**Supplementary Material Appendix 1. Summary of specimens examined and re-determined**

**Accessioned material of *Cladonia rei***

Here we list accessioned *Cladonia rei* specimens examined for this study (chemistry was documented via TLC (solvents A, B' and C with water spray for fatty acids) as part of this study). All specimens re-determined are included. Representative specimens confirmed as *C. rei* are listed in 2 groups, those with similar phenotypes to our Alberta material (the ‘grassland ecotype’), and those exhibiting ecotypes depicted in Dolnick *et al.* (2010) and Brodo *et al.* (2001).

Accessioned *Cladonia rei* Schaerer - collections:

Confirmed (Grassland ecotype) —**Canada:** *Saskatchewan:* homosekikaic acid, in grassland, 1959, *J. Looman*, 5921706 (PMAE). —**USA:** *Iowa:* homosekikaic acid, Lyon County, exposed cliffs and shelfs in partially shaded hilly prairie, 1985, *D.H. Vitt*, 32043 (ALTA). *Minnesota:* homosekikaic acid, Washington County, sand prairie along railroad tracks, 1990, *J.P. Schuster*, 2497 (ALTA). -

Confirmed (Ecotype similar to Brodo *et al.* (2001) or Dolnick *et al.* (2010)) —**Canada**: *British Columbia:* homosekikaic acid, fumarprotocetraric acid, Wells Gray Provincial Park, on soil beside dirt road, 2013, *D.L. Haughland*, s.n., (private hb.). *Ontario*: homosekikaic acid, sekikaic acid, Thunder Bay district, over boulders on road shoulder, 1980, *C.E. Garton*, 19351 (PMAE); homosekikaic acid, fumarprotocetraric acid, York Co., on dry sandy soil, 1953, *R.F. Cain*, s.n., (PMAE) ; homosekikaic acid, sekikaic acid, Haliburton Co., Algonquin Prov. Park, on rock, 1958, *T. Ahti*, 4642 (PMAE); homosekikaic acid, fumarprotocetraric acid, Thunder Bay district, open sandy field, 1965, *I.M. Brodo*, 6476 (PMAE). *Quebec*: homosekikaic acid, fumarprotocetraric acid, Gatineau Co., Gatineau Park, along road, 1967, *I.M. Brodo*, 13275A (PMAE); homosekikaic acid, fumarprotocetraric acid, Laurentides Prov. Park, in gravel pit by highway, 1965, *G.W. Scotter*, 6829 (PMAE); homosekikaic acid, fumarprotocetraric acid, Laurentides Prov. Park, in forest opening along roadside, 1965, *G.W. Scotter*, 6738 (PMAE) —**USA**: *Michigan:* homosekikaic acid, Ingham Co., in dry field, 1960, *I.M. Brodo*, 384 (PMAE). *Minnesota:* homosekikaic acid, Lichenes Exsiccati 109. Chisago Co., on southeast-facing soil bank, 1973, *C.M. Wetmore*, 22046 (ALTA); homosekikaic acid, Clearwater Co., on sandy soil in gravel pit, 1968, *J.W. Thomson*, 14520 (PMAE). *New York*: homosekikaic acid, fumarprotocetraric acid, Tompkins Co., bare soil on street side by garage, 1958, *T. Ahti*, 5000 (PMAE). *Wisconsin:* homosekikaic acid, Iowa-Arena Co., on soil in dry prairie, 1959, *J. Looman*, W 780 (PMAE). —**Netherlands:** *Zeeland Prov.:* homosekikaic acid, fumarprotocetraric acid, desalinated sand flat in dammed sea arm, 1978, *H. Sipman*, 9060 (ALTA). —**Spain:** *Canary Islands:* homosekikaic acid, fumarprotocetraric acid, humus-poor gravel banks and in half-shaded erosion channels, Lichenes Exsiccati Selecti a Museo Historiae Naturalis Casselensi Editi No. 327, 1980, *G. Follmann & C. Hernandex-Padron* (ALTA).

Re-determined to *Cladonia acuminata* (Ach.) Norrl. —**Canada:** *Alberta:* atranorin, norstictic acid, connorstictic acid, Cypress Hills Provincial Park, on ground in *Pinus contorta* woods, 1971, *P.A. MacNeill*, 1119 (PMAE); atranorin, norstictic acid, connorstictic acid (trace), Cypress Hills Provincial Park, on ground in grassland on top of plateau with solitary *Pinus contorta*  trees, 1971, *P.A. MacNeill*, 3580 (PMAE); atranorin, Cypress Hills Provincial Park, on ground in grassland on top of plateau, 1971, *P.A. MacNeill*, 3354 (PMAE).

