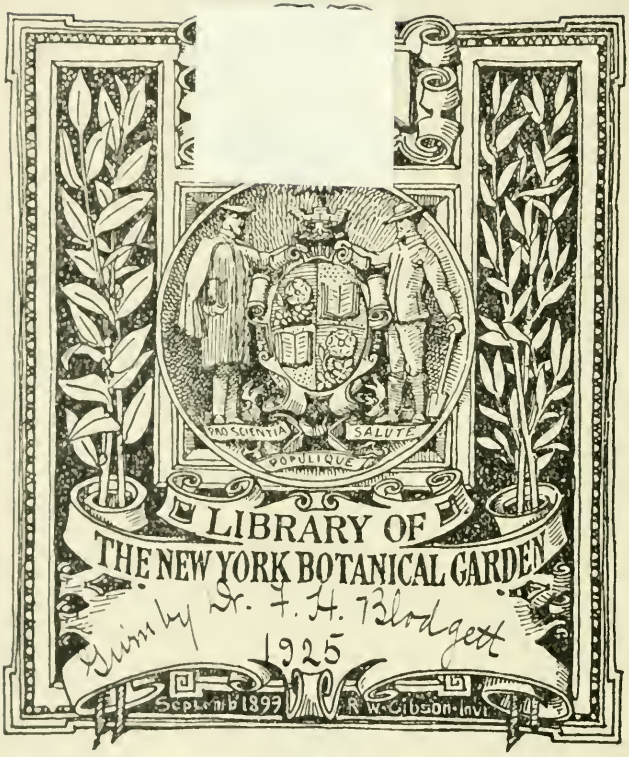
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A PROVISIONAL LIST OF THE PARASITIC FUNGI OF WISCONSIN

BY

J. J. DAVIS

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A PROVISIONAL LIST OF PARASITIC FUNGI IN WISCONSIN.

J. J. Davis.

The first enumeration of Fungi of Wisconsin of which I have knowledge, was published in the Report of the Geological Survey of Wisconsin 1873–9. It was prepared by A. F. Bundy, M. D., and about thirty of the species there listed are parasitic. As Dr. Bundy's collections were afterwards destroyed by fire this list has not been taken into account in subsequent enumerations. In the Transactions of the Wisconsin Academy of Science, Arts and Letters, vol. *6*, 106–144 (1884) a Preliminary List of Parasitic Fungi of Wisconsin appeared which was prepared by William Trelease, S. D., at that time Professor of Botany in the University of Wisconsin. Lists supplementary to this, prepared by the writer, were published through the same medium in vols. *9*, 153–188 (1893) *11*, 165–178 (1897) *14*, 83–106 (1903) and *16*, 739–772 (1909). A demand having arisen for the replacement of these lists, some of which are now unobtainable, by a single list with a single host index, which should embody the present knowledge of the parasitic fungus flora of the state, the following enumeration has been made. It is a compilation of the Preliminary List of Dr. Trelease and the lists supplementary thereto with some changes that seem necessary to bring it more nearly into accord with present knowledge and practise. The opportunity has been used for additions founded upon material collected since the last supplementary list was issued.

The specimens upon which the previous lists were founded are in part in the herbarium of Dr. Trelease at the Missouri

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Botanical Garden, St. Louis, Mo., and in part in my own herbarium which is now at the University of Wisconsin, with a few exceptions noted in the original entries. The more recent additions are based on specimens in the herbarium of the University of Wisconsin or in that of the Wisconsin Agricultural Experiment Station, or in both. The nomenclature of the hosts is that of Gray's New Manual of Botany, 7th edition and emendations made by the authors of the Manual in *Rhodora 11*, 33–61, (March, 1909). The authorities for the host names have been omitted as they can readily be found, if desired, in these publications. The arrangement of the species under the genera is in the order in which the hosts appear in the classification and under each species its hosts are enumerated in the same order.

As some time may elapse before another general list is attempted this one has been made as concise as possible; all extraneous matter in the way of notes and comments, which might later become superfluous, being rigidly excluded.

It is hoped that this list will be of service both to those to whom the parasitic fungi are interesting forms of life with peculiar vital relations and to those who view them more especially as disease-producing organisms and that with this new point of departure the acquisition of knowledge of the parasitic fungus flora of Wisconsin will be accelerated.

Corrections and additions will be gratefully received with a view to future publication. I wish to thank Dr. J. C. Arthur and Dr. F. D. Kern of Purdue University for expert assistance in the *Uredinales*.

University of Wisconsin Herbarium,
Madison, Wisconsin.
March, 1912.

Sept. 1925 J. H. Blodgett

PHYCOMYCETES

CHYTRIDIACEAE

SYNCHYTRIUM SCIRPI Davis
On *Scirpus atrovirens*

SYNCHYTRIUM ASARI Arth. & Hol.
On *Asarum canadense*

SYNCHYTRIUM AUREUM Schroet.
On *Ranunculus recurvatus*
Viola pubescens
Geum virginianum
canadense
Pedicularis canadensis
Prenanthes alba

SYNCHYTRIUM ANEMONES (DC.) Wor.
On *Anemone quinquefolia*

SYNCHYTRIUM DECIPIENS Farl.
On *Amphicarpa monoica*

PHYSODERMA MENYANTHIS DBy.
On *Menyanthes trifoliata*

CLADOCHYTRIUM MACULARE (Wallr.)
On *Alisma Plantago-aquatica*

UROPHLYCTIS MAJOR Schroet.
On *Rumex verticillatus*

UROPHLYCTIS PLURIANNULATA (B. & C.) Farl.
On *Sanicula marylandica*
gregaria
Zizia aurea

OLPIDIOPSIS SAPROLEGNIAE (Cornu) A. Fisch.
On *Saprolegnia thuretii*

ENTOMOPHTHORACEAE

EMPUSA AMERICANA Thaxt.
On a blue bottle fly.

EMPUSA APHIDIS Hoffman
On various aphides

EMPUSA CULICIS A. Braun
On *Chironomus.*

EMPUSA MUSCAE Cohn.
On house flies

EMPUSA RHIZOPHORA Thaxt.
On caddis flies

EMPUSA SCIARAE Olive
On *Sciara*

EMPUSA GRYLLI Fres.
On *Caloptenus*

SAPROLEGNIACEAE

SAPROLEGNIA THURETII DBy.
On dead flies

PERONOSPORACEAE

ALBUGO BLITI (Biv.) O. Kuntze
On *Amaranthus retroflexus*
hybridus
blitoides
Acnida tuberculata

ALBUGO PORTULACAE (DC.) O. Kuntze
On *Portulaca oleracea*

ALBUGO CANDIDA (Pers.) O. Kuntze
On *Lepidium virginicum*
Capsella Bursa-pastoris
Cakile edentula
Raphanus sativus (cult.)
caudatus (cult.)
Brassica alba (cult.)
nigra
Sisymbrium officinale
Radicula palustris
Cardamine douglassii

ALBUGO TRAGOPOGONIS (DC.) S. F. Gray
On *Iva xanthifolia*
Ambrosia artemisiaefolia
Artemisia biennis
Helianthus annuus
Senecio aureus
Cirsium muticum
arvense
Tragopogon pratensis
porrifolius (cult.)

PHYTOPHTHORA THALICTRI Wilson & Davis
On *Thalictrum revolutum*
dasycarpum

PHYTOPHTHORA INFESTANS (Mont.) DBy.
On *Solanum tuberosum* (cult.)

BREMIA LACTUCAE Regel
On *Lactuca sativa* (cult.)
canadensis
spicata

PLASMOPARA HUMULI (Miyake & Takashashi)
On *Humulus Lupulus*

PLASMOPARA PYGMAEA (Unger) Schroet.
On *Hepatica acutiloba*
Anemone canadensis
quinquefolia

PLASMOPARA RIBICOLA Schroet.
On *Ribes cynosbati*
oxyacanthoides
prostratum
triste

PLASMOPARA GERANII (Pk.) Berl. & De Toni
On *Geranium maculatum*

PLASMOPARA OBDUCENS Schroet.
On *Impatiens pallida*
biflora

PLASMOPARA VITICOLA (B. & C.) Berl. & De Toni
On *Psedera sp. indet.*
Vitis labrusca (cult.)
vulpina
spp. indet.

PLASMOPARA AUSTRALIS (Speg.) Swingle
On *Sicyos angulatus*

PLASMOPARA HALSTEDII (Farl.) Berl. & De Toni
On *Eupatorium urticaefolium*
Solidago riddellii
Erigeron annuus
Silphium terebinthinaceum
trifoliatum
integrifolium
perfoliatum
Ambrosia artemisiaefolia
trifida
Rudbeckia laciniata
Helianthus annuus
occidentalis
grosse-serratus
divaricatus
strumosus
tuberosus
Bidens frondosa
vulgata
connata
cernua
~~*aristosa*~~ *trichocarpa*
Erechtites hieracifolia

PERONOSPORA SCHLEIDENI Unger
On *Allium Cepa* (cult.)

PERONOSPORA URTICAE (Lib.) DBy.
On *Urtica gracilis*

PERONOSPORA POLYGONI Thuem.
On *Polygonum scandens*

PERONOSPORA EFFUSA (Grev.) Rabh.
On *Chenopodium hybridum*
album

PERONOSPORA OBOVATA Bon.
On *Spergula arvensis*

PERONOSPORA ALSINEARUM Caspary
On *Cerastium nutans*

PERONOSPORA FICARIAE Tul.
On *Ranunculus fascicularis*
pennsylvanicus
septentrionalis

PERONOSPORA CORYDALIS DBy.
On *Dicentra cucullaria*

PERONOSPORA PARASITICA (Pers.) Tul.
On *Draba caroliniana*
Lepidium virginicum
Raphanus sativus (cult.)
Brassica nigra
arvensis
Radicula palustris
Dentaria laciniata
Cardamine douglassii
Arabis laevigata

PERONOSPORA POTENTILLAE DBy.
On *Potentilla monspeliensis*
Geum canadense
macrophyllum
strictum
rivale
Agrimonia parviflora

PERONOSPORA RUBI Rabh.
On *Rubus canadensis*

PERONOSPORA TRIFOLIORUM DBy.
On *Medicago sativa* (cult.)

PERONOSPORA VICIAE (Berk.) DBy.
On *Pisum sativum* (cult.)
Vicia americana?

PERONOSPORA EUPHORBIAE Fckl.
On *Acalypha virginica?*
Euphorbia maculata

PERONOSPORA FLOERKEAE Kell.
On *Floerkea proserpinacoides*

PERONOSPORA ARTHURI Farl.
On *Oenothera biennis*

PERONOSPORA HYDROPHYLLI Waite.
On *Hydrophyllum virginianum*

PERONOSPORA LOPHANTHI Farl.
On *Agastache scrophulariaefolia*

PERONOSPORA HEDEOMAE Kell. & Sw.
On *Dracocephalum parviflorum*

PERONOSPORA SORDIDA B. & Br.
On *Scrophularia marilandica*

PERONOSPORA GRISEA Unger
On *Veronica Anagallis-aquatica*
peregrina
arvensis

PERONOSPORA ALTA Fckl.
On *Plantago major*
Rugelii

PERONOSPORA CALOTHECA D By.
On *Galium Aparine*
lanceolatum
boreale
triflorum

PERONOSPORA LEPTOSPERMA DBy.
On *Artemisia biennis*

BASIDIOPHORA ENTOSPORA Roze & Cornu
On *Aster Novae-angliae*
Drummondii
puniceus
Solidago rigida

SCLEROSPORA GRAMINICOLA (Sacc.) Schroet.
On *Setaria viridis*
italica

PROTOMYCETALES

PROTOMYCES FUSCUS Pk.
On *Hepatica triloba*
acutiloba

PROTOMYCES ANDINUS Pat.
On *Ambrosia trifida*
artemisiaefolia
Bidens frondosa
connata
cernua

ASCOMYCETES

PYRENOMYCETALES

PERISPORIACEAE

PODOSPHAERA OXYACANTHAE (DC.) DBy.
On *Spiraea salicifolia*
tomentosa
Pyrus coronaria
Crataegus oxyacantha
spp. indet.
Prunus virginiana
pennsylvanica
pumila
americana
spp. indet. (cult.)

PODOSPHAERA BIUNCINATA Cke. & Pk.
On *Hamamelis virginiana*

PODOSPHAERA LEUCOTRICHA (E. & E.) Salm.
On *Pyrus Malus*

SPHAEROTHECA MORS-UVAE (Schw.) B. & C.
On *Ribes cynosbati*
americanum

SPHAEROTHECA HUMULI (DC.) Burr.

On *Mitella diphylla*
Physocarpus opulifolius
Potentilla palustris
Geum canadense
virginianum
macrophyllum
Rubus idaeus aculeatissimus
triflorus
parviflorus
Agrimonia gryposepala
striata
sp. indet.
Rosa spp. indet.
Rhus typhina
glabra
Epilobium coloratum

SPHAEROTHECA HUMULI (DC.) Burr. var. **FULIGINEA** (Schlecht.) Salm.

