

A Lichen Survey of Williamsburg, Virginia

Brendan P. Hodkinson¹ and Martha A. Case

Biology Department
College of William and Mary
Williamsburg, Virginia 23187-8795

ABSTRACT

A survey of lichens was conducted for the Williamsburg, Virginia, area, resulting in a checklist of 141 species (in 60 genera), 52 of which are potential state records. Noteworthy collections include one globally rare species (*Parmotrema louisianae*), and several species found outside of their typical ranges (subtropical/tropical species: *Amandinea submontana*, *Haematomma persoonii*, *Leiorreuma explicans*, *Leiorreuma sericeum*, and *Parmotrema praesorediosum*; species disjunct from the north: *Xanthomendoza fallax*; western species: *Bacidia helicospora*, *Parmotrema austrosinense*, *Punctelia missouriensis*, and *Rinodina papillata*). The influence of unique microhabitats (e.g., calcareous ravines and historic brick walls) on the local lichen flora is discussed.

Key words: biodiversity, checklist, Coastal Plain, flora, lichen, survey, Virginia, Williamsburg.

INTRODUCTION

Despite its diversity of lichen habitats and historical age as a city, few lichen collectors have conducted fieldwork in the Williamsburg, Virginia, area. The only area close to Williamsburg in geography and vegetation in which lichen diversity has been surveyed is the Eastern Shore of Maryland (Biechele, 2002; Lendemer & Knapp, 2007), which is located over 100 km to the northeast, bordering the state of Virginia. The present study reports the first lichen survey identified for any location in Virginia's Coastal Plain, and is based on an honors thesis by the primary author (Hodkinson, 2005). A considerable number of taxonomic additions and corrections have been made to the results reported in Hodkinson (2005), and are now included in this publication. Therefore, taxonomic citations should refer to this publication.

The study area is defined as the City of Williamsburg and its surroundings within 10 km of the city limits. Williamsburg (population approximately 12,000) is located in Virginia's Inner Coastal Plain, and is situated within the northernmost region of the

southern mixed hardwood forest, representing varying degrees of age (DeWitt & Ware, 1979; Monette & Ware, 1983). Overall, the city receives more precipitation per year than any other city in Virginia (Bess, 2002). An interesting topographic feature of the area is the presence of deep-cutting ravines that extend down into the Yorktown and Eastover Formations. These formations are Pliocene in age, and are composed of marine and littoral deposits with sand, gravel, and clay (Bick & Coch, 1969; Dowsett & Wiggs, 1992). A high concentration of calcium carbonate, in conjunction with the cool and moist environment of the ravines, creates localized areas that support a vascular flora unlike the surrounding uplands (Ware & Ware, 1992). Many species inhabiting these ravines have predominant ranges that are further west and frequently mountainous. They have therefore been called "mountain-coastal plain disjuncts" (Ware & Ware, 1992; McDonald, 2000).

The buildings, walkways, and cultivated plants in the developed areas of Williamsburg also provide interesting substrates for the local lichen flora. For example, the College of William and Mary is cultivating many species of introduced and native trees, some of which have been shipped from distant locations. In addition, there are well-established communities of lichens living on the brick walls in Colonial Williamsburg. Many of the existing brick

¹Author for correspondence; email: bph8@duke.edu;
present address: Biology Department, Box 90338,
Duke University, Durham, North Carolina 27708-0338

walls have been present for at least 70 years (pers. obs. from dated walls), but the continuous presence of such substrates in the town could potentially have hosted lichen metapopulations for over 300 years.

METHODS

The primary author collected lichens during excursions to local sites and between daily activities on the College of William and Mary campus during 2004 and spring of 2005. Collection efforts did not focus on any particular region within the study area, but instead attempted to maximize the diversity of potential substrates in order to maximize the species representation of the study. These substrates included roadsides, forested uplands, forested ravines, various tree species (both wild and cultivated), brick walls, concrete, sidewalks, and various soil types (e.g., acidic/basic, sand/clay, moist/dry). Although abundance was not quantified, each species was assigned to one of the following hierarchical categories by careful field observations:

Abundant – Present in nearly every location with a habitable substrate;

Common – Found in numerous locations, but not always present in suitable habitat;

Occasional – Found infrequently, but seen in at least two distinct locations;

Rare – A single specimen or extremely small population was found.