Re-determined to *Cladonia coniocraea* (Flörke) Spreng. —**Canada:** *Alberta:* fumarprotocetraric acid, parkland nat. reg., Fort Saskatchewan, on wooded slope above river, 1958, *G.H. Turner*, 10177a (PMAE); fumarprotocetraric acid, foothills nat. reg., on log in road-side bog, 2012, *D.L. Haughland*, 2012-88, (private hb.); fumarprotocetraric acid, foothills nat. reg., decayed wood in moss hummocks in roadside fen, 2012, *D.L. Haughland*, 2012-38, (private hb.).

Re-determined to *Cladonia cornuta ssp. cornuta* (L.) Hoffm. —**Canada:** *Alberta:* fumarprotocetraric acid, foothills nat. reg., decayed wood in moss hummocks in roadside fen, 2012, *D.L. Haughland*, 2012-40, (private hb.).

Re-determined to *Cladonia cf. cyanipes* (Sommerf.) Nyl. —**Canada:** *Northwest Territories:* barbatic acid, 4-0-demethyl barbatic acid, usnic acid, on soil in scrubby birch-spruce area, 1975, *P. Kuchar*, L8074 (PMAE).

Re-determined to *Cladonia cf. glauca* Flörke—**Canada:** *Alberta:* squamatic acid, mountain nat. reg., Banff National Park, Douglas Lake area, on soil in *Picea engelmannii/Abies lasiocarpa* forest, 1979, *J. Marsh*, JE8089 (ALTA).

Re-determined to *Cladonia cf. subulata* (L.) Wigg —**Canada:** *Alberta:* fumarprotocetraric acid, mountain nat. reg. Banff National Park, on soil on steep north-facing slope with Precambrian quartzite outcrops, 1970, *C. Bird et al.*, 25099 (PMAE).

Re-determined to *Cladonia subulata* (L.) Wigg —**Canada:** *Alberta:* fumarprotocetraric acid, foothills nat. reg. decayed wood in moss hummocks in roadside fen, 2012, *D.L. Haughland*, 2012-16, (private hb.); fumarprotocetraric acid, foothills nat. reg., lignicolous on snag in roadside fen, 2012, *D.L. Haughland*, 2012-18, (private hb.); fumarprotocetraric acid, parkland nat. reg., Fort Saskatchewan, on north-facing bank of ditch, 1947, *G.H. Turner*, 5316 (PMAE). —**Finland:** fumarprotocetraric acid, Ex Museo Botanico Universitatis Helsinki, sandy soil on roadside bank, 1984, *O. Vitikainen*, 11064 (ALTA).

**Accessioned material of other *Cladonia* species examined**

Here we list accessioned collections of species commonly confused with *C. rei* (*Cladonia subulata, C. coniocraea, C. cornuta spp. cornuta* and *C. macilenta*) examined for this study. Chemistry was documented via TLC as part of this study. We also looked for *Cladonia glauca, C. acuminata, C. norvegica* and *C. verruculosa* collections, however, no specimens from Alberta were accessioned in PMAE. All specimens re-determined are included, while only representative confirmed specimens are listed.

Accessioned *Cladonia coniocraea* (Flörke) Spreng.- collections:

Confirmed: —**Canada:** *Alberta:* fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Porcupine Hills, on ground in *Picea-Pinus contorta-Pseudotsuga menziesii* woods, 1969, *C.D. Bird & D. Gill*, 22149 (PMAE); fumarprotocetraric acid, protocetraric acid, grassland nat. reg., Cypress Hills Provincial Park, on rotten logs in *Pinus contorta* forest, 1971, *P.A. MacNeill*, 3849 (PMAE); fumarprotocetraric acid, protocetraric acid, grassland nat. reg., Fish Creek Municipal Park, Bow River watershed, on rotten log in riverine mature *Populus balsamifera* forest, 1973, *E. Cooley*, 418 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on rotten logs in *Pinus contorta* forest, 1971, *P.A. MacNeill & G.D. Benson*, 5009 (PMAE); fumarprotocetraric acid, protocetraric acid, boreal nat. reg., Winefred Lake, mature *Populus balsamifera-P. tremuloides-Vibernum-Rosa-Linnaea borealis* forest, 1989, *R.I. Hastings*, s.n. (PMAE); fumarprotocetraric acid, protocetraric acid, 2 unknown compounds, boreal nat. reg., Glenevis, on soil in dry muskeg, mixed with *C. macilenta, C. subulata, C. cornuta ssp. cornuta, C. gracilis ssp. turbinat*a, 1964, *G.R. Pegg*, s.n. (PMAE); fumarprotocetraric acid, protocetraric acid,parkland nat. reg., Edmonton, on wood, 1977, *D.C. Lindsay,* s.n. (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River watershed, on rotten log in *Picea glauca* woods, 1965, *C.D. Bird & J.L. Glenn*, 12339 (PMAE); fumarprotocetraric acid, protocetraric acid, Waterton Lakes National Park, on rottenlog in *Picea glauca-Abies lasiocarpa* woods, 1966, *C.D. Bird & E.J. Lakusta*, 16975 (PMAE); fumarprotocetraric acid, protocetraric acid, Waterton Lakes National Park, on rottenlog in *Picea glauca-Abies lasiocarpa* woods, 1966, *C.D. Bird & E.J. Lakusta*, 16659a (PMAE); fumarprotocetraric acid, protocetraric acid, Waterton Lakes National Park, on humus in *Picea glauca woods*, 1966, *C.D. Bird & E.J. Lakusta*, 17303a (PMAE); fumarprotocetraric acid, protocetraric acid, Lakes National Park, on rotten wood in *Picea glauca* woods, 1966, *C.D. Bird & E.J. Lakusta*, 17313 (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River watershed, Kananaskis region, on rotten log on steep limestone exposure, 1965, *C.D. Bird & J.L. Glenn*, 12649 (PMAE); fumarprotocetraric acid, protocetraric acid, Oldman River watershed, on rotten log in *Picea-Abies lasiocarpa* forest, mixed with *C. cyanipes,* 1966, *C.D. Bird & E.J. Lakusta*, 15722 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Banff National Park, on humus in *Picea glauca-Pinus contorta-Abies lasiocarpa* woods, 1967, *C.D. Bird*, 18646 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Banff National Park, spruce forest, 1968, *G.W. Scotter*, 10208 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, terricolous in grassland on top of plateau, 1971, *P.A. MacNeill*, 3552 (PMAE).

Re-determined to *Cladonia acuminata* (Ach.) Norrl. —**Canada:** *Alberta:* atranorin, norstictic acid (trace), boreal nat. reg., Glenevis, on soil of dry roadbank, mixed with *C. cornuta ssp. cornuta,* 1964, *G.R. Pegg* (PMAE).

Re-determined to *Cladonia cenotea* (Ach.) Schaerer —**Canada:** *Alberta:* squamatic acid, consquamatic acid, boreal nat. reg., Rocky Mountain House, on ground in *Picea mariana-Larix lacicina forest*, 1971, *P.A. MacNeill & M.E. Matthews*, 937 (PMAE).

Re-determined to *Cladonia cyanipes* (Sommerf.) Nyl. —**Canada:** *Alberta:* barbatic acid, 4-0-demethyl barbatic acid, usnic acid (trace), Bow River watershed, on *Pinus contorta* in *Pinus contorta-Picea engelmannii-Abies lasiocarpa* forest, 1968, *C.D. Bird & R.M. Kalgutkar*, 21048a (PMAE); barbatic acid, Oldman River watershed, on rotten log in *Picea-Abies lasiocarpa* forest, mixed with *C. coniocraea,* 1966, *C.D. Bird & E.J. Lakusta*, 15722 (PMAE).

Re-determined to *Cladonia macilenta var. bacillaris* (Ach.) Schaerer —**Canada:** *Alberta:* barbatic acid, 4-0-demethylbarbatic acid, Waterton Lakes National park, on rotten log in *Pseudotsuga menzieii-Picea glauca-Abies lasiocarpa* woods, 1966, *C.D. Bird & E.J. Lakusta*, 16958 (PMAE); Bow River watershed, Kananaskis region, on log, mixed with smaller amounts of *C. coniocraeae, C. cyanipes,* 1970, *P.A. MacNeill*, 498 (PMAE).