On *Agastache scrophulariaefolia*
Prunella vulgaris
Veronica virginica
serpyllifolia
Gerardia grandiflora
Pedicularis lanceolata
Plantago major
Bidens frondosa
connata
~~*aristosa*~~ *trichocarpa*
Erechtites hieracifolia
Taraxacum officinale
Prenanthes alba

UNCINULA SALICIS (DC.) Wint.

On *Salix spp. varii*
Populus spp. varii

UNCINULA NECATOR (Schw.) Burr.

On *Psedera sp. indet.*
Vitis spp. varii

UNCINULA CIRCINATA Cke. & Pk.
On *Acer Saccharum*
saccharinum
rubrum

UNCINULA MACROSPORA Pk.
On *Ulmus americana*

UNCINULA CLINTONII Pk.
On *Tilia americana*

MICROSPHAERA ALNI (Wallr.) Wint.
On *Corylus americana*
rostrata
Carpinus caroliniana
Betula pumila glandulifera
Fagus grandifolia
Quercus alba
macrocarpa
rubra
ellipsoidalis
Lathyrus palustris
venosus
ochroleucus
Ilex verticillata
Nemopanthus mucronata
Ceanothus americanus
Cornus alternifolia
Syringa vulgaris (cult.)
Cephalanthus occidentalis
Lonicera tatarica (cult.)
sullivantii
dioica
Viburnum acerifolium
pubescens
Lentago

——————————var. EXTENSA (C. & P.) Salm.
On *Quercus rubra*

——————————var. VACCINII (Schw.) Salm.
On *Kalmia polifolia*
Epigaea repens
Gaylussacia baccata
Vaccinium pennsylvanicum
canadense

MICROSPHAERA EUPHORBIAE (Pk.) B. & C.
On *Euphorbia corollata*

MICROSPHAERA GROSSULARIAE (Wallr.) Lev.
On *Sambucus canadensis*
racemosa

MICROSPHAERA DIFFUSA Cke. & Pk.
On *Desmodium canescens*
paniculatum
canadense
Lespedeza violacea

MICROSPHAERA RUSSELLII Clint.
On *Oxalis "stricta"*
corniculata

ERYSIPHE GRAMINIS DC.
On *Poa pratensis*
Agropyron repens
Gramineae varii

ERYSIPHE AGGREGATA (Pk.) Farl.
On catkins of *Alnus incana*

ERYSIPHE POLYGONI DC.
On *Polygonum aviculare*
Ranunculus delphinifolius
abortivus
acris
Thalictrum dasycarpum
Clematis virginiana
Caltha palustris
Aquilegia canadensis
Parnassia caroliniana
Lupinus perennis
Astragalus canadensis
Lathyrus venosus
ochroleucus
Amphicarpa monoica
Geranium maculatum

ERYSIPHE GALEOPSIDIS DC.
Stachys tenuifolia aspera
Chelone glabra

ERYSIPHE CICHORACEARUM DC.

On *Parietaria pennsylvanica*
Phlox paniculata
divaricata
Drummondii
Hydrophyllum virginianum
Lappula virginiana
Verbena urticaefolia
Teucrium canadense
Scutellaria lateriflora
galericulata
parvula
Plantago major
Rugelii
Eupatorium purpureum
perfoliatum
urticaefolium
Solidago canadensis
Aster divaricatus
drummondii
laevis
lateriflorus
puniceus
umbellatus
Inula Helenium
Ambrosia artemisiaefolia
Xanthium sp. indet.
Helopsis scabra
Helianthus strumosus
Dahlia sp. indet. (cult.)
Helenium autumnale
Cirsium discolor

PHYLLACTINIA CORYLEA (Pers.) Karst.

On *Carya sp. indet.*
Corylus americana
Ostrya virginiana
Carpinus caroliniana
Betula alba papyrifera
Alnus incana
Fagus grandifolia
Quercus sp. indet.
Hamamelis virginiana
Crataegus sp. indet.

Zanthoxylum americanum
Celastrus scandens
Acer Saccharum
Cornus stolonifera
Fraxinus pennsylvanica

DIMEROSPORIUM COLLINSII (Schw.) Thuem.
On *Amelanchier spp. indet.*

DIMEROSPORIUM CONGLOBATUM (B. & C.) Ell. & Evht.
On *Arctostaphylos Uva-ursi*

PARODIELLA PERISPORIODES (B. & C.) Speg.
On *Desmodium grandiflorum*

SPHAERIACEAE

GNOMONIELLA CORYLI (Batsch) Sacc.
On *Corylus americana*
rostrata

GNOMONIELLA FIMBRIATA (Pers.) Sacc.
On *Carpinus caroliniana*

PHYSALOSPORA AMBROSIAE Ell. & Evht.
On *Ambrosia trifida*
artemisiifolia

CRYPTOSPORELLA ANOMALA (Pk.) Sacc.
On *Corylus americana*

SPHAERELLA ZIZANIAE (Schw.) Ellis
On *Leersia oryzoides*

SPHAERELLA FRAGARIAE (Tul.) Sacc.
On *Fragaria virginiana*
vesca

VENTURIA PULCHELLA
On *Chamaedaphne calyculata*

VENTURIA DICKIEI (B. & Br.) Ces. & De Not.
On *Linnaea borealis*

HYPOCREACEAE

HYPOMYCES LATERITIUS (Fr.) Tul.
On *Lactarius zonarius*
sp. indet.

HYPOMYCES TORMINOSUS (Mont.) Tul.
On *Lactarius torminosus*

HYPOMYCES VIRIDIS (A. & S.) Sacc.
On an undetermined mushroom

HYPOMYCES LACTIFLUORUM (Schw.) Tul.
On *Russula delica* Fr.

HYPOMYCES CHRYSOSPERMUS Tul.
On *Boletus scaber*
chrysenteron
subtomentosus

HYPOMYCES AURANTIUS (Pers.) Tul.
On *Polyporus frondosus*

HYPOMYCES POLYPORINUS
On *Polyporus versicolor*

HYPOCREA AURANTIACA Pk.
On *Polyporus chioneus*

CLAVICEPS PURPUREA (Fr.) Tul.
On *Secale cereale* (cult.)
Triticum vulgare (cult.)
(Sclerotia only)

CLAVICEPS SP. INDET.
On *Zizania palustris*
Phalaris arundinacea
Oryzopsis racemosa
Phleum pratense
Agrostis hyemalis
Calamagrostis canadensis
Koeleria cristata
Poa compressa
Glyceria nervata
Glyceria septentrionalis

Agropyron repens
Elymus canadensis
striatus
(Sclerotia only)

CLAVICEPS NIGRICANS Tul.
On *Eleocharis sp. indet.*
(Sclerotia only)

CLAVICEPS JUNCI Adams
On *Juncus nodosus*
(Sclerotia only)

CORDYCEPS CAPITATA (Holmsk.) Lk.
On *Elaphomyces sp. indet*

CORDYCEPS HERCULEA (Schw.) Ell. & Evht.
On larvae of *Lachnosterna?*

CORDYCEPS MILITARIS (L.) Lk.
"On pupae of small moths (?)"

EPICHLOE TYPHINA (Pers.) Tul.
On *Andropogon furcatus*
Calamagrostis canadensis
Koeleria cristata
Elymus sp. indet.
Hystrix patula

HYPOCRELLA SP. INDET.
On *Podophyllum peltatum*
Eupatorium urticaefolium

DOTHIDEACEAE

BALANSIA HYPOXYLON (Pk.) Atk.
On *Calamagrostis canadensis*

PHYLLACHORA PTERIDIS (Reb.) Fckl.
On *Pteris aquilina*

PHYLLACHORA GRAMINIS (Pers.) Fckl.
On many grasses

PHYLLACHORA CYPERI Rehm
On *Cyperus Schweinitzti*

PHYLLACHORA JUNCI (Fr.) Fckl.
On *Juncus tenuis*

PHYLLACHORA TRIFOLII (Pers.) Fckl.
On *Trifolium pratense*
repens

PHYLLACHORA LESPEDEZAE
On *Lespedeza capitata*

DOTHIDELLA ULMEA (Schw.) E & E
On *Ulmus americana*

PLOWRIGHTIA MORBOSA (Schw.) Sacc.
On *Prunus serotina*
virginiana
pennsylvanica
americana

MONTAGNELLA HELIOPSIDIS (Schw.) Sacc.
On *Aster sp. indet.*
Helianthus sp. indet.

MICROTHYRIACEAE

ASTERINA RUBICOLA Ell. & Evht.
On *Rubus idaeus aculeatissimus*

ASTERINA GAULTHERIAE Curt.
On *Gaultheria procumbens*
Arctostaphylos Uva-ursi

ASTERINA PLANTAGINIS Ellis
On *Plantago Rugelii*

HYSTERIACEAE

LOPHODERMIUM PINASTRI (Schrad.) Chev.
On *Pinus Strobus*
Banksiana

DISCOMYCETALES

PEZIZACEAE

SCLEROTINIA TUBEROSA Fckl.
On *Anemone quinquefolia*

MOLLISIA DEHNII (Rabh.) Karst.
On *Potentilla monspeliensis*

PHACIDIACEAE

PSEUDOPEZIZA SINGULARIA (Pk.) Pk.
On *Ranunculus sceleratus*
pennsylvanicus

PSEUDOPEZIZA TRIFOLII (Biv. Bernh.) Fckl.
On *Trifolium pratense*

PSEUDOPEZIZA MEDICAGINIS (Lib.) Sacc.
On *Medicago sativa* (cult.)

PSEUDOPEZIZA REPANDA (Fr.) Karst.
On *Galium tinctorium*

FABRAEA ROUSSEAUANA Sacc. & Bomm.
On *Caltha palustris*

RHYTISMA SALICINUM (Pers.) Fr.
On *Salix spp. varii*

RHYTISMA ILICIS-CANADENSIS Schw.
On *Ilex verticillata*
Nemopanthus mucronata

RHYTISMA ACERINUM (Pers.) Fr.
On *Acer spicatum*
Saccharum
saccharinum
rubrum

RHYTISMA PUNCTATUM (Pers.) Fr.
On *Acer spicatum*
Saccharum

RHYTISMA ANDROMEDAE (Pers.) Fr.
On *Andromeda glaucophylla*

RHYTISMA SOLIDAGINIS Schw.
On *Solidago spp. varii*

RHYTISMA ASTERIS Schw.
On *Aster spp. varii*

STICTIDACEAE

KEITHIA THUJINA E. J. Durand
On *Thuya occidentalis*

EXOASCACEAE

TAPHRINA JOHANSONII Sadeb.
On fruit of *Populus tremuloides*

TAPHRINA COERULESCENS (Desm. & Mont.) Tul.
On *Quercus rubra*
coccinea

TAPHRINA POTENTILLAE (Farl.) Johans.
On *Potentilla arguta*

EXOASCUS ALNI-INCANAE Kuehn
On *Alnus incana*

EXOASCUS CERASI Fckl.
On *Prunus virginiana*

EXOASCUS PRUNI Fckl.
On fruit of *Prunus*

EXOASCUS DEFORMANS (Berk.) Fckl.
On *Prunus Persica* (cult)

LABOULBENIACEAE

LABOULBENIA GYRINIDARUM Thaxt.
On ? *Gyrinus*

DEUTEROMYCETES

SPHAEROPSIDALES

SPHAERIOIDACEAE

PHYLLOSTICTA CARICIS (Fckl) Sacc.
On *Carex trisperma*
(?) *pennsylvanicus*
intumescens

PHYLLOSTICTA RENOUANA Sacc. & Roum.
On *Typha latifolia*

PHYLLOSTICTA CRUENTA (Fr.) Kickx var. PALLIDIOR (Pk.)
On *Smilacina racemosa*
stellata

————var. DISCINCTA (Davis)
On *Uvularia grandiflora*
Oakesia sessilifolia

PHYLLOSTICTA TRILLII Ell. & Evht.
On *Trillium cernuum*

PHYLLOSTICTA IRIDIS Ell. & Mart.
On *Iris versicolor*

PHYLLOSTICTA APICALIS Davis
On *Salix lucida*

PHYLLOSTICTA FAGICOLA Ell. & Morgan.
On *Fagus grandifolia*

PHYLLOSTICTA QUERCUS Sacc. & Speg.
On *Quercus alba*
macrocarpa

PHYLLOSTICTA PHOMIFORMIS Sacc.
On *Quercus alba*

PHYLLOSTICTA ATRIPLICIS Desm.
On *Chenopodium album*

PHYLLOSTICTA NEBULOSA Sacc.
On *Silene noctiflora*

PHYLLOSTICTA FATISCENS Pk.
On *Nymphaea advena*

PHYLLOSTICTA HAMAMELIDIS Cke.
On *Hamamelis virginiana*

PHYLLOSTICTA PYRINA Sacc.
On *Pyrus coronaria*
malus

PHYLLOSTICTA SEROTINA Cke.
On *Prunus serotina*

PHYLLOSTICTA PRUNICOLA (Opiz ?) Sacc.
On *Prunus serotina*
nigra

PHYLLOSTICTA DESTRUENS Desm.
On *Prunus virginiana*

PHYLLOSTICTA DESMODII Ell. & Evht.
On *Desmodium canescens*

PHYLLOSTICTA OXALIDIS Sacc.
On *Oxalis stricta*

PHYLLOSTICTA MINIMA (B. & C.) Ell. & Evht.
On *Acer spicatum*
saccharum
rubrum

PHYLLOSTICTA NEGUNDINIS Sacc. & Speg.
On *Acer Negundo*

PHYLLOSTICTA PAVIAE Desm.
On *Aesculus Hippocastanum*

PHYLLOSTICTA LABRUSCAE Thuem.
On *Psedera vitacea*
Vitis vulpina
sp. indet. (cult.)