All species in the study are represented by herbarium specimen vouchers with full label data. Collection and preservation methods followed accepted archival protocols (May, 2000). Determinations were made throughout the collection period, and continued afterward at Duke University and the New York Botanical Garden. Researchers highly skilled in lichen identification assisted with the post-thesis determinations and verifications. The vast majority of this assistance came from Richard C. Harris; other researchers who examined specimens include Irwin M. Brodo, Jolanta Miadlikowska (*Peltigera*), Suzanne Joneson (*Ramalina*), Cécile Gueidan (*Verrucaria*), and François Lutzoni. Voucher specimens will be deposited in the Duke Cryptogamic Herbarium (DUKE), and a single specimen will be sent to the New York Botanical Garden (NY) for each species that was collected more than once. Label data for each specimen stored at DUKE will be available through the DUKE Catalog of Lichens (online at <http://www.biology.duke.edu/herbarium/lichen.html>).

RESULTS AND DISCUSSION

During this study, 141 species (in 60 genera) were identified and vouchered from the Williamsburg area. Of these species, 68 represent a crustose growth habit, 46 represent a foliose growth habit, and 27 represent a fruticose growth habit. Fifty-two species (36.8%) are apparently reported for the first time from the state of Virginia. The relatively high percentage of previously unreported species probably reflects the paucity of previous lichen surveys, but it may also reflect the area's potential for high lichen diversity. Some of this diversity can be attributed to the fact that the region is inhabited by species from both the typical Appalachian-Great Lakes and Coastal Plain distribution types (Brodo et al., 2001). Air quality also may play a role in the potentially high lichen diversity of the area. While many lichens are affected by air quality, cyanolichens are known to be especially sensitive to air pollution (Richardson & Cameron, 2004). A healthy environment is indicated by the presence of eight different cyanolichen species (*Collema bachmanianum*, *Leptogium cyanescens*, and six species in the genus *Peltigera*) in the study area.

Williamsburg contains two specific types of unique microhabitats (calcareous ravines and historic brick walls) that have clearly influenced the local flora. Similar to the patterns found for vascular plants, the forested calcareous ravines contained a lichen flora quite different from the surrounding areas. Several species were found exclusively in these ravine habitats, including *Anaptychia palmulata*, *Arthonia rubella*, *Bathelium carolinianum*, *Cladonia apodocarpa*, *C. beaumontii*, *C. caespiticia*, *C. didyma*, *C. ochrochlora*, *Leptogium cyanescens*, *Lobaria quercizans*, *Parmotrema gardneri*, *Peltigera horizontalis*, *P. neopolydactyla*, "*P. neopolydactyla* sensu lato," *P. phyllidiosa*, *P. praetextata*, *P. rufescens*, *Pertusaria multipunctoides*, *Phyllopsora corallina*, *Porina heterospora*, and *Pseudosagedia cestrensis*. A more detailed quantitative analysis of this phenomenon is provided by Wiseman (2006). A number of rock-inhabiting obligate calciphiles were also collected in the study area (e.g., *Bacidina egenula*, *Caloplaca citrina*, *Caloplaca subsoluta*, *Collema bachmanianum*, *Lecania cuprea*, *Lecanora dispersa*, and *Verrucaria calkinsiana*), but not on their typical limestone or dolomite outcrops. Since Williamsburg contains no outcrops, these species seem to be entirely dependent on manmade walls and sidewalks.

Particularly noteworthy collections include the globally rare *Parmotrema louisianae* and several species collected at the farthest reaches of their known

ranges. A number of subtropical species at the northern edge of their ranges include *Amandinea submontana* (known from less than ten North American collections), *Haematomma persoonii* (the northernmost known except for an anomalous record from Pennsylvania), *Leiorreuma explicans*, *Leiorreuma sericeum*, and *Parmotrema praesorediosum*. Species that are typically found much farther west include *Bacidia helicospora* (only one other collection in the central Coastal Plain), *Parmotrema austrosinense*, *Punctelia missouriensis*, and *Rinodina papillata*. *Xanthomendoza fallax* appears to be disjunct from the north, since the nearest Coastal Plain record is from Connecticut. A final noteworthy collection is a seemingly undefined species that appears to be relatively common in the eastern United States (listed as "*Peltigera neopolydactyla* sensu lato"). The *Peltigera neopolydactyla* species complex will soon be revised, and this revision will almost certainly involve the description of a new species from the Williamsburg area (J. Miadlikowska, pers. comm.).

ANNOTATED CHECKLIST OF TAXA

The following list is arranged alphabetically by taxon name. Species listed as potential state records (*) are those for which no credible published report was found. In addition, observed abundance, preferred substrates, and the primary author's collection numbers are listed after each taxon. Specimens sent to the New York Botanical Garden are indicated by "NY".