Re-determined to *Cladonia rei* Schaerer —**Canada:** *Alberta:* homosekikaic acid, grassland nat. reg., Cypress Hills Provincial Park, on ground in plateau grassland, 1971, *P.A. MacNeill*, 1431 (PMAE).

Re-determined to *Cladonia cf. subulata* (L.) Wigg —**Canada:** *Alberta*:

fumarprotocetraric acid, protocetraric acid, Bow River watershed, on rotted *Picea* log in *Picea glauca* woods, 1965, *C.D. Bird & J.L. Glenn*, 11248 (PMAE); fumarprotocetraric acid, protocetraric acid, boreal nat. reg., 90 km S of Red Earth, on moss-covered rotten trunk in forested bog, 1990, *B. Goffinet*, s.n. (PMAE); fumarprotocetraric acid, protocetraric acid, boreal nat. reg., Nakamun Lake, on dry road cutbank, 1970, *G.R. Pegg*, s.n. (PMAE).

Re-determined to *Cladonia subulata* (L.) Wigg: —**Canada:** *Alberta:* fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Banff National Park, open moist calcareous lowlands, 1970, *C.D. Bird*, 25353 (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River watershed, on rotten log in *Picea glauca-Populus tremuloides* woods, 1966, *C.D. Bird, J. Lakusta & B.Jones*, 17502 (PMAE).

Re-determined to *Cladonia cf. verruculosa* (Vainio) Ahti: —**Canada:** *Alberta:* fumarprotocetraric acid, protocetraric acid, parkland nat. reg., Waterton Lakes National Park, on wood along trail 1970, *G.W. Scotter*, 10241 (PMAE).

Accessioned *Cladonia cornuta ssp. cornuta* (L.) Hoffm. – collections:

Confirmed: —**Canada:** *Alberta:* fumarprotocetraric acid, protocetraric acid, boreal nat. reg., Manning region, Chinchaga River floodplain of *Alnus tenuifolia-Salix bebbiana-Populus balsamifera-Rosa acicularis-Cornus stolonifera*, 1993, *I.D. Macdonald*, 8b36 (PMAE); fumarprotocetraric acid, protocetraric acid, boreal nat. reg., Caribou Mountains, on mineral soil in *Picea mariana forest*, 1976, *M. Ostafichuk*, 6598 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on rotten wood in *Pinus contorta* woods, 1971, *P.A. MacNeill & G.D.Benson,* 2757 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on rotten logs in dense *Pinus contorta* woods and adjacent *Salix* thicket in creek, 1971, *P.A. MacNeill,* 2911 (PMAE); fumarprotocetraric acid, protocetraric acid, barbatic acid (contaminant?), Fallis (west of Edmonton), *Sphagnum-Ledum-*Bog birch bog, mixed with *C. cenotea, C. cf. cyanipes, C. macilenta var. bacillaris, C. deformis s.l., C. chlorophaea group*, 1971, *C.D. Bird,* 6887 (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River Watershed near Cochrane, on humus of north-facing *Picea glauca-Populus tremuloides* woods, 1965, *C.D. Bird & E.J. Lakusta*, 17478 (PMAE); fumarprotocetraric acid, protocetraric acid, foothills nat. reg., Oldman River watershed, Livingstone Falls Recreation Area, on lignum in *Pinus contorta-Picea* woods, mixed with *C. macilenta var. bacillaris, C. coniocraea,* 1972, *P. Scholefield*, 128 (PMAE); fumarprotocetraric acid, protocetraric acid, Ma-Me-O Beach near Pigeon Valley, on small open bog surrounded by spruce swamp, 1960, *G.H. Turner*, 11061b (PMAE); fumarprotocetraric acid, protocetraric acid, Fort Saskatchewan, on ground on hillslope above river under spruce trees, 1958, *G.H. Turner*, 10207 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on ground in grassland on top of plateau and adjacent forest, mixed with *C. cf. decorticate,* 1971, *P.A. MacNeill*, 3526 (PMAE).

Re-determined to *Cladonia coniocraea* (Flörke) Spreng. —**Canada:** *Alberta:* fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on ground on northeast-facing slopes of *Picea glauca* woods, 1971, *P.A. MacNeill*, 2236 (PMAE).

Re-determined to *Cladonia cf. decorticata* (Flörke) Spreng. —**Canada:** *Alberta:* perlatolic acid?, unknown compound, rocky mountain nat. reg., Cypress Hills Provincial Park, on ground in grassland on top of plateau and adjacent forest, mixed with *C. cornuta ssp. cornuta,* 1971, *P.A. MacNeill*, 3526 (PMAE).