PHYLLOSTICTA SPERMOIDES Pk.
On *Vitis vulpina*

PHYLLOSTICTA VIOLAE Desm.
On *Viola sp. indet.*

PHYLLOSTICTA LUDWIGIAE Pk.
On *Ludvigia polycarpa*

PHYLLOSTICTA DODECATHEI Trel.
On *Dodecatheon Meadia*

PHYLLOSTICTA SYRINGAE West.
On *Syringa vulgaris*

PHYLLOSTICTA APOCYNI Trel.
On *Apocynum cannabinum*

PHYLLOSTICTA DECIDUA Ell & Kell.
On *Radicula Armoracia*
Geum canadense
Aralia racemosa
Steironema ciliatum
Cynoglossum officinale
Lappula virginiana
Teucrium canadense
Scutellaria lateriflora
Nepeta hederacea
Leonurus cardiaca
Stachys palustris
tenuifolia
Monarda punctata
Lycopus uniflorus
Mentha arvensis canadensis
Veronica virginica
Eupatorium perfoliatum
Bidens frondosa
Lactuca canadensis

PHYLLOSTICTA HORTORUM Speg.
On *Solanum melongenum* (cult.)

PHYLLOSTICTA DIERVILLAE Davis.
On *Diervilla Lonicera*

PHYLLOSTICTA TINEOLA Sacc.
On *Viburnum pubescens*

PHYLLOSTICTA SIMILISPORA Ell. & Davis.
On *Solidago rigida*

PHYLLOSTICTA ASTERICOLA Ell. & Evht.
On *Aster umbellatus*

PHYLLOSTICTA RUDBECKIAE Ell. & Evht.
On *Rudbeckia laciniata*

PHYLLOSTICTA LAPPAE Sacc.
On *Lappa minor*

PHOMA MELILOTI Allesch.
On *Melilotus alba*

PHOMA UVICOLA B. & C.
On *Vitis* (cult.)

PHOMA CRYPTICA (Nits.) Sacc.
On twigs of *Lonicera sp. indet.*

ASTEROMA VENULOSUM (Walk.) Fckl.
On *Iris versicolor*

AMPELOMYCES QUISQUALIS Ces.
On various *Erysiphaceae*

ASCOCHYTA SPARTINAE Trel.
On *Spartina Michauxiana*

ASCOCHYTA QUERCUS Sacc. & Speg.
On *Quercus spp. indet.*

ASCOCHYTA RHEI Ell. & Evht.
On *Rheum rhaponticum* (cult.)

ASCOCHYTA OXYBAPHI Trel.
On *Oxybaphus nyctagineus*

ASCOCHYTA SILENES Ell. & Evht.
On *Silene antirrhina*

ASCOCHYTA (?) INFUSCANS Ell. & Evht.
On *Ranunculus abortivus*

ASCOCHYTA CLEMATIDINA Thuem.
On *Clematis virginiana*

———— var. THALICTRI Davis.
On *Thalictrum dioicum*

ASCOCHYTA PISI Lib.
On *Pisum sativum* (cult.)
Vicia americana
villosa (cult.)

ASCOCHYTA AMPELINA Sacc.
On *Vitis vulpina*

ASCOCHYTA CORNICOLA Sacc.
On *Cornus Amomum*

ASCOCHYTA CASSANDRAE Pk.
On *Chamaedaphne calyculata*

ASCOCHYTA LOPHANTHI Davis.
On *Agastache scrophulariaefolia*

ASCOCHYTA LEONURI Ell. & Dearn.
On *Lycopus americanus*

ASCOCHYTA TRELEASEI Berl. & Vogl.
On *Vernonia noveboracensis*
Silphium integrifolium

ACTINONEMA ROSAE (Lib.) Fr.
On *Rosa blanda*
rubiginosa

DARLUCA FILUM (Biv.) Cast.
On various *Uredinaceae*

STAGONOSPORA SMILACIS (Ell. & Mart.) Sacc.
On *Smilax herbacea*
hispida

SEPTORIA AQUILINA Pass.
On *Pteris aquilina*

SEPTORIA AGROPYRI Ell. & Evht.
On *Agropyron repens*

SEPTORIA BREVISPORA Ell. & Davis.
On *Bromus ciliatus*

SEPTORIA GRAMINUM Desm.
On *Panicum depauperatum*
Setaria viridis
Poa annua

SEPTORIA BROMI Sacc.
On *Calamagrostis canadensis*
Bromus secalinus

SEPTORIA EVERHARTII Sacc. & Syd.
On *Calamagrostis canadensis*

SEPTORIA PASSERINII Sacc.
On *Hordeum jubatum*

SEPTORIA CARICINELLA Sacc. & Roum.
On *Carex cephaloidea*
spp. indet.

SEPTORIA RIPARIA Pass.
On *Carex (pennsylvanica?)*

SEPTORIA SPICULOSA Ell. & Hol.
On *Symplocarpus foetidus*

SEPTORIA VIRIDI-TINGENS Curt.
On *Allium tricoccum*

SEPTORIA SMILACINAE Ell. & Mart.
On *Smilacina racemosa*

SEPTORIA TRILLII Pk.
On *Trillium recurvatum*
grandiflorum
cernuum
declinatum

SEPTORIA SALICINA Pk.
On *Salix lucida*

SEPTORIA MUSIVA Pk.
On *Populus tremuloides*
balsam fera
deltoides

SEPTORIA CORYLINA Pk.
On *Corylus rostrata*

SEPTORIA OSTRYAE Pk.
On *Ostrya virginiana*

SEPTORIA BETULAE (Lib.) West.
On *Betula alba papyrifera*
pumila

SEPTORIA ALNIFOLIA Ell. & Evht.
On *Alnus sp. indet.*

SEPTORIA CANNABINA West.
On *Cannabis sativa*

SEPTORIA URTICAE Rob.
On *Laportea canadensis*

SEPTORIA PILEAE Thuem.
On *Pilea pumila*

SEPTORIA PARIETARIAE Davis
On *Parietaria pennsylvanica*

SEPTORIA RUMICIS Ellis
On *Rumex altissimus*
verticillatus

SEPTORIA POLYGONORUM Desm.
On *Polygonum Hydropiper*
orientale (cult.)
convolvulus
cilinode
spp. indet.

SEPTORIA STELLARIAE Rob. & Desm.
On *Stellaria longifolia*
media

SEPTORIA CERASTII Rob. & Desm.
On *Cerastium viscosum*

SEPTORIA MELANDRII Pass.
On *Lychnis alba*

SEPTORIA DIMERA Sacc.
On *Silene antirrhina*

SEPTORIA NOCTIFLORA Ell. & Kell.
On *Silene noctiflora*

SEPTORIA SILENICOLA Sacc.
On *Silene stellata*

SEPTORIA COPTIDIS B. & C.
On *Coptis trifolia*

SEPTORIA AQUILEGIAE Sacc. & Penz.
On *Aquilegia canadensis*

SEPTORIA PODOPHYLLINA Pk.
On *Podophyllum peltatum*

SEPTORIA LEPIDIICOLA Ell. & Mart.
On *Lepidium virginicum*

SEPTORIA DENTARIAE Pk.
On *Dentaria laciniata*
Cardamine Douglassii

SEPTORIA ALBICANS E. & E.
On *Saxifraga pennsylvanica*

SEPTORIA RIBIS Desm.
On *Ribes Cynosbati*
americanum
lacustre
prostratum
vulgare
spp. indet.

SEPTORIA GROSSULARIAE (Lib.) West.
On *Ribes sp. indet.*

SEPTORIA AUREA Ell. & Evht.
On *Ribes odoratum*

SEPTORIA SALICIFOLIAE (Trel.) Ell. & Evht.
On *Spiraea salicifolia*
tomentosa

SEPTORIA CRATAEGI Kickx.
On *Crataegus sp. indet.*

SEPTORIA GEI Rob. & Desm.
On *Geum macrophyllum*

SEPTORIA RUBI West.
On *Rubus idaeus aculeatissimus*
occidentalis
parviflorus
alleghenicnsis
hispidus

SEPTORIA AGRIMONIAE-EUPATORII Bomm. & Rouss.
On *Agrimonia striata*
sp. *indet*

SEPTORIA ASTRAGALI Desm.
On *Vicia americana*

SEPTORIA PISI West.
On *Pisum sativum* (cult.)

SEPTORIA PACHYSPORA Ell. & Hol.
On *Zanthoxylum americanum*

SEPTORIA PTELEAE Ell. & Evht.
On *Ptelea trifoliata*

SEPTORIA RHOINA B. & C.
On *Rhus typhina*
glabra

SEPTORIA SACCHARINA Ell. & Evht.
On *Acer Saccharum*

SEPTORIA NOLITANGERIS Gerard
On *Impatiens biflora*

SEPTORIA HETEROCHROA Desm.
On *Malva rotundifolia*

SEPTORIA SPHAERELLOIDES Ell. & Kell.
On *Hypericum punctatum*

SEPTORIA VIOLAE Desm.
On *Viola pubescens*
sp. indet.

SEPTORIA HYALINA Ell. & Evht.
On *Viola spp. indet.*

SEPTORIA LYTHRINA Pk.
On *Lythrum alatum*

SEPTORIA LUDWIGIAE Cke.
On *Ludvigia palustris*

SEPTORIA EPILOBII Cke,
On *Epilobium coloratum*

SEPTORIA OENOTHERAE West.
On *Oenothera biennis*
pumila

SEPTORIA OSMORHIZAE Pk.
On *Osmorhiza claytoni*
longistylis

SEPTORIA UMBELLIFERARUM Kalchb.
On *Cicuta maculata*
Oxypolis rigidior

SEPTORIA APII (Bri. & Car.) Chester
On *Apium graveolens* (cult.)

SEPTORIA SII Rob. & Desm.
On *Sium cicutaefolium*

SEPTORIA CRYPTOTAENIAE Ell. & Rau
On *Cryptotaenia canadensis*

SEPTORIA CORNICOLA Desm.
On *Cornus Amomum*
paniculata
alternifolia

SEPTORIA CONSPICUA Ell. & Mart.
On *Steironema ciliatum*
lanceolatum
quadriflorum

SEPTORIA INCRESCENS Pk.
On *Trientalis americana*

SEPTORIA BESSEYI Pk.
On *Fraxinus americana*

SEPTORIA MENYANTHIS Desm.
On *Menyanthes trifoliata*

SEPTORIA ASCLEPIADICOLA Ell. & Evht.
On *Asclepias incarnata*

SEPTORIA CONVOLVULI Desm.
On *Convolvulus sepium*
Ipomoea purpurea (cult.)

SEPTORIA DIVARICATA Ell. & Evht.
On *Phlox divaricata*

SEPTORIA VERBENAE Rob. & Desm.
On *Verbena urticaefolia*
hastata

SEPTORIA SCUTELLARIAE Thuem.
On *Scutellaria lateriflora*
versicolor
galericulata

SEPTORIA DRACOCEPHALI Thuem.
On *Dracocephalum parviflorum*

SEPTORIA BRUNELLAE Ell. & Hol.
On *Prunella vulgaris*

SEPTORIA PHYSOSTEGIAE Ell. & Evht.
On *Physostegia virginiana*

SEPTORIA GALEOPSIDIS West.
On *Galeopsis Tetrahit.*

SEPTORIA STACHYDIS Rob. & Desm.
On *Stachys tenuifolia aspera*

SEPTORIA LYCOPERSICI Speg.
On *Lycopersicum esculentum* (cult.)

SEPTORIA SCROPHULARIAE Pk.
On *Scrophularia marylandica*

SEPTORIA WILSONI G. W. Clinton
On *Chelone glabra*

SEPTORIA MIMULI Ell. & Kell.
On *Mimulus ringens*

SEPTORIA GRATIOLAE Sacc. & Speg.
On *Gratiola virginiana*

SEPTORIA VERONICAE Desm.
On *Veronica virginica?*
arvensis

SEPTORIA LEPTOSTACHYA Ell. & Kell.
On *Phryma Leptostachya*

SEPTORIA PLANTAGINIS Pass.
On *Plantago major*

SEPTORIA PSILOSTEGA Ell. & Mart.
On *Galium circaezans*
tinctorium

SEPTORIA CEPHALANTHI Ell. & Kell.
On *Cephalanthus occidentalis*

SEPTORIA DIERVILLICOLA Ell. & Evht.
On *Diervilla Lonicera*

SEPTORIA SAMBUCINA Pk.
On *Lonicera hirsuta*
Sambucus canadensis

SEPTORIA CUCURBITACEARUM Sacc.
On *Cucumis Melo* (cult.)
Citrullis vulgaris (cult.)
Cucurbita maxima (cult.)