- Acarospora fuscata* (Schrader) Arnold – Common; tops of brick walls; 2599
- **Amandinea milliaria* (Tuck.) P. May & Sheard – Common; bark of deciduous trees; 1341, 2727 (NY)
- Amandinea polyspora* (Willey) E. Lay & P. May – Common; bark of deciduous trees; 335, 353 (NY)
- Amandinea punctata* (Hoffm.) Coppins & Scheid. – Common; bark of deciduous trees; 309, 1347 (NY), 3259
- **Amandinea submontana* Marbach – Rare; bark of *Liquidambar styraciflua*; 3782
- Anaptychia palmulata* (Michx.) Vainio – Rare; bark in a calcareous ravine; 2317
- Arthonia caesia* (Flotow) Körber – Common; bark of various tree species; 367
- **Arthonia quintaria* Nyl. – Common; bark of various tree species; 2191, 2456 (NY)
- **Arthonia rubella* (Fée) Nyl. – Rare; bark of a deciduous tree in a calcareous ravine; 974
- **Arthothelium taediosum* auct. Amer. – Rare; bark of *Ilex* sp.; 4171
- **Bacidia coprodes* (Körber) Lettau – Occasional; mortar and concrete; 3274 (NY), 4020
- **Bacidia helicospora* S. Ekman – Rare; bark of *Liquidambar styraciflua*; 3771
- **Bacidia heterochroa* (Müll. Arg.) Zahlbr. – Rare; bark of *Prunus subhirtella*; 324
- Bacidia schweinitzii* (Fr. ex E. Michener) A. Schneider – Occasional; bark, especially of *Quercus* sp.; 1867 (NY), 2415
- **Bacidia suffusa* (Fr.) A. Schneider – Rare; concrete; 1463
- **Bacidina egenula* (Nyl.) Vězda – Rare; mortar; 1998
- **Bathelium carolinianum* (Tuck.) R. C. Harris – Rare; bark in a calcareous ravine; 423
- **Buellia curtisii* (Tuck.) Imshaug – Common; bark of deciduous trees; 303, 388, 1352 (NY)
- Buellia stillingiana* J. Steiner – Rare; bark of *Magnolia grandiflora*; 947
- Caloplaca citrina* (Hoffm.) Th. Fr. – Abundant; concrete and brick walls; 396, 1026 (NY)
- Caloplaca flavovirescens* (Wulfen) Dalla Torre & Sarnth. – Occasional; mortar on brick walls; 2331
- **Caloplaca subsoluta* (Nyl.) Zahlbr. – Common; mortar on brick walls and sidewalks; 1023, 1024, 1025 (NY)
- Candelaria concolor* (Dickson) Stein – Common; bark of various tree species; 304 (NY), 1918
- **Candelariella reflexa* (Nyl.) Lettau – Abundant; bark of various tree species; 88 (NY), 307, 805
- Canoparmelia caroliniana* (Nyl.) Elix & Hale – Occasional; tree bark; 830
- Canoparmelia crozalsiana* (de Lesd. ex Harm.) Elix & Hale – Occasional; bark of deciduous trees; 289, 525 (NY)
- Canoparmelia texana* (Tuck.) Elix & Hale – Abundant; bark of deciduous trees; 505 (NY), 2639
- **Chrysothrix xanthina* (Vain.) Kalb – Occasional; tree bark; 3257
- Cladonia apodocarpa* Robbins – Occasional; sandy soil in calcareous ravines; 1946