Accessioned *Cladonia subulata* (L.) Wigg- collections:

Confirmed: —**Canada:** *Alberta:* fumarprotocetraric acid, protocetraric acid, foothills nat. reg., Swan Hills region, on rotted wood in *Pinus contorta-Picea* forest, 1972, *J.W. Case*, 869 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on ground in dry, south-facing *Pinus contorta* woods, 1971, *P.A. MacNeill,* 3065 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Bow River watershed, terricolous in *Populus tremuloides-Pseudotsuga menziesii-Pinus flexilis* forest, 1972, *P. Scholefield*, 11 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Bow River watershed, on rotten logs in *Pinus contorta – Picea glauca* forest, 1971, *P.A. MacNeill & M.E. Matthews*, 853 (PMAE); fumarprotocetraric acid, protocetraric acid, foothills nat. reg., on mesic hummocks in *Picea mariana-Larix laricina-Betula pumila var. glandulifera* bog, 1971, *C.D. Bird*, 25963 (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River watershed, wet hummock in *Picea glauca-Salix*  swampy area, 1965, *C.D. Bird & J.L. Glenn*, 12026 (PMAE); fumarprotocetraric acid, protocetraric acid, Porcupine Hills, Oldman River watershed, on soil on sandstone outcropping in conifer woods, 1966, *C.D. Bird & E.J. Lakusta*, 17898a (PMAE); fumarprotocetraric acid, protocetraric acid, boreal nat. reg., N. Saskatchewan River watershed, ground in calcareous fen fringed with *Picea mariana-Larix laricina* muskeg, 1971, *C.D. Bird*, 26093 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Banff National Park, on rotten logs in *Picea glauca* woods, 1970, *C.D. Bird*, 24186 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Banff National Park, mature Engelmann spruce community, 1969, *G.W. Scotter*, 11103 (PMAE); fumarprotocetraric acid, protocetraric acid, Porcupine Hills, on soil in steep, N-facing sandstone outcrop, 1968, *C.D. Bird & R.M. Kalgutkar*, 19603 (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River watershed, on well-rotted stump in mature *Picea glauca* forest, 1965, *C.D. Bird & J.L. Glenn*, 11557a (PMAE); fumarprotocetraric acid, protocetraric acid, Porcupine Hills, Oldman River watershed, on soil of sandstone outcrop, 1966, *C.D. Bird & E.J. Lakusta*, 17761 (PMAE); fumarprotocetraric acid, protocetraric acid, Porcupine Hills, Oldman River watershed, on humus in mixedwoods, 1966, *C.D. Bird & E.J. Lakusta*, 14662 (PMAE).

Re-determined to *Cladonia coniocraea* (Flörke) Spreng. —**Canada:** *Alberta:* fumarprotocetraric acid, protocetraric acid, foothills nat. reg., Swan Hills region, on rotting wood in *Abies-Pinus contorta* woods, 1972, *J.W. Case*, 984 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on rotting wood in *Pinus contorta* woods, 1971, *P.A. MacNeill & G.D. Benson*, 1928 (PMAE); fumarprotocetraric acid, protocetraric acid, mountains nat. reg., Bow River watershed, on *Pinus contorta* in *Pinus contorta-Picea glauca* woods, 1971, *R.M. Kalgutkar*, 1363, (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on *Pinus contorta* in north-facing *Pinus contorta* woods, 1971, *P.A. MacNeill & G.D. Benson*, 4700 (PMAE); fumarprotocetraric acid, grassland nat. reg., Cypress Hills Provincial Park, on *Picea glauca* in mixedwoods, 1971, *P.A. MacNeill & M.E. Matthews,* 2632 (PMAE); fumarprotocetraric acid, rocky mountain nat. reg., Cypress Hills Provincial Park, on ground in *Picea glauca* woods, 1971, *P.A. MacNeill & M.E. Matthews,* 2483 (PMAE); fumarprotocetraric acid, protocetraric acid,foothills nat. reg., Dutch Creek Recreation Area, on rotten log in *Pinus contorta-Populus tremuloides* woods, 1972, *E. Cooley*, 253a (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River watershed, on well-rotted stump in mature *Picea glauca woods,* 1965, *C.D. Bird & J.L. Glenn*, 11556 (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Porcupine Hills, on rotten *Pseudotsuga menziesii* logs in *Populus tremuloides-Pseudotsuga menziesii* forest, 1969, *C.D. Bird & D. Gill*, 22072 (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River watershed, on rotten log in *Picea glauca* forest, 1965, *C.D. Bird & J.L. Glenn*, 11491a (PMAE); fumarprotocetraric acid, protocetraric acid, Bow River watershed, on rotten log in mature *Picea glauca-Hylocomium splendens* forest, 1965, *C.D. Bird & J.L. Glenn*, 12814a (PMAE).