SEPTORIA SICYI Pk.
On *Echinocystis lobata*

SEPTORIA SPECULARIAE B. & C.
On *Specularia perfoliata*

SEPTORIA CAMPANULAE (Lev.) Sacc.
On *Campanula americana*
aparinoides

SEPTORIA LOBELIAE Pk.
On *Lobelia cardinalis*
siphilitica
spicata
inflata

SEPTORIA LIATRIDIS Ell. & Davis
On *Liatris scariosa*
spicata

SEPTORIA SOLIDAGINICOLA Pk.
On *Solidago caesia*
arguta
canadensis
serotina
Aster shortii
puniceus
umbellatus

SEPTORIA DAVISII Sacc.
On *Solidago canadensis*
serotina

SEPTORIA INTERMEDIA Ell. & Evht.
On *Solidago sp. indet.*

SEPTORIA ATROPURPUREA Pk.
On *Solidago latifolia*
Aster macrophyllus
Drummondii
vinineus

SEPTORIA ASTERICOLA Ell. & Evht.
On *Aster Drummondii*

SEPTORIA ERIGERONTIS B. & C.
On *Erigeron philadelphicus*
annuus
ramosus

SEPTORIA ERIGERONTIS BOLTONIAE Webber.
On *Boltonia asteroides*

SEPTORIA POLYMNIAE Ell. & Evht.
On *Polymnia canadensis*

SEPTORIA SILPHII Ell. & Evht.
On *Silphium integrifolium*
perfoliatum

SEPTORIA BACILLIGERA Wint.
On *Ambrosia trifida*

SEPTORIA XANTHII Desm.
On *Xanthium sp. indet.*

SEPTORIA RUDBECKIAE Ell. & Hals.
On *Rudbeckia hirta.*
laciniata

SEPTORIA HELIANTHI Ell. & Kell.
On *Helianthus annuus*
grosse-serratus
hirsutus
strumosus
tuberosus
spp. indet.

SEPTORIA BIDENTIS Sacc.
On *Bidens frondosa*

SEPTORIA HELENII Ell. & Evht.
On *Helenium autumnale*

SEPTORIA CHRYSANTHEMI Allesch.
On *Chrysanthemum Leucanthemum*

SEPTORIA CACALIAE Ell. & Kell.
On *Cacalia atriplicifolia*

SEPTORIA LAPPARUM Sacc.
On *Lappa sp. indet.*

SEPTORIA CIRSII Niessl
On *Cirsium lanceolatum*
arvense

SEPTORIA COMMONSII Ell. & Evht.
On *Cirsium muticum*

SEPTORIA LACTUCAE Pass.
On *Lactuca sativa* (cult.)
scariola
pulchella

SEPTORIA LACTUCICOLA Ell. & Mart.
On *Lactuca scariola*
canadensis

SEPTORIA NABALI B. & C.
On *Prenanthes alba*

PHLEOSPORA CARICIS Ell. & Evht.
On *Carex (trichocarpa?)*

PHLEOSPORA ULMI (Fr.) Wallr.
On *Ulmus americana*

PHLEOSPORA RETICULATA Ell. & Evht.
On *Lathyrus venosus*
ochroleucus.

PHLEOSPORA CRATAEGI (Kze. & Schm.) Wallr.
On *Crataegus sp. indet.*

PHLEOSPORA ACERIS (Lib.) Sacc.
On *Acer rubrum*

DILOPHOSPORA ALOPECURI Fr.
On *Calamagrostis canadensis*

LEPTOSTROMATACEAE

LEPTOTHYRIUM DRYINUM Sacc.
On *Quercus alba*
rubra

LEPTOTHYRIUM GENTIANAECOLUM (DC?) Baeuml.
On *Gentiana Andrewsii*

LEPTOTHYRIUM PERICLYMENI (Desm.) Sacc.

————var. AMERICANUM Ell. & Evht.
On *Lonicera canadensis*
oblongifolia

PIGGOTIA FRAXINI B. & C.
On *Fraxinus nigra*
sp. indet (cult.)

ENTOMOSPORIUM MACULATUM Lev. var. DOMESTICUM Sacc.
On *Pyrus americana*
Amelanchier spicata

——— var. CYDONIAE Cke. & Ell.
On *Amelanchier canadensis*
spicata

ENTOMOSPORIUM THUMENII (Cke.) Sacc.
On *Crataegus spp. indet.*

MELANCONIALES

MELANCONIACEAE

GLOEOSPORIUM CONFLUENS Ell. & Dearn.
On *Sagittaria latifolia*

GLOEOSPORIUM SALICIS West.
On *Salix fragilis*
longifolia

GLOEOSPORIUM CARYAE Ell. & Evht.
On *Carya ovata*

GLOEOSPORIUM CORYLI (Desm.) Sacc.
On *Corylus americana*
rostrata

GLOEOSPORIUM ROBERGEI Desm.
On *Carpinus caroliniana*

GLOEOSPORIUM BETULARUM Ell. & Mart.
On *Betula nigra*
alba papyrifera

GLOEOSPORIUM FAGI Desm. & Rob. var. AMERICANUM Ell. & Evht.
On *Fagus grandifolia*

GLOEOSPORIUM NERVISEQUUM (Fckl.) Sacc.
On *Quercus alba*
macrocarpa
rubra

GLOEOSPORIUM SEPTORIOIDES Sacc.
On *Quercus velutina*

GLOEOSPORIUM THALICTRI Davis
On *Thalictrum dasycarpum*

GLOEOSPORIUM BERBERIDIS Cke.
On *Berberis vulgaris*

GLOEOSPORIUM RIBIS (Lib.) Mont. & Desm.
On *Ribes americanum*
prostratum
vulgare (cult.)
triste
spp. indet.

GLOEOSPORIUM VENETUM Speg.
On *Rubus spp. varii*

GLOEOSPORIUM FRUCTIGENUM Berk.
On apples

GLOEOSPORIUM FRAGARIAE (Lib.) Mont.
On *Potentilla monspeliensis*

GLOEOSPORIUM EVERHARTII Sacc. & Syd.
On *Vicia americana*

GLOEOSPORIUM DAVISII Ell. & Evht.
On *Vicia americana*

GLOEOSPORIUM LINDEMUTHIANUM Sacc. & Magn.
On *Phascolus sp. indet.*

GLOEOSPORIUM SACCHARINUM Ell. & Evht.
On *Acer Saccharum*

GLOEOSPORIUM APOCRYPTUM Ell. & Evht.
On *Acer Negundo*

GLOEOSPORIUM ARIDUM Ell. & Hol.
On *Fraxinus americana*

PESTALOZZIELLA SUBSESSILIS Ell. & Evht.
On *Geranium maculatum*

MARSSONINA NECANS (Ell. & Evht.) P. Magn.
On *Pteris aquilina*

MARSSONINA APICALIS (Ell. & Evht.) P. Magn.
On *Salix lucida*

MARSSONINA CASTAGNEI (Desm. & Mont.) P. Magn.
On *Populus alba*
tremuloides
grandidentata
candicans
deltoides

MARSSONINA JUGLANDIS (Lib.) P. Magn.
On *Juglans cinerea*
nigra

MARSSONINA MARTINI (Sacc. & Ell.) P. Magn.
On *Quercus alba*
macrocarpa
rubra

MARSSONINA DELASTREI (DeLacr.) P. Magn.
On *Silene stellata*

MARSSONINA CORONARIA (Ell. & Davis)
On *Pyrus coronaria*

MARSSONINA POTENTILLAE (Desm.) P. Magn.
On *Potentilla arguta*
palustris

MARSSONINA MELILOTI (Trel.) P. Magn.
On *Melilotus alba*

MARSSONINA VIOLAE (Pass.) P. Magn.
On *Viola sp. indet.*

MARSSONINA FRAXINI Ell. & Davis
On *Fraxinus nigra*

SEPTOGLOEUM SALICINUM (Pk.) Sacc.
On *Salix pedicellaris*

SEPTOGLOEUM POTENTILLAE Allesch.
On *Potentilla palustris*

SEPTOGLOEUM AMPELOPSIDIS Ell. & Evht.
On *Psedera sp. indet.*

SEPTOGLOEUM APOCYNI Pk.
On *Apocynum androsaemifolium*

CYLINDROSPORIUM SPARGANII (Pass.) Ell. & Evht.
On *Sparganium eurycarpum*

CYLINDROSPORIUM CALAMAGROSTIDIS Ell. & Evht.
On *Calamagrostis canadensis*

CYLINDROSPORIUM GLYCERIAE Ell. & Evht.
On *Glyceria nervata*

CYLINDROSPORIUM TRADESCANTIAE Ell. & Kell.
On *Tradescantia reflexa*

CYLINDROSPORIUM BETULAE Davis
On *Betula pumila*

CYLINDROSPORIUM THALICTRI (Ell. & Evht.)
On *Thalictrum dioicum*
dasycarpum

CYLINDROSPORIUM HUMULI Ell. & Evht.
On *Humulus Lupulus*

CYLINDROSPORIUM CLEMATIDIS Ell. & Evht.
On *Clematis virginiana*

CYLINDROSPORIUM CIRCINANS Wint.
On *Sanguinaria canadensis*

CYLINDROSPORIUM CAPSELLAE Ell. & Evht.
On *Capsella Bursa-pastoris*

CYLINDROSPORIUM RIBIS Davis
On. *Ribes prostratum*
vulgare
triste
sp. indet.

CYLINDROSPORIUM RUBI Ell. & Morgan
On *Rubus idaeus aculeatissimus*

CYLINDROSPORIUM PADI Karst.
On *Prunus pennsylvanica*
serotina
virginiana
sp. indet. (cult.)

CYLINDROSPORIUM SACCHARINUM Ell. & Evht.
On *Acer Saccharum*

CYLINDROSPORIUM NEGUNDINIS Ell. & Evht.
On *Acer Negundo*

CYLINDROSPORIUM LEPTOSPERMUM Pk.
On *Aralia hispida*
nudicaulis

CYLINDROSPORIUM ERYNGII Ell. & Kell.
On *Eryngium yuccifolium*

CYLINDROSPORIUM CICUTAE Ell. & Evht.
On *Cicuta maculata*

CYLINDROSPORIUM ZIZIAE Ell. & Evht.
On *Zizia cordata*

CYLINDROSPORIUM APOCYNI Ell. & Evht.
On *Apocynum androsaemifolium*

CRYPTOMELA CARICIS (Corda) Sacc.
On *Carex sp. indet.*

PESTALLOZZIA KRIEGERIANA Bres.
On *Epilobium angustifolium*

HYPHALES

MUCEDINACEAE

MICROSTROMA JUGLANDIS (Bereng.) Sacc.
On *Juglans cinerea*
Carya ovata

GLOMERULARIA CORNI Pk.
On *Cornus canadensis*
Lonicera canadensis
oblongifolia

FUSIDIUM PTERIDIS Kalchbr.
On *Pteris aquilina*
Aspidium marginale

MONILIA CRATAEGI Diedicke
On *Crataegus spp. indet.*

MONILIA FRUCTIGENA Pers.
On drupes of *Prunus americana*

MONILIA SEAVERI Reade.
On *Prunus serotina*

MONILIA ANGUSTIOR (Sacc.) Reade
On *Prunus virginiana*

OVULARIA DESTRUCTIVA (Phill. & Plowr.) Massee
On *Myrica Gale*
asplenifolia

OVULARIA OBLIQUA (Cke.) Oud.
On *Rumex crispus*
obtusifolius

OVULARIA ISARIOIDES Sacc.
On *Staphylea trifolia*

OVULARIA PYROLAE Trel.
On *Pyrola elliptica*
americana

SEPEDONIUM CHRYSOSPERMUM (Bull.) Fr.
On *Boletus sp. indet.*

GONATOBOTRYUM MACULICOLUM (Wint.) Sacc.
On *Hamamelis virginiana*

DIDYMARIA DIDYMA (Ung.) Schroet.
On *Anemone virginiana*
canadensis
Ranunculus recurvatus
fascicularis
septentrionalis
pennsylvanicus
acris

SEPTOCYLINDRIUM RANUNCULI Pk.
On *Ranunculus abortivus*

SEPTOCYLINDRIUM CONCOMITANS (Ell. & Hol.) Hals.
On *Bidens frondosa*

MASTIGOSPORIUM ALBUM Riess var. CALVUM Ell. & Davis
On *Calamagrostis canadensis*