- Cladonia beaumontii* (Tuck.) Vainio – Rare; soil in a calcareous ravine; 527
- Cladonia caespiticia* (Pers.) Flörke – Common; sandy soil in calcareous ravines; 1628 (NY), 2234
- Cladonia cristatella* Tuck. – Common; moist roadside soil and rotting wood; 87 (NY), 639, 1839
- Cladonia didyma* var. *vulcanica* (Zoll. & Moritzi) Vainio – Common; old wood and sandy soil in calcareous ravines; 1005, 2187 (NY)
- Cladonia grayi* G. Merr. ex Sandst. – Common; moist sandy soil on roadsides; 534 (NY), 653, 688
- Cladonia macilenta* var. *bacillaris* (Genth) Schaerer – Common; old wood; 610, 1300 (NY), 1324
- Cladonia mateocyatha* Robbins – Occasional; roadside soil; 529
- Cladonia ochrochlora* Flörke – Occasional; sandy soil in calcareous ravines; 2245, 2258 (NY)
- Cladonia parasitica* (Hoffm.) Hoffm. – Occasional; old wood; 1290
- Cladonia peziziformis* (With.) J. R. Laundon – Abundant; roadside soil, tops of brick walls, and sand between bricks on pathways; 425 (NY), 1283
- **Cladonia piedmontensis* G. Merr. – Common; roadside soil; 644 (NY), 679
- Cladonia polycarpoides* Nyl. – Common; sandy soil; 646, 649 (NY), 1314, 2291 [chemotypes of *Cladonia subcariosa* are maintained as separate species in this list]
- **Cladonia ramulosa* (With.) J. R. Laundon – Occasional; sandy soil; 484 (NY), 2080
- **Cladonia ravenellii* Tuck. – Common; bark at the base of *Pinus taeda* and old pine wood; 566 (NY), 1536
- Cladonia sobolescens* Nyl. ex Vainio – Occasional; sandy soil; 561 [chemotypes of *Cladonia subcariosa* are maintained as separate species in this list]
- Cladonia squamosa* Hoffm. – Common; sandy soil; 728 (NY), 1322, 1489
- Cladonia strepsilis* (Ach.) Grognot – Occasional; roadside soil; 1323
- Cladonia subradiata* (Vainio) Sandst. – Occasional; untreated wood; 1775
- Cladonia subtenuis* (Abbayes) Mattick – Common; soil on roadsides and in calcareous ravines; 635 (NY), 1984, 2137
- Cladonia subulata* (L.) F. H. Wigg. – Common; mortar on brick walls; 492, 1739 (NY), 2077
- **Collema bachmanianum* (Fink) Degel. – Common; mortar, concrete, and soil; 1364, 2098, 2355 (NY)
- Dibaeis baeomyces* (L. f.) Rambold & Hertel – Common; clay on roadsides and along the edges of paths around Lake Matoaka; 1770
- Flavoparmelia baltimorensis* (Gyeln. & Föriß) Hale – Common; brick walls and bark; 1956 (NY), 2401
- Flavoparmelia caperata* (L.) Hale – Abundant; bark of all kinds and tops of brick walls; 721 (NY), 2287
- Graphis scripta* (L.) Ach. – Abundant; bark of all kinds; 831, 968 (NY), 1018
- Haematomma personii* (Fée) A. Massal. – Occasional; bark of *Ginkgo biloba* and cultivated *Pyrus* sp.; 1725, 2521, 2591 (NY)
- **Heterodermia albicans* (Pers.) Swinscow & Krog – Common; brick walls; 475, 1107 (NY), 1789, 2173
- Hyperphyscia syncolla* (Tuck. ex Nyl.) Kalb – Occasional; tree bark in the open; 2063 (NY), 2352
- Hypotrachyna livida* (Taylor) Hale – Occasional; bark of *Acer rubrum*; 886, 901 (NY), 908
- **Hypotrachyna showmanii* Hale – Occasional; top of brick walls; 478
- **Lecania cuprea* (A. Massal.) v. d. Boom & Coppins – Rare; mortar; 562
- Lecanora argentata* (Ach.) Malme – Occasional; bark of *Fagus grandifolia*; 824 (NY), 827
- Lecanora chlarotera* Nyl. – Common; bark of deciduous trees; 312, 414, 3255 (NY), 3258, 3265
- **Lecanora dispersa* (Pers.) Sommerf. – Abundant; brick walls and concrete; 1242
- Lecanora hybocarpa* (Tuck.) Brodo – Common; bark of deciduous trees; 361, 390, 392 (NY)
- **Lecanora louisianae* de Lesd. – Common; bark of deciduous trees; 362 (NY), 412, 625
- Lecanora strobilina* (Sprengel) Kieffer – Abundant; bark and wood of all kinds; 807, 836, 906 (NY)
- **Lecanora subpallens* Zahlbr. – Common; bark of deciduous trees; 910, 913, 1350 (NY), 1616
- **Lecidea plebeja* Nyl. – Rare; old conifer wood; 383
- **Leiorreuma explicans* (Fink) Lendemmer – Rare; bark of a deciduous tree; 967