Re-determined to *Cladonia cornuta ssp. cornuta* (L.) Hoffm. —**Canada:** *Alberta:* fumarprotocetraric acid, protocetraric acid, foothills nat. reg., Swan Hills region, on detritus in roadside *Picea mariana* woods, 1972, *J.W. Case*, 819a, (PMAE); fumarprotocetraric acid, protocetraric acid, foothills nat. reg., Swan Hills region, on detritus and dead moss in *Picea mariana-Larix laricina* bog, 1972, *J.W. Case*, 1025, (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Bow River watershed, on humus in *Pinus contorta* woods, 1967, *C.D. Bird*, 18836a (PMAE); fumarprotocetraric acid, protocetraric acid, rocky mountain nat. reg., Bow River Watershed, rotten log in *Pinus contorta* woods, 1967, *C.D. Bird*, 18840 (PMAE).

Re-determined to *Cladonia macilenta var. bacillaris* (Ach.) Schaerer —**Canada:** *Alberta:* barbatic acid, 4-0-demethylbarbatic acid, Oldman River watershed, Porcupine Hills, on rotten log in *Abies lasiocarpa* woods, 1966, *C.D. Bird, E.J. Lakusta* & *B.Jones,* 17982a (PMAE).

Accessioned *Cladonia macilenta var. bacillaris* (Ach.) Schaerer *-* collections:

Confirmed: —**Canada:** *Alberta:* rocky mountain nat. reg., Cypress Hills Provincial Park, on stumps in mixed woods, 1971, *P.A. MacNeill*, 4400 (PMAE); rocky mountain nat. reg., Cypress Hills Provincial Park, on rotten logs in *Pinus contorta woods*, 1971, *P.A. MacNeill*, 1114 (PMAE); rocky mountain nat. reg., Fir Creek, on rotten logs in south-facing *Populus tremuloides-Pseudotsuga menziesii-Pinus flexilis forest*, 1972, *G. Fitzmartyn*, 13 (PMAE).

Re-determined to *Cladonia cenotea* (Ach.) Schaerer —**Canada:** *Alberta:* squamatic acid, consquamatic acid, Bow River watershed, on rotten log in *Picea glauca-Abies lasiocarpa* woods, *1965*, *C.D. Bird*, 14230 (PMAE); squamatic acid, consquamatic acid, rocky mountain nat. reg., on rotting wood on west-facing slope, Kananaskis, 1962, *R.W. Kobylnyk*, 60 (PMAE); Bow River watershed, on rotten log in dense mature *Picea glauca­-*feather moss woods, 1965, *C.D. Bird & J.L. Glenn,* 13331 (PMAE).

Re-determined to *Cladonia sulphurina* (Michaux) Fr. —**Canada:** *Alberta:* boreal nat. reg., near mouth of Winefred Lake, *Picea mariana-Ledum-Rubus chameomorus-Cladonia* forest, mixed with *C. deformis*, 1989, *R.I. Hastings*, s.n. (PMAE).

**Misidentifications of ABMI and unaccessioned specimens**

Of the 435 putative *C. rei* collected by ABMI, 109 were re-determined as follows: *Cladonia coniocraea* (58), *C. subulata* (19), *C. cornuta ssp. cornuta* (15), *C. macilenta var. bacillaris* (6), *C. bacilliformis* (3), *C. fimbriata* (3), *C. cyanipes* (2), *C. norvegica* (1), *C. glauca* (1), or *C. acuminata* (1). In contrast to *C. rei*, these specimens were predominantly found on logs and stumps (62%), followed by upland soils (21%), on the bases of trees, snags, and other vertical substrates (9%), wetland substrates (6%) and rock (3%). Thirty-three specimens could not be definitively identified due to small amounts of material (typically a single podetium) combined with inconclusive TLC results.