RAMULARIA CANADENSIS Ell. & Erht.
On *Carex sp. indet.*

RAMULARIA ALISMATIS Fautrey.
On *Alisma Plantago-aquatica*

RAMULARIA SUBRUFA Ell. & Hol.
On *Smilax ecirrhata*

RAMULARIA DIOSCOREAE E. & E.
On *Dioscorea villosa*

RAMULARIA UREDINIS (Voss) Sacc.
On *Salix fragilis*
longifolia
with *Melampsora & Darluca*

RAMULARIA ROSEA (Fckl.) Sacc.
On *Salix discolor*
petiolaris

RAMULARIA URTICAE Ces.
On *Urtica gracilis*

RAMULARIA OCCIDENTALIS Ell. & Kell.
On *Rumex sp. indet.*

RAMULARIA DECIPIENS Ell & Evht.
On *Rumex crispus*

RAMULARIA PRATENSIS Sacc.
On *Rumex verticillatus*

RAMULARIA RUFOMACULANS Pk.
On *Polygonum aviculare*
amphibium
Muhlenbergii
cilinode

RAMULARIA ACTAEAE Ell. & Hol.
On *Actaea rubra*

RAMULARIA ARMORACIAE Fckl.
On *Radicula Armoracia*

RAMULARIA BARBAREAE Pk.
On *Barbarea sp. indet.*

RAMULARIA MITELLAE Pk.
On *Mitella diphylla*

RAMULARIA HAMAMELIDIS Pk.
On *Hamamelis virginiana*

RAMULARIA TULASNEI Sacc.
On *Fragaria virginiana*
vesca

RAMULARIA MODESTA Sacc.
On *Fragaria virginiana*

RAMULARIA WALDSTEINIAE Ell. & Davis
On *Waldsteinia fragarioides*

RAMULARIA ARVENSIS Sacc.
On *Potentilla monspeliensis*
anserina

RAMULARIA DESMODII Cke.
On *Astragalus sp. indet.*
Desmodium sp. indet.
Lespedeza sp. indet.

RAMULARIA OXALIDIS Farl.
On *Oxalis sp. indet.*

RAMULARIA PRINI Pk.
On *Ilex verticillata*

RAMULARIA NEMOPANTHIS Cke. & Pk.
On *Nemopanthus mucronata*

RAMULARIA CELASTRI Ell. & Mart.
On *Celastrus scandens*

RAMULARIA IMPATIENTIS Pk.
On *Impatiens pallida*
biflora

RAMULARIA PUNCTIFORMIS (Schlecht.) v. Hohn.
On *Epilobium angustifolium*
coloratum

RAMULARIA RETICULATA Ell. & Evht.
On *Osmorhiza claytoni*

RAMULARIA HERACLEI (Oud.) Sacc.
On *Heracleum lanatum*

RAMULARIA STOLONIFERA Ell. & Evht.
On *Cornus stolonifera*
alternifolia

RAMULARIA EFFUSA Pk.
On *Vaccinium canadense*

RAMULARIA MULTIPLEX Pk.
On *Vaccinium macrocarpon*

RAMULARIA LYSIMACHIAE Thuem.
On *Lysimachia thyrsiflora*
Steironema ciliatum (?)

RAMULARIA BRUNELLAE Ell. & Hol.
On *Prunella vulgaris*

RAMULARIA MENTHICOLA Sacc.
On *Mentha arvensis canadensis*

RAMULARIA VARIABILIS Fckl.
On *Verbascum Thapsus*

RAMULARIA VERONICAE Fckl.
On *Veronica peregrina*

RAMULARIA PLANTAGINIS Ell. & Mart.
On *Plantago cordata*
Rugelii

RAMULARIA VIBURNI Ell. & Evht.
On *Viburnum Lentago*

RAMULARIA SAMBUCINA Sacc.
On *Sambucus racemosa*

RAMULARIA VIRGAUREAE Thuem.
On *Solidago latifolia*
ulmifolia

RAMULARIA SEROTINA Ell. & Evht.
On *Solidago serotina*

RAMULARIA ASTERIS (Trel.) Barth.
On *Aster novae-angliae*
spp. indet.

RAMULARIA RUDBECKIAE Pk.
On *Rudbeckia laciniata*

RAMULARIA VARIEGATA Ell. & Hol.
On *Petasites palmatus*

RAMULARIA TARAXACI Karst.
On *Taraxacum officinale*

PIRICULARIA GRISEA (Cke.) Sacc.
On *Panicum sanguinale*
Setaria italica
Leersia virginica

PIRICULARIA PARASITICA Ell. & Evht.
On *Elymus virginicus*
Hystrix patula

CERCOSPORELLA PYRINA Ell. & Evht.
On *Pyrus coronaria*

CERCOSPORELLA APOCYNI (Ell. & Kell.) Trel.
On *Apocynum androsaemifolium*
cannabinum

CERCOSPORELLA RETICULATA Pk.
On *Solidago serotina*

CERCOSPORELLA CANA (Pass.) Sacc.
On *Erigeron annuus*
ramosus
canadensis
Aster puniceus

DEMATIACEAE

DICOCCUM NEBULOSUM Ell. & Evht.
On *Fraxinus americana*

CLADOSPORIUM AROMATICUM Ell. & Evht.
On *Rhus glabra*

CLADOSPORIUM TRIOSTEI Pk.
On *Triosteum perfoliatum*

POLYTHRINCIUM TRIFOLII Kze.
On *Trifolium pratense*
repens

PASSALORA FASCICULATA (C. & E.) Earle
On *Euphorbia corollata*

FUSICLADIUM RADIOSUM (Lib.) Lindr.
On *Populus tremuloides*
grandidentata

FUSICLADIUM DENDRITICUM (Wallr.) Fckl.
On *Pyrus prunifolia*
coronaria
Malus

FUSICLADIUM DEPRESSUM (B. & Br.) Sacc.
On *Angelica atropurpurea*

SCOLECOTRICHUM GRAMINIS Fckl.
On many grasses

SCOLECOTRICHUM MACULICOLUM Ell. & Kell.
On *Phragmites communis*

HELMINTHOSPORIUM TERES Sacc.
On *Hordeum vulgare* (cult.)

HELMINTHOSPORIUM GRAMINEUM
On *Hordeum vulgare* (cult.)

HELMINTHOSPORIUM SATIVUM Pammel, King & Bakke
On *Hordeum vulgare* (cult.)
distichon (cult.)

HETEROSPORIUM ALLII Ell. & Mart.
On *Allium canadense*

CERCOSPORA SEQUOIAE Ell. & Evht. var. JUNIPERI Ell. & Evht.
On *Juniperus virginiana*

CERCOSPORA SAGITTARIAE Ell. & Kell.
On *Sagittaria latifolia*
heterophylla

CERCOSPORA ALISMATIS Ell. & Hol.
On *Alisma Plantago-aquatica*

CERCOSPORA CARICINA Ell. & Dearn.
On *Carex rosea*
cephaloidea
gracillima
arctata

CERCOSPORA SYMPLOCARPI Pk.
On *Symplocarpus foetidus*

CERCOSPORA CALLAE Pk. & Clint.
On *Calla palustris*

CERCOSPORA PONTEDERIAE Ell. & Dearn.
On *Pontederia cordata*

CERCOSPORA MAIANTHEMI Fckl.
On *Maianthemum canadense*

CERCOSPORA SUBSANGUINEA Ell. & Evht.
On *Maianthemum canadense*

CERCOSPORA MISSISSIPPIENSIS Tracy & Earle
On *Smilax hispida*

CERCOSPORA DIOSCOREAE Ell. & Mart.
On *Dioscorea villosa*

CERCOSPORA CYPRIPEDII Ell. & Dearn.
On *Cypripedium parviflorum*
acaule

CERCOSPORA BOEHMERIAE Pk.
On *Boehmeria cylindrica*

CERCOSPORA AVICULARIS Wint.
On *Polygonum aviculare*
erectum

CERCOSPORA HYDROPIPERIS (Thuem.) Speg.
On *Polygonum Hydropiper*

CERCOSPORA DUBIA (Riess) Wint.
On *Chenopodium album*
Atriplex patula

CERCOSPORA BETAECOLA Sacc.
On *Beta vulgaris*

CERCOSPORA OXYBAPHI Ell. & Hals.
On *Oxybaphus nyctagineus*

CERCOSPORA NYMPHAEACEA Cke. & Ellis
On *Castalia tuberosa*

CERCOSPORA SQUALIDULA Pk.
On *Clematis virginiana*

CERCOSPORA MERROWAE Ell. & Evht.
On *Isopyrum biternaturm*

CERCOSPORA MENISPERMI Ell. & Hol.
On *Menispermum canadense*

CERCOSPORA CAULOPHYLLI Pk.
On *Caulophyllum thalictroides*

CERCOSPORA NASTURTII Pass.
On *Radicula palustris*

CERCOSPORA ARMORACIAE Sacc.
On *Radicula Armoracia*

CERCOSPORA SEDOIDES Ell. & Evht.
On *Penthorum sedoides*

CERCOSPORA HEUCHERAE Ell. & Mart.
On *Heuchera sp. indet.*

CERCOSPORA RUBIGO Cke. & Hark (?)
On *Spiraea salicifolia*

CERCOSPORA PYRI Farl.
On *Pyrus arbutifolia*
melanocarpa

CERCOSPORA COMARI Pk.
On *Potentilla palustris*

CERCOSPORA ROSAECOLA Pass.
On *Rosa carolina*

CERCOSPORA CIRCUMSCISSA Sacc.
On *Prunus serotina*

CERCOSPORA ZEBRINA Pass.
On *Trifolium pratense*
repens
hybridum

CERCOSPORA DAVISII Ell. & Evht.
On *Melilotus alba*

CERCOSPORA DESMODII Ell. & Kell.
On *Desmodium grandiflorum*

CERCOSPORA VICIAE Ell. & Hol.
On *Vicia caroliniana*
Lathyrus venosus

CERCOSPORA TUBEROSA Ell. & Kell.
On *Apios tuberosa*

CERCOSPORA MONOICA Ell. & Hol.
On *Amphicarpa monoica*

CERCOSPORA GERANII Kell. & Swingle
On *Geranium maculatum*

CERCOSPORA ACALYPHAE Pk.
On *Acalypha virginica*

CERCOSPORA RHAMNI Fckl.
On *Rhamnus alnifolia*
cathartica

CERCOSPORA CEANOTHI Kell. & Swingle
On *Ceanothus ovatus*

CERCOSPORA AMPELOPSIDIS Pk.
On *Psedera sp. indet.*

CERCOSPORA VITICOLA Sacc.
On *Vitis vulpina*

CERCOSPORA MICROSORA Sacc.
On *Tilia americana*

CERCOSPORA ALTHAEINA Sacc.
On *Althaea rosea*

CERCOSPORA GRANULIFORMIS Ell. & Hol.
On *Viola spp. indet.*

CERCOSPORA LYTHRI (West.) Niessl
On *Lythrum alatum*

CERCOSPORA OSMORHIZAE Ell. & Evht.
On *Osmorhiza longistylis*

CERCOSPORA SII Ell. & Evht.
On *Sium cicutaefolium*

CERCOSPORA ZIZIAE Ell. & Evht.
On *Zizia aurea*

CERCOSPORA PLATYSPORA Ell. & Hol.
On *Taenidia integerrima*

CERCOSPORA APII Fres. var. PASTINACAE Farl.
On *Pastinaca sativa*

CERCOSPORA EPIGAEINA Davis
On *Epigaea repens*

CERCOSPORA CLAVATA (Ger.) Pk.
On *Asclepias incarnata*
syriaca
phytolaccoides

CERCOSPORA OMPHACODES Ell. & Hol.
On *Phlox divaricata*

CERCOSPORA LIPPIAE Ell. & Evht.
On *Lippia lanceolata*

CERCOSPORA RACEMOSA Ell. & Mart.
On *Teucrium canadense*
Ambrosia trifida

CERCOSPORA PHYSALIDIS Ellis
On *Physalis pubescens*
heterophylla

CERCOSPORA DIFFUSA Ell. & Evht.
On *Physalis sp. indet.*

CERCOSPORA PENTSTEMONIS Ell. & Kell.
On *Pentstemon hirsutus*

CERCOSPORA GERARDIAE Ell. & Dearn.
On *Gerardia grandiflora*

CERCOSPORA GALII Ell. & Hol.
On *Galium Aparine*
tinctorium

CERCOSPORA CEPHALANTHI Ell. & Kell.
On *Cephalanthus occidentalis*

CERCOSPORA ANTIPUS Ell. & Hol.
On *Lonicera glaucescens*
hirsuta
spp. indet.