- **Leiorreuma sericeum* (Eschw.) Staiger – Common; bark of deciduous trees; 565, 978 (NY)
- **Lepraria caesiella* R. C. Harris – Rare; bark of a deciduous tree; 2281
- Lepraria lobificans* Nyl. – Abundant; brick walls and bark of all kinds; 1020
- Leptogium cyanescens* (Rabenh.) Körber – Abundant; bark of deciduous trees in calcareous ravines; 424 (NY), 1000
- Lobaria quercizans* Michx. – Rare; bark in a calcareous ravine; 1013
- Loxospora pustulata* (Brodo & Culb.) R. C. Harris – Common; bark of many tree species; 401, 1010, 1431 (NY)
- Myelochroa aurulenta* (Tuck.) Elix & Hale – Common; tops of brick walls; 473 (NY), 2434
- **Nadvornikia sorediata* R. C. Harris – Occasional; bark of deciduous trees; 563
- Ochrolechia africana* Vainio – Common; bark of various tree species, shaded brick; 300 (NY), 301, 1945, 2010
- **Opegrapha vulgata* Ach. – Common; bark of various tree species; 397, 2151 (NY)
- **Parmotrema austrosinense* (Zahlbr.) Hale – Occasional; bark of cultivated *Buxus sempervirens*; 1937, 3262 (NY)
- **Parmotrema gardneri* (C. W. Dodge) Sérus. – Occasional; bark in calcareous ravines; 846, 1017 (NY)
- **Parmotrema hypoleucinum* (Steiner) Hale – Rare; bark of a cultivated deciduous tree; 1857
- Parmotrema hypotropum* (Nyl.) Hale – Common; bark of cultivated deciduous trees; 621 (NY), 1310, 1859
- Parmotrema louisianae* (Hale) Hale – Rare; bark of a branch overhanging Lake Matoaka (collected from a canoe); 1723, 1723B (NY)
- Parmotrema perforatum* (Jacq.) A. Massal. – Common; bark of cultivated deciduous trees; 711 (NY), 1910, 2134
- **Parmotrema praesorediosum* (Nyl.) Hale – Rare; bark of cultivated *Pyrus* sp.; 1271
- Parmotrema reticulatum* (Taylor) M. Choisy – Occasional; top of a brick wall around the Colonial Williamsburg Capitol building; 1822 (NY), 2645
- Parmotrema subsidiosum* (Müll. Arg.) Hale – Common; bark of deciduous trees and tops of brick walls; 290 (NY), 1263
- Parmotrema submarginale* (Michaux) DePriest & B. Hale – Occasional; bark of deciduous trees; 907, 2213 (NY)
- Peltigera horizontalis* (Hudson) Baumg. – Occasional; sandy slopes in calcareous ravines; 1091
- **Peltigera neopolydactyla* (Gyelnik) Gyelnik – Occasional; sandy slopes in calcareous ravines; 1090, 1745 (NY)
- * “*Peltigera neopolydactyla* sensu lato” [taxonomy to be revised in a forthcoming publication] – Common; sandy soil in calcareous ravines; 1121, 1122, 1124, 1125, 1128 (NY)
- **Peltigera phyllidiosa* Goffinet & Miadlikowska – Rare; sandy soil in a calcareous ravine; 2256
- Peltigera praetextata* (Flörke ex. Sommerf.) Zopf – Occasional; sandy soil in calcareous ravines; 2168
- Peltigera rufescens* (Weiss) Humb. – Rare; sandy soil in a calcareous ravine; 1267
- **Pertusaria epixantha* R. C. Harris – Rare; *Fagus grandifolia* bark near Waller Mill Pond; 1201, 3647 (NY)
- Pertusaria multipunctoides* Dibben – Rare; bark in a calcareous ravine; 680
- Pertusaria paratuberculifera* Dibben – Common; bark of deciduous trees; 971, 1829 (NY), 2165
- Pertusaria propinqua* Müll. Arg. – Rare; bark of a deciduous tree; 1016
- Pertusaria pustulata* (Ach.) Duby – Common; bark of cultivated deciduous trees; 818 (NY), 1402
- Pertusaria rubefacta* Erichsen – Rare; bark of a deciduous tree; 968
- Pertusaria subpertusa* Brodo – Common; bark of deciduous trees; 399, 508 (NY)
- Pertusaria texana* Müll. Arg. – Common; bark of deciduous trees; 339, 389 (NY)
- Pertusaria xanthodes* Müll. Arg. – Common; bark of deciduous trees; 915 (NY), 2095
- Phaeographis inusta* (Ach.) Müll. Arg. – Common; bark of deciduous trees near lakes and rivers; 810 (NY), 933, 1130, 1434
- Phaeophyscia adiastrata* (Essl.) Essl. – Common; mortar and concrete; 833

