik) Søchting, Kärnefelt & S. Kondr.	GNR	WY, Y	8, 15, 17
Xanthomendoza ulophyllodes (Räsänen) Søchting, Kärnefelt & S. Kondr.	G4G5	Y	8, 17
Xanthoparmelia chlorochroa (Tuck.) Hale	G5	A, Cl, Cn, Cr, F, J, Na, Sr, T, Wa, We, Y	4, 8, 10, 11, 13, 14, 27, 29
Xanthoparmelia coloradoënsis (Gyelnik) Hale	G5	Cl, J, P?, Sh, T, Y	4, 5, 6, 8, 13, 29
Xanthoparmelia conspersa (Ehrh. *ex* Ach.) Hale	G5	A, Cn, Cr, Y	16, 27
Xanthoparmelia cumberlandia (Gyelnik) Hale	G5	J, Sh, Su, T, Y	4, 6, 8, 17, 21, 22, 29
Xanthoparmelia lavicola (Gyelnik) Hale	G4G5	Y	8, 17
Xanthoparmelia lineola (E.C. Berry) Hale	G5	Cr, P?, T, We, Y	4, 5, 6, 8, 17, 27
Xanthoparmelia lipochlorochroa Hale & Eli	G2?	L	9
Xanthoparmelia loxodes (Nyl.) Crespo, O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch	G3G5	Cl, Cr, We, Y	8, 13, 27
Xanthoparmelia mexicana (Gyelnik) Hale	G5	Cr, J, Y	4, 8, 17, 27, 29
Xanthoparmelia neochlorochroa Hale	G3G5	F	14
Xanthoparmelia neowyomingica Hale	G1	WY	12
Xanthoparmelia norchlorochroa Hale	G1G2	Sr	14
Xanthoparmelia novomexicana (Gyelnik) Hale	G4G5	Y	4
Xanthoparmelia plittii (Gyelnik) Hale	G5	Sh, T, Y	4, 6, 8, 29
Xanthoparmelia stenophylla (Ach.) Ahti & D. Hawksw.	G5	We	27
Xanthoparmelia subdecipiens (Vainio) Hale	G5	P?, T, We, Y	4, 5, 6, 8, 27
Xanthoparmelia verruculifera (Nyl.) Crespo, O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch	G3G5	Y	8, 17

CHECKLIST OF WYOMING LICHENS. CONTINUED.

Species nomenclature[a]	Global rank[b]	County/locale[c]	References[d]
Xanthoparmelia wyomingica (Gyelnik) Hale	G4	F, H, Na, P?, Sr, T, Wa, Y	4, 5, 6, 8, 14, 17, 23
Xanthoria candelaria (L.) Th. Fr.	G3G5	J, Sh, Su, WY, Y	4, 8, 10, 15, 17, 21, 29
Xanthoria elegans (Link) Th. Fr.	G3G5	A, B, Cl, Cn, Cr, J, P?, Sh, Su, T, U, Wa, We, Y	4, 5, 6, 8, 10, 11,13, 16, 17, 21, 27, 29
Xanthoria polycarpa (Hoffm.) Th. Fr. *ex* Rieber	G4G5	A, Cl, Cr , Sr, T, We, WY, Y	4, 6, 8, 13, 15, 16, 17, 27
Xanthoria sorediata (Vainio) Poelt	G3G5	B, Cr, J, Sh, Su, T, Y	4, 6, 8, 17, 21, 27, 29
Xylographa parallela (Ach. : Fr.) Behlen & Desberger	G5	B, Cr, J, Sh, We	27, 29
Xylographa vitiligo (Ach.) J.R. Laundon	G4G5	B, Cr, J, Sh, Su, Y	8, 17, 21, 27, 29

[a]Nomenclature standardized to Esslinger (2011).
[b]See methods, or http://www.natureserve.org/explorer/index.htm for complete description of rank codes.
[c]A, Albany; B, Big Horn; Cl, Campbell; Cn, Carbon; Cr, Crook; F, Fremont; H, Hot Springs; J, Johnson; L, Lincoln; Na, Natrona; NC, north-central portion of the state; NE, northeastern quarter of state; P, Park, exclusive on YNP; P?, Beartooth Plateau, but not confirmed for WY; SE, southeastern quarter of state; Sh, Sheridan; Sr, Sweetwater: Su, Sublette; SW, southwestern quarter of the state; T, Teton, exclusive on YNP; U, Uinta; Wa, Washakie; We, Weston; WY, no location given within state; Y, Yellowstone National Park; Y*, Yellowstone National Park, but not confirmed for WY.
[d]Sources for location information. See literature cited section for full citations.
1, Brenneman 1995; **2,** Brenneman 1997; **3,** Culberson et al. 1985; **4,** Eversman 1990; **5,** Eversman 1995; **6,** Eversman 1998; **7,** Eversman and Horton 2004; **8,** Eversman et al. 2002; **9,** Hale 1989; **10,** Hammon and Pearson 1976; **11,** KUNHMBRC 2011; **12,** McCune and Goward 1995; **13,** Medina 1994; **14,** Muscha and Hild 2006; **15,** Neitlich et al. 1999; **16,** Nelson 1900; **17,** NPLichen 2011; **18,** Räsänen 1933; **19,** Rosentreter and McCune 1992; **20,** St. Clair et al. 1993; **21,** St. Clair and Newberry 1993; **22,** St. Clair and Porter 2000; **23,** States and Christensen 2001; **24,** Thomson 1987; **25,** Treibel et al. 1991; **26,** Tuckerman 1888; **27,** Wetmore 1967; **28,** Wetmore 2004; **29,** Wetmore 2009.