CERCOSPORA VARIA Pk.
On *Viburnum Opulus*
Lentago

CERCOSPORA VERNONIAE Ell. & Kell.
On *Vernonia fasciculata*

CERCOSPORA PERFOLIATA Ell. & Evht.
On *Eupatorium purpureum*
perfoliatum

CERCOSPORA STOMATICA Ell. & Davis
On *Solidago latifolia*

CERCOSPORA GNAPHALIACEA Cke.
On *Gnaphalium polycephalum*

CERCOSPORA HELIANTHI Ell. & Evht.
On *Helianthus occidentalis*

CERCOSPORA UMBRATA Ell. & Hol.
On *Bidens connata*

CERCOSPORA MEGALOPOTAMICA Speg.
On *Bidens cernua*

FUMAGO VAGANS Pers.
On *Salix sp. indet.*
Quercus alba

SARCINELLA HETEROSPORA Sacc.
On *Lonicera Sullivantii*
Corylus rostrata
Cornus stolonifera

STILBACEAE

ISARIA ARACHNOPHILA Ditm.
On Spiders

GRAPHIUM GRACILE Pk.
On *Rubus idaeus* var. *aculeatissimus*

ISARIOPSIS ALBO-ROSELLA (Desm.) Sacc.
On *Cerastium vulgatum*
viscosum
nutans

TUBERCULARIACEAE

TUBERCULINA PERSICINA (Ditm.) Sacc.
On the aecia of various rusts

TUBERCULINA DAVISIANA Sacc. & Trav.
On *Salix cordata*

FUSARIUM HETEROSPORUM Nees.
On *Glyceria septentrionalis*

HEMIBASIDII

USTILAGINALES

USTILAGINACEAE

USTILAGO OSMUNDAE Pk.
On *Osmunda regalis*

USTILAGO ZEAE (Beckm.) Unger
On *Euchlaena luxurians*
Zea mays

USTILAGO RABENHORSTIANA Kuehn
On *Digitaria sanguinale*

USTILAGO NEGLECTA Niessl
On *Setaria glauca*

USTILAGO STRIAEFORMIS (West.) Niessl
On *Phleum pratense*
Elymus canadensis

USTILAGO CALAMAGROSTIDIS (Fckl.) Clinton
On *Calamagrostis canadensis*

USTILAGO AVENAE (Pers.) Jensen
On *Avena sativa* (cult.)

USTILAGO LEVIS (Kell. & Sw.) Magn.
On *Avena sativa* (cult.)

USTILAGO PERENNANS Rostr.
On *Arrhenatherum elatius*

USTILAGO LONGISSIMA (Sow.) Tul.
On *Glyceria grandis*

————————var. MACROSPORA Davis
On *Glyceria septentrionalis*

USTILAGO SPERMOPHORA B. & C.
On *Eragrostis hypnoides*
megastachya

USTILAGO MACROSPORA Desm.
On *Agropyron repens*

USTILAGO TRITICI (Pers.) Rostr.
On *Triticum vulgare*

USTILAGO HORDEI (Pers.) Kell. & Sw.
On *Hordeum vulgare*

USTILAGO NUDA (Jensen) Kell. & Sw.
On *Hordeum vulgare*

USTILAGO OLIVACEA (DC.) Tul.
On *Carex rostrata*

USTILAGO UTRICULOSA (Nees) Tul.
On *Polygonum pennsylvanicum*

USTILAGO OXALIDIS Ell. & Tracy
On *Oxalis stricta*

SPHACELOTHECA SORGHI (Lk.) Clinton
On *Sorghum vulgare*

SPHACELOTHECA HYDROPIPERIS (Schum.) D By.
On *Polygonum sagittatum*

CINTRACTIA CARICIS (Pers.) Magn.
On *Carex spp. varii*

CINTRACTIA SUBINCLUSA (Koern.) Magn.
On *Carex lanuginosa*
lupulina
rostrata var. *utriculata*

CINTRACTIA JUNCI (Schw.) Trel.
On *Juncus tenuis*

SCHIZONELLA MELANOGRAMMA (D C.) Schroet.
On *Carex pennsylvanica*

SOROSPORIUM SYNTHERISMAE (Pk.) Farl.
On *Panicum miliaceum* (cult.)
Cenchrus carolinianus

TILLETIACEAE

TILLETIA FOETENS (B. & C.) Trel.
On *Triticum vulgare* (cult.)

TILLETIA TRITICI (Bjerk.) Wint.
On *Triticum vulgare* (cult.)

TUBURCINIA CLINTONIAE Kom.
On *Streptopus roseus*

UROCYSTIS OCCULTA (Wallr.) Rabh.
On *Secale cereale* (cult.)

UROCYSTIS AGROPYRI (Preuss) Schrot.
On *Elymus virginicus*
canadensis

UROCYSTIS CEPULAE Frost
On *Allium Cepa*

ENTYLOMA LINEATUM (Cke.) Davis
On *Zizania palustris*

ENTYLOMA CRASTOPHILUM Sacc.
On *Phleum pratense*
Agrostis alba vulgaris

ENTYLOMA NYMPHAEAE (Cunn.) Setch.
On *Castalia odorata*
tuberosa
Nymphaea advena

ENTYLOMA MICROSPORUM (Ung.) Schrot.
On *Ranunculus septentrionalis*

ENTYLOMA RANUNCULI (Bon.) Schrot.
On *Ranunculus pennsylvanicus*
Anemone quinquefolia

ENTYLOMA THALICTRI Schrot.
On *Thalictrum dioicum*
dasycarpum

ENTYLOMA MENISPERMI Farl. & Trel.
On *Menispermum canadense*

ENTYLOMA FLOERKEAE Holw.
On *Floerkea proserpinacoides*

ENTYLOMA SANICULAE Pk.
On *Sanicula marylandica*

ENTYLOMA AUSTRALE Speg.
On *Physalis virginiana*
heterophylla
spp. indet.

ENTYLOMA LINARIAE Schroet. var. VERONICAE Wint.
On *Veronica peregrina*

ENTYLOMA LOBELIAE Farl.
On *Lobelia inflata*

ENTYLOMA COMPOSITARUM Farl.
On *Eupatorium urticaefolium*
Aster paniculatus
puniceus
Erigeron philadelphicus
Silphium integrifolium
Ambrosia trifida
artemisiaefolia
Lepachys pinnata
Helenium autumnale
Senecio aureus

ENTYLOMA POLYSPORUM (Pk.) Farl.
On *Ambrosia artemisiaefolia*

BURRILLIA PUSTULATA Setch.
On *Sagittaria latifolia*

DOASSANSIA MARTIANOFFIANA (Thum.) Schrot.
On *Potamogeton sp. indet.*

DOASSANSIA SAGITTARIAE (West.) Fisch.
On *Sagittaria latifolia*

————forma CONFLUENS Davis
On *Sagittaria heterophylla elliptica*

DOASSANSIA OPACA Setch.
On *Sagittaria latifolia*

DOASSANSIA INTERMEDIA Setch.
On *Sagittaria latifolia*

DOASSANSIA DEFORMANS Setch.
On *Sagittaria latifolia*

DOASSANSIA ALISMATIS (Nees) Cornu
On *Alisma Plantago-aquatica*

DOASSANSIA RANUNCULINA Davis
On *Ranunculus delphinifolius*

TRACYA LEMNAE (Setch.) Syd.
On *Spirodela polyrhiza*

UREDINALES

PUCCINIACEAE

The Roman numerals I, II, III are used to indicate the aecial, uredinial and telial states respectively.

UROMYCES SPARGANII Cke. & Pk.
On *Sparganium eurycarpum* III.

UROMYCES HALSTEDII De Toni
On *Leersia virginica* II, III.

UROMYCES MINIMUS Davis
On *Muhlenbergia sylvatica* II. III.

UROMYCES ACUMINATUS Arth.
On *Spartina michauxiana* II, III. . .
Steironema lanceolatum I.
Phlox pilosa I.
Polemonium reptans I.

UROMYCES AMPHIDYMUS Syd.
On *Glyceria septentrionalis* II, III.

UROMYCES ELEOCHARIDIS Arth.
On *Eleocharis palustris* II, III.

UROMYCES SCIRPI Burr.
On *Scirpus fluviatilis* II, III.
Cicuta maculata I.
bulbifera I.
Sium cicutaefolium I.

UROMYCES UNIPORULUS Kern.
On *Carex gracillima* II, III.

UROMYCES PERIGYNIUS Hals.
On *Carex intumescens* III.

UROMYCES MINUTUS Diet.
On *Carex gracillima*

UROMYCES ARISAEMAE Cke.
On *Arisaema triphyllum* I, II, III.
Dracontium I, II, III.

UROMYCES PYRIFORMIS Cke.
On *Acorus Calamus* III.

UROMYCES JUNCI-TENUIS Syd.
On *Juncus tenuis* II, III.
Silphium terebinthinaceum I.
integrifolium I.
perfoliatum I.

UROMYCES JUNCI-EFFUSI Syd.
On *Juncus effusus* II, III.

UROMYCES HOLWAYI Lagh.
On *Lilium canadense* II, III.

UROMYCES POLYGONI (Pers.) Fckl.
On *Polygonum aviculare* II, III.
Polygonum erectum II, III.

On *Dianthus Caryophyllus* (cult.) II, III

UROMYCES CARYOPHYLLINUS (Schrank) Wint.
UROMYCES TRIFOLII (Hedw.) Lev.
On *Trifolium pratense* II, III.

UROMYCES TRIFOLII-REPENTIS (Cast.) Liro
On *Trifolium incarnatum* I, II, III, *fide* Trelease
repens I, II, III.
hybridum II, III.

UROMYCES OBLONGUS Vize
On *Trifolium repens* I.

UROMYCES HEDYSARI-PANICULATI (Schw.) Farl.
On *Desmodium Dillenii*

UROMYCES LESPEDEZAE-PROCUMBENTIS (Schw.) Lagh.
On *Lespedeza violacea* I, II.
capitata I, II, III.
sp. indet. I, II, III.

UROMYCES ALBUS (Clint.) Diet & Holw.
On *Vicia americana* I.

UROMYCES FABAE (Pers.) DBy.
On *Vicia americana* II.
Lathyrus palustris I.
venosus I, II, III.
ochroleucus III.

UROMYCES APPENDICULATUS (Pers.) Lk.
On *Phaseolus vulgaris* II, III.

UROMYCES EUPHORBIAE Cke. & Pk.
On *Euphorbia polygonifolia* I, III.
Preslii I, II, III.
maculata I, II, III.

UROMYCES TOXICODENDRI Berk. & Rav.
On *Rhus Toxicodendron* II, III.

UROMYCES HYPERICI-FRONDOSI (Schw.) Arth.
On *Hypericum ascyron* III.
punctatum II, III.
boreale II, III.
virginicum I, II, III.

UROMYCES HOWEI Pk.
On *Asclepias incarnata* III.
syriaca III.

UROMYCES PLUMBARIUS Pk.
On *Oenothera biennis* I.

UROMYCES RUDBECKIAE Arth. & Holw.
On *Rudbeckia laciniata* III.

PUCCINIA ANDROPOGONIS Schw.
On *Andropogon scoparius* III.
Pentstemon hirsutus I.

PUCCINIA PUSTULATA (Curt.) Arth.
On *Andropogon scoparius* II, III.
furcatus II, III.
Comandra umbellata I.
Richardsiana I.

PUCCINIA CEANOTHI (E. & K.) Arth.
On *Ceanothus ovatus* I.

PUCCINIA SORGHI Schw.
On *Zea Mays* II, III.

PUCCINIA EMACULATA Schw.
On *Panicum capillare* II, III.

PUCCINIA PANICI Diet.
On *Panicum virgatum*, II, III.
Euphorbia corollata I.

PUCCINIA SESSILIS Schneid.
On *Phalaris arundinacea* III.

PUCCINIA MILII Erikss.
On *Milium effusum* II.
Oryzopsis asperifolia II, III.

PUCCINIA STIPAE Arth.
On *Stipa spartea* II, III.

PUCCINIA MUHLENBERGIAE Arth. & Holw.
On *Muhlenbergia foliosa* III.

PUCCINIA PHLEI-PRATENSIS Erikss. & Henn.
On *Phleum pratense* II, III.

PUCCINIA SYDOWIANA Diet.
On *Sporobolus asper* III.

PUCCINIA PYGMAEA Erikss.
On *Calamagrostis canadensis* II, III.

PUCCINIA PERMINUTA Arth.
On *Cinna arundinacea* III.

PUCCINIA EATONIAE Arth.
On *Sphenopholis pallens* II, III.
Ranunculus abortivus I.

PUCCINIA MONOICA (Pk.) Arth.
On *Arabis lyrata* I.

PUCCINIA CORONATA Corda.
On *Avena sativa* II, III.
Calamagrostis canadensis II, III.
Dactylis glomerate II, III.
Rhamnus alnifolia I.
cathartica I.

PUCCINIA PERIDERMIOSPORA (Ell. & Tracy) Arth.
On *Spartina michauxiana* II, III.
Fraxinus americana I.
Fraxinus nigra I.

PUCCINIA SEYMOURIANA Arth.
On *Spartina michauxiana* II, III.
Cephalanthus occidentalis I.

PUCCINIA VEXANS Farl.
On *Bouteloua curtipendula* II, III.

PUCCINIA BARTHOLOMAEI Diet.
On *Asclepias syriaca* I.

PUCCINIA PHRAGMITIS (Schum.) Koern.
On *Phragmites communis* II, III.
Rumex spp. indet. I.

PUCCINIA SIMILLIMA Arth.
On *Phragmites communis* II, III.
Anemone canadensis I.

PUCCINIA POARUM Niels.
On *Poa pratensis* II.

PUCCINIA TOMIPARA Trel.
On *Bromus ciliatus* II, III.
Clematis virginiana I.

PUCCINIA IMPATIENTIS (Schw.) Arth.
On *Elymus virginicus* II, III.
striatus II, III.
Impatiens pallida I.
biflora I.

PUCCINIA APOCRYPTA Ell. & Tracy
On *Hystrix patula* III.
Shepherdia canadensis I.

PUCCINIA RUBIGO-VERA (DC.) Wint.
On *Agropyron repens* II, III.
Triticum vulgare II, III.
Hordeum jubatum II, III.
PUCCINIA SIMPLEX (Koern.) Erikss. & Henn.
On *Hordeum vulgare* II, III.

PUCCINIA GRAMINIS Pers.
On *Milium effusum* III.
Alopecurus geniculatus aristulatus II, III.
Agrostis alba vulgaris III.
hyemalis II, III.
Cinna arundinacea II, III.
Avena sativa II, III.
Briza maxima II, III.
Dactylis glomerata II, III.
Glyceria grandis III.
Agropyron repens II, III.
caninum II, III.
Triticum vulgare II, III.
Hordeum jubatum III.
vulgare II, III.
Elymus canadensis III.
striatus III.
Secale cereale II, III.
Berberis vulgaris I.

PUCCINIA CYPERI Arth.
On *Cyperus Schweinitzii* III.
strigosus II, III.
filiculmis III.
Xanthium sp. indet. I.

PUCCINIA DULICHII Syd.
On *Dulichium arundinaceum* III.

PUCCINIA ELEOCHARIDIS Arth.
On *Eleocharis palustris* II, III.
Eupatorium purpureum I.
perfoliatum I.

PUCCINIA OBTECTA Pk.
On *Scirpus americanus* II, III.
validus III.
Bidens frondosa I.

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lineatus II, III.
cyperinus pelius III.
pedicellatus III.
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PUCCINIA CARICIS (Schum.) Rebent.
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PUCCINIA ALBIPERIDIA Arth.
On *Carex gracillima* II, III.
Ribes cynosbati I.
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oxyacanthoides I.
americanum I.
prostratum I.

PUCCINIA PECKII (DeToni) Kell.
On *Carex trichocarpa* III.
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PUCCINIA PATRUELIS Arth.
On *Lactuca Scariola integrata* I.
canadensis I.
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PUCCINIA PHRYMAE (Hals.) Arth.
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PUCCINIA BOLLEYANA Sacc.
On *Carex trichocarpa* III.
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PUCCINIA CARICIS-ASTERIS Arth.
On *Aster spp. varii* I.

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On *Erigeron spp. varii* I.

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PUCCINIA DAYI Clint.
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PHRAGMIDIUM SPECIOSUM Fr.
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sp. indet. (cult.)

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UREDINOPSIS OSMUNDAE Magn.
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CRONARTIUM COMPTONIAE Arth.
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CAEOMA ABIETIS-CANADENSIS Farl.
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Uromyces howei, 902

ASPARAGUS OFFICINALIS
Puccinia asparagi, 907

ASPIDIUM MARGINALE
Fusidium pteridis, 884

ASPIDIUM THELYPTERIS
Uredinopsis atkinsonii, 914

ASPLENIUM FILIX-FOEMINA
Uredinopsis atkinsonii, 914

ASTER DIVARICATUS
Erysiphe cichoracearum, 858

ASTER DRUMMONDII
Basidiophora entospora, 853
Erysiphe cichoracearum, 858
Septoria astericola, 877
Septoria atropurpurea, 877

ASTER LAEVIS
Erysiphe cichoracearum, 858

ASTER LATERIFLORUS
Erysiphe cichoracearum, 858

ASTER MACROPHYLLUS
Septoria atropurpurea, 877

ASTER NOVAE-ANGLIAE
Basidiophora entospora, 853
Ramularia asteris, 888

ASTER PANICULATUS
Entyloma compositarum, 899

ASTER PUNICEUS
Basidiophora entospora, 853
Cercosporella cana, 889
Entyloma compositarum, 899
Erysiphe cichoracearum, 858
Septoria solidaginicola, 876

ASTER SHORTII
Septoria solidaginicola, 876

ASTER UMBELLATUS
Erysiphe cichoracearum, 858
Phyllosticta astericola, 867
Septoria solidaginicola, 876

ASTER VIMINEUS
Septoria atropurpurea, 877

ASTER

Coleosporium solidaginis, 915
Montagnella heliopsidis, 862
Puccinia asteris, 910
Puccinia caricis-asteris,906
Ramularia asteris, 888
Rhytisma asteris, 864
Septoria atropurpurea

ASTRAGALUS CANADENSIS

Erysiphe polygoni, 857

ASTRAGALUS

Ramularia desmodii, 886

ATRIPLEX PATULA

Cercospora dubia, 891

AVENA SATIVA

Puccinia coronata, 904
Puccinia graminis, 905
Ustilago avenae, 896
Ustilago levis, 896

BARBAREA

Ramularia barbareae, 886

BERBERIS VULGARIS

Gloeosporium berberidis, 880
Puccinia graminis, 905

BETA VULGARIS

Cercospora betaecola, 891

BETULA ALBA

Gloeosporium betularum, 880
Phyllactinia corylea, 858.
Septoria betulae, 870

BETULA NIGRA

Gloeosporium betularum, 880

BETULA PUMILA

Cylindrosporium betulae, 882
Melampsoridium betulinum, 913
Microsphaera alni, 856
Septoria betulae, 870

BIDENS ~~ARISTOSA~~ *trichocarpa*

Plasmopara halstedii, 851
Sphaerotheca humuli fuliginea, 855

BIDENS CERNUA

Cercospora megalopotamica, 895
Plasmopara halstedii, 851
Protomyces andinus, 854

BIDENS CONNATA

Cercospora umbrata, 895
Plasmopara halstedii, 851
Protomyces andinus, 854
Sphaerotheca humuli fuliginea, 855

BIDENS FRONDOSA

Phyllosticta decidua, 867
Plasmopara halstedii, 851
Protomyces andinus, 854
Puccinia obtecta, 905
Septocylindrium concomitans, 885
Septoria bidentis, 877
Sphaerotheca humuli fuliginea, 855

BIDENS VULGATA

Plasmopara halstedii, 851

BLUE BOTTLE FLY

Empusa americana, 848

BOEHMERIA CYLINDRICA

Cercospora boehmeriae, 891

BOLETUS

Hypomyces chrysospermus, 860
Sepedonium chrysospermum, 884

BOLTONIA ASTEROIDES

Septoria erigerontis boltoniae, 877

BOUTELOUA CURTIPENDULA

Puccinia vexans, 904

BRASSICA ALBA

Albugo candida, 849

BRASSICA ARVENSIS

Peronospora parasitica, 852

BRASSICA NIGRA
Albugo candida, 849
Peronospora parasitica, 852

BRIZA MAXIMA
Puccinia graminis, 905

BROMUS CILIATUS
Puccinia tomipara, 904
Sclerotium rhizodes, 917
Septoria brevispora, 869

BROMUS SECALINUS
Septoria bromi, 869

CACALIA ATRIPLICIFOLIA
Septoria cacaliae, 878

CACALIA RENIFORMIS
Aecidium compositarum, 916

CADDIS FLIES
Empusa rhizophora, 849

CAKILE EDENTULA
Albugo candida, 849

CALAMAGROSTIS CANADENSIS
Balansia hypoxylon, 861
Claviceps, 860
Cylindrosporium calamagrostidis, 882
Dilophospora alopecuri, 878
Epichloe typhina, 861
Mastigosporium album calvum, 885
Puccinia pygmaea, 903
Puccinia coronata, 904
Sclerotium rhizodes, 917
Septoria bromi, 869
Septoria everhartii, 870
Ustilago calamagrostidis, 896

CALAMAGROSTIS NEGLECTA
Sclerotium rhizodes, 917

CALLA PALUSTRIS
Cercospora callae, 890

CALOPTENUS
Empusa grylli, 849

CALTHA PALUSTRIS
Erysiphe polygoni, 857
Fabraea rousseauana, 863
Puccinia calthae, 907
Puccinia Zopfii, 907

CAMPANULA AMERICANA
Coleosporium campanulae, 915
Septoria campanulae, 876

CAMPANULA APARINOIDES
Septoria campanulae, 876

CANNABIS SATIVA
Septoria cannabina, 871

CAPSELLA BURSA-PASTORIS
Albugo candida, 849
Cylindrosporium capsellae, 883

CARDAMINE DOUGLASSII
Albugo candida, 849
Peronospora parasitica, 852
Septoria dentariae, 872

CAREX ARCTATA
Cercospora caricina, 890

CAREX CEPHALOIDEA
Cercospora caricina, 890
Septoria caricinella, 870

CAREX GRACILLIMA
Cercospora caricina, 890
Puccinia albiperidia, 906
Uromyces minutus, 901
Uromyces uniporulus, 901

CAREX INTUMESCENS
Phyllosticta caricis, 865
Uromyces perigynius, 901

CAREX LANUGINOSA
Cintractia subinclusa, 897

CAREX LONGIROSTRIS
Puccinia phrymae, 906

CAREX LUPULINA
Cintractia subinclusa, 897

CAREX PENNSYLVANICA
Phyllosticta caricis, 865
Septoria riparia, 870
Schizonella melanogramma, 897

CAREX ROSEA
Cercospora caricina, 890

CAREX ROSTRATA
Ustilago olivacea, 897

CAREX ROSTRATA UTRICULATA
Cintractia subinclusa, 897

CAREX TRICHOCARPA
Phleospora caricis, 875
Puccinia bolleyana, 906
Puccinia peckii, 906

CAREX TRISPERMA
Phyllosticta caricis, 865

CAREX
Cintractia caricis, 897
Cryptomela caricis, 883
Puccinia caricis-asteris, 906
Puccinia caricis-erigerontis, 906
Puccinia caricis-solidaginis, 906
Ramularia canadensis, 885
Septoria caricinella, 870

CARPINUS CAROLINIANA
Gloeosporium robergei, 880
Gnomoniella fimbriata, 859
Microsphaera alni, 856
Phyllactinia corylea, 858

CARYA OVATA
Gloeosporium caryae, 879
Microstroma juglandis, 884

CARYA
Phyllactinia corylea, 858

CASTALIA ODORATA
Entyloma nymphaeae, 898

CASTALIA TUBEROSA
Cercospora nymphaeae, 891
Entyloma nymphaeae, 898

CASTILLEJA SESSILIFLORA
Aecidium sp. indet., 916

CAULOPHYLLUM THALICTROIDES
Cercospora caulophylli, 891

CEANOTHUS AMERICANUS
Microsphaera alni, 856

CEANOTHUS OVATUS
Cercospora ceanothi, 893
Puccinia ceanothi, 903

CELASTRUS SCANDEMS
Phyllactinia corylea, 859
Ramularia celastri, 887

CENCHRUS CAROLINIANUS
Sorosporium syntherismae, 897

CEPHALANTHUS OCCIDENTALIS
Cercospora cephalanthi, 894
Puccinia seymouriana, 904
Septoria cephalanthi, 876
Microsphaera alni, 856

CERASTIUM NUTANS
Isariopsis albo-rosella, 895
Peronospora alsinearum, 852

CERASTIUM VISCOSUM
Isariopsis albo-rosella, 895
Septoria cerastii, 871

CERASTIUM VULGATUM
Isariopsis albo-rosella, 895

CHAMAEDAPHNE CALYCULATA
Ascochyta cassandrae, 869
Exobasidum vaccinii, 917
Melampsoropsis cassandrae, 913
Venturia pulchella, 859

CHELONE GLABRA
Erysiphe galeopsidis, 857
Septoria wilsoni, 875

CHENOPODIUM ALBUM
Cercospora dubia, 891
Peronospora effusa, 851
Phyllosticta atriplicis, 865

CHENOPODIUM HYBRIDUM
Peronospora effusa, 351

CHIMAPHILA UMBELLATA
Pucciniastrum pyrolae, 914

CHIOGENES HISPIDULA
Melampsoropsis chiogenis, 914

CHIRONOMUS
Empusa culicis, 849

CHRYSANTHEMUM LEUCANTHEMUM
Septoria chrysanthemi, 878

CICUTA BULBIFERA
Uromyces scirpi, 900

CICUTA MACULATA
Cylindrosporium cicutae, 883
Septoria umbelliferarum, 874
Uromyces scirpi, 900

CINNA ARUNDINACEA
Puccinia graminis, 905
perminuta, 903

CIRCAEA ALPINA
Puccinia circaeae, 908

CIRCAEA LUTETIANA
Puccinia circaeae, 908

CIRSIUM ALTISSIMUM
Puccinia cirsii, 911

CIRSIUM ARVENSE
Albugo tragopogonis, 850
Puccinia obtegens, 911
Septoria cirsii, 878

CIRSIUM DISCOLOR
Erysiphe cichoracearum, 858
Puccinia cirsii, 911

CIRSIUM LANCEOLATUM
Puccinia cirsii-lanceolati, 911
Septoria cirsii, 878

CIRSIUM MUTICUM
Albugo tragopogonis, 850
Septoria commonsii, 878

CITRULLUS VULGARIS
Septoria cucurbitacearum, 876

CLEMATIS VIRGINIANA
Ascochyta clematidina, 868
Cercospora squalidula, 891
Cylindrosporium clematidis, 883
Erysiphe polygoni, 857
Puccinia tomipara, 904

CLINTONIA BOREALIS
Puccinia mesomegala, 907

COMANDRA RICHARDSIANA
Puccinia pustulata, 903

COMANDRA UMBELLATA
Cronartium comandrae, 915
Puccinia pustulata, 903

CONVOLVULUS SEPIUM
Puccinia convolvuli, 909
Septoria convolvuli, 874

COPRINUS ATRAMENTARIUS
Panaeolus epimyces, 917

COPRINUS COMATUS
Panaeolus epimyces, 917

COPTIS TRIFOLIA
Septoria coptidis, 871

CORNUS ALTERNIFOLIA
Microsphaera alni, 856
Ramularia stolonifera, 887
Septoria cornicola, 874

CORNUS AMOMUM
Ascochyta cornicola, 869
Septoria cornicola, 874

CORNUS CANADENSIS
Glomerularia corni, 884
Puccinia porphyrogenita, 909

CORNUS PANICULATA
Septoria cornicola, 874

CORNUS STOLONIFERA
Phyllactinia corylea, 859
Ramularia stolonifera, 887
Sarcinella heterospora, 895

CORYLUS AMERICANA
Cryptosporella anomala, 859
Glocosporium coryli, 880
Gnomoniella coryli, 859
Microsphaera alni, 856
Phyllactinia corylea, 858

CORYLUS ROSTRATA
Glocosporium coryli, 880
Gnomoniella coryli, 859
Microsphaera alni, 856
Sarcinella heterospora, 895
Septoria corylina, 870

CRATAEGUS MACRANTHA SUCCULENTA
Gymnosporangium globosum, 912

CRATAEGUS OXYACANTHA
Podosphaera oxyacanthae, 854

CRATAEGUS
Entomosporium thumenii, 879
Gymnosporangium globosum, 912
Monilia crataegi, 884
Phleospora crataegi, 878
Phyllactinia corylea, 858
Podosphaera oxyacanthae, 854
Septoria crataegi, 872

CRYPTOTAENIA CANADENSIS
Septoria cryptotaeniae, 874

CUCUMIS MELO
Septoria cucurbitacearum, 876

CUCURBITA MAXIMA
Septoria cucurbitacearum, 876

CYDONIA VULGARIS
Gymnosporangium clavipes, 911

CYNOGLOSSUM OFFICINALE
Phyllosticta decidua, 867

CYPERUS FILICULMIS
Puccinia cyperi, 905

CYPERUS SCHWEINITZII
Phyllachora cyperi, 861
Puccinia cyperi, 905

CYPERUS STRIGOSUS
Puccinia cyperi, 905

CYPRIPEDIUM ACAULE
Cercospora cypripedii, 891

CYPRIPEDIUM PARVIFLORUM
Cercospora cypripedii, 891
Puccinia cypripedii, 907

CYSTOPTERIS FRAGILIS
Hyalopsora polypodii, 914

DACTYLIS GLOMERATA
Puccinia coronata, 904
Puccinia graminis, 905

DAHLIA
Erysiphe cichoracearum, 858

DECODON VERTICILLATUS
Aecidium nesaeae, 916

DENTARIA LACINIATA
Peronospora parasitica, 852
Septoria dentariae, 872

DESMODIUM CANADENSE
Microphaera diffusa, 857

DESMODIUM CANESCENS
Microsphaera diffusa, 857
Phyllosticta desmodii, 866

DESMODIUM DILLENII
Uromyces hedysari-paniculati, 901

DESMODIUM GRANDIFLORUM
Cercospora desmodii, 892
Parodiella perisporioides, 859

DESMODIUM PANICULATUM
Microsphaera diffusa, 857

DESMODIUM
Ramularia desmodii, 886

DIANTHUS CARYOPHYLLUS
Uromyces caryophyllinus, 901

DICENTRA CUCULLARIA
Aecidium dicentrae, 916
Peronospora corydalis, 852

DIERVILLA LONICERA
Phyllosticta diervillae, 867
Septoria diervillicola, 876

DIGITARIA SANGUINALE
Ustilago rabenhorstiana, 896
Piricularia grisea, 888

DIOSCOREA VILLOSA
Cercospora dioscoreae, 890
Ramularia dioscoreae, 885

DIRCA PALUSTRIS
Aecidium hydnoideum, 916

DODECATHEON MEADIA
Phyllosticta dodecathei, 867

DRABA CAROLINIANA
Peronospora parasitica, 852

DRACOCEPHALUM PARVIFLORUM
Peronospora hedeomae, 853
Septoria dracocephali, 875

DULICHIUM ARUNDINACEUM
Puccinia dulichii, 905

ECHINOCYSTIS LOBATA
Septoria sicyi, 876

ELAPHOMYCES
Cordyceps capitata, 861

ELEOCHARIS PALUSTRIS
Puccinia eleocharidis, 905
Uromyces eleocharidis, 900

ELEOCHARIS
Claviceps nigricans, 861

ELYMUS CANADENSIS
Claviceps, 861
Puccinia graminis, 905
Urocystis agropyri, 898
Ustilago striaeformis, 896

ELYMUS STRIÁTUS
Claviceps, 861
Puccinia graminis, 905
———— impatientis, 904

ELYMUS VIRGINICUS
Piricularia parasitica, 888
Puccinia impatientis, 904
Urocystis agropyri, 898

ELYMUS
Epichloe typhina, 861

EPIGAEA REPENS
Cercospora epigaeina, 893
Microsphaera alni vaccinii, 856

EPILOBIUM ADENOCAULON
Pucciniastrum pustulatum, 914

EPILOBIUM ANGUSTIFOLIUM
Pestalozzia Kriegeriana, 883
Pucciniastrum pustulatum, 914
Ramularia punctiformis, 887

EPILOBIUM COLORATUM
Pucciniastrum pustulatum, 914
Ramularia punctiformis, 887
Septoria epilobii, 873
Sphaerotheca humuli, 855

ERAGROSTIS HYPNOIDES
Ustilago spermophora, 896

ERAGROSTIS MEGASTACHYA
Ustilago spermophora, 896

ERECHTITES HIERACIFOLIA
Plasmopara halstedii, 851
Sphaerotheca humuli fuliginea, 855

ERIGERON ANNUUS
Cercosporella cana, 889
Plasmopara halstedii, 851
Septoria erigerontis, 877

ERIGERON CANADENSIS
Cercosporella cana, 889

ERIGERON PHILADELPHICUS
Entyloma compositarum, 899
Septoria erigerontis, 877

ERIGERON RAMOSUS
Cercosporella cana, 889
Septoria erigerontis, 877

ERIGERON
Puccinia caricis-erigerontis, 906

ERYNGIUM YUCCIFOLIUM
Cylindrosporium eryngii, 883

ERYSIPHEAE
Ampelomyces quisqualis, 868

EUCHLAENA LUXURIANS
Ustilago zeae, 896

EUPATORIUM PERFOLIATUM
Cercospora perfoliata, 894
Erysiphe cichoracearum, 858
Phyllosticta decidua, 867
Puccinia eleocharidis, 905

EUPATORIUM PURPUREUM
Cercospora perfoliata, 894
Erysiphe cichoracearum, 858
Puccinia eleocharidis, 905

EUPATORIUM URTICAEFOLIUM
Entyloma compositarum, 899
Erysiphe cichoracearum, 858
Hypocrella, 861
Plasmopara halstedii, 851
Puccinia tenuis, 910

EUPHORBIA COMMUTATA
Aecidium euphorbiae, 916

EUPHORBIA COROLLATA
Microsphaera euphorbiae, 857
Passalora fasciculata, 889
Puccinia panici, 903

EUPHORBIA MACULATA
Peronospora euphorbiae, 852
Uromyces euphorbiae, 902

EUPHORBIA POLYGONIFOLIA
Uromyces euphorbiae, 902

EUPHORBIA PRESLII
Uromyces euphorbiae, 902

FAGUS GRANDIFOLIA
Gloeosporium fagi americanum, 880
Microsphaera alni, 856
Phyllactinia corylea, 858
Phyllosticta fagicola, 865

FESTUCA ELATIOR
Puccinia phlei-pratensis, 903

FLIES-CADDIS
Empusa rhizophora, 849

FLIES-HOUSE
Empusa muscae, 849

FLIES
Saprolegnia thuretii, 849

FLOERKEA PROSERPINACOIDES
Entyloma floerkeae, 899
Peronospora floerkeae, 853

FLY-BLUE BOTTLE
Empusa americana, 848

FRAGARIA VESCA
Ramularia tulasnei, 886
Sphaerella fragariae, 859

FRAGARIA VIRGINIANA
Ramularia modesta 886,
Ramularia tulasnei, 886
Sphaerella fragariae, 859

FRAXINUS AMERICANA
Dicoccum nebulosum, 889
Gloeosporium aridum, 881
Puccinia peridermiospora, 904
Septoria besseyi, 874

FRAXINUS NIGRA
Marssonina fraxini, 882
Piggotia fraxini, 879
Puccinia peridermiospora, 904

FRAXINUS PENNSYLVANICA
Phyllactinia corylea, 859

FRAXINUS
Piggotia fraxini, 879

GALEOPSIS TETRAHIT
Septoria galeopsidis, 875

GALIUM APARINE
Cercospora galii, 894
Peronospora calotheca, 853
Puccinia punctata, 910

GALIUM ASPRELLUM
Puccinia punctata, 910

GALIUM BOREALE
Peronospora calotheca, 853
Puccinia rubefaciens, 910

GALIUM CIRCAEZANS
Septoria psilostega, 875

GALIUM CONCINNUM
Puccinia punctata, 910

GALIUM LANCEOLATUM
Peronospora calotheca, 853

GALIUM TINCTORIUM
Cercospora galii, 894
Pseudopeziza repanda, 863
Puccinia punctata, 910
Septoria psilostega, 875

GALIUM TRIFLORUM
Peronospora calotheca, 853
Puccinia punctata, 910

GAULTHERIA PROCUMBENS
Asterina gaultheriae, 862

GAYLUSSACIA BACCATA
Exobasidium vaccinii, 917
Microsphaera alni vaccinii, 856

GENTIANA ANDREWSII
Leptothyrium gentianaecolum, 879
Puccinia gentianae, 909

GERANIUM MACULATUM
Cercospora geranii, 892
Erysiphe polygoni, 857
Pestallozziella subsessilis, 881
Plasmopara geranii, 850
Puccinia polygoni-amphibii, 907

GERARDIA GRANDIFLORA
Cercospora gerardiae, 894
Sphaerotheca humuli fuliginea, 855

GEUM CANADENSE
Peronospora potentillae, 852
Phyllosticta decidua, 867
Sphaerotheca humuli, 855
Synchytrium aureum, 848

GEUM MACROPHYLLUM
Peronospora potentillae, 852
Septoria gei, 872
Sphaerotheca humuli, 855

GEUM RIVALE
Peronospora potentillae, 852

GEUM STRICTUM
Peronospora potentillae, 852

GEUM VIRGINIANUM
Sphaerotheca humuli, 855
Synchytrium aureum, 848

GLYCERIA GRANDIS
Puccinia graminis, 905
Ustilago longissima, 896

GLYCERIA NERVATA
Claviceps, 860
Cylindrosporium glyceriae, 882
Sclerotium rhizodes, 917

GLYCERIA SEPTENTRIONALIS
Claviceps, 860
Fusarium heterosporum, 895
Sclerotium globuliferum, 917
Uromyces amphidymus, 900
Ustilago longissima macrospora, 896

GNAPHALIUM POLYCEPHALUM
Cercospora gnaphaliacea, 894

GRAMINEAE
Erysiphe graminis, 857
Phyllachora graminis, 861
Scolecotrichum graminis, 889

GRATIOLA VIRGINIANA
Septoria gratiolae, 875

GYRINUS
Laboulbenia gyrinidarum, 864

HALENIA DEFLEXA
Puccinia haleniae, 909

HAMAMELIS VIRGINIANA
Gonatobotryum maculicolum, 885
Phyllactinia corylea, 858