- Phaeophyscia hirsuta* (Mereschk.) Essl. – Abundant; mortar and concrete; 842, 1530 (NY)
- **Phaeophyscia hirtella* Essl. – Common; mortar and concrete; 460, 1612 (NY)
- Phaeophyscia rubropulchra* (Degel.) Essl. – Abundant; bark and shaded brick; 375 (NY), 1515
- **Phyllopsora corallina* (Eschw.) Müll. Arg. – Rare; bark in a calcareous ravine; 1483
- Physcia millegrana* Degel. – Common; bark of cultivated deciduous trees; 288, 2100 (NY)
- Physcia pumilior* R. C. Harris – Occasional; bark of cultivated deciduous trees; 1129, 1343 (NY)
- Physcia stellaris* (L.) Nyl. – Occasional; bark of deciduous trees; 2505
- Physcia subtilis* Degel. – Occasional; brick walls; 1273 (NY), 1280
- Physciella chloantha* (Ach.) Essl. – Common; mortar and concrete; 501, 1466 (NY)
- **Physconia leucoleptes* (Tuck.) Essl. – Occasional; brick walls; 2001
- **Porina heterospora* (Fink) R. C. Harris – Rare; bark in a calcareous ravine; 2244
- **Pseudosagedia cestrensis* (Michener) R. C. Harris – Common; *Liriodendron tulipifera* bark in calcareous ravines; 997
- **Pseudosagedia raphidosperma* (Müll. Arg.) R. C. Harris – Rare; *Fagus grandifolia* bark at Waller Mill Pond; 826
- **Punctelia missouriensis* G. Wilh. & Ladd – Common; brick walls, usually centered on mortar; 471, 1728 (NY), 2583
- Punctelia rudecta* (Ach.) Krog – Abundant; trees and brick walls; 384, 474, 2037 (NY)
- Pycnothelia papillaria* Dufour – Occasional; roadside soil; 85
- **Pyrenula cuyabensis* (Malme) R. C. Harris – Rare; bark of a fallen deciduous tree; 1401
- Pyrenula pseudobufonia* (Rehm) R. C. Harris – Common; bark of deciduous trees; 723, 828 (NY)
- **Pyrenula punctella* (Nyl.) Trevisan – Rare; bark of *Fagus grandifolia*; 2226
- **Pyrenula subelliptica* (Tuck.) R. C. Harris – Common; bark of deciduous trees; 829 (NY), 883
- Pyrrhospora varians* (Ach.) R. C. Harris – Abundant; bark of all kinds; 342, 528 (NY), 1415
- Pyxine subcinerea* Stirton – Abundant; bark of deciduous trees and bricks; 505, 2102 (NY)
- Ramalina americana* Hale – Common; bark of cultivated trees; 1793
- Rinodina maculans* Müll. Arg. – Common; bark of all sorts; 308, 1345 (NY), 1436, 1896, 1897
- **Rinodina papillata* H. Magn. – Rare; bark of a cultivated deciduous tree; 1346
- Trapeliopsis flexuosa* (Fr.) Coppins & P. James – Common; *Pinus taeda* bark and untreated pine wood; 2066 (NY), 2195, 2300, 2304
- Trypethelium virens* Tuck. ex E. Michener – Common; bark of *Ilex* sp. and *Prunus subhirtella*; 1127 (NY), 2416
- Tuckermanella fendleri* (Nyl.) Essl. – Occasional; bark of *Pinus taeda*; 1126, 1139 (NY)
- Usnea mutabilis* Stirton – Common; bark of deciduous trees; 700, 705, 1838 (NY)
- Usnea pennsylvanica* Mot. – Occasional; bark of deciduous trees and shrubs; 1328 (NY), 2250
- Usnea strigosa* (Ach.) Eaton – Abundant; bark of deciduous trees; 394, 921, 1452, 2019 (NY)
- **Verrucaria calkinsiana* Servit – Rare; mortar; 1293
- **Xanthomendoza fallax* (Hepp ex Arnold) Søchting, Kärnefelt & S. Kondr. – Rare; concrete; 1187
- Xanthomendoza weberi* (S. Kondr. & Kärnefelt) L. Lindblom – Common; brick, mortar, and bark of deciduous trees; 1490, 1539 (NY), 1747
- Xanthoparmelia plittii* (Gyelnik) Hale – Occasional; brick and rock; 2444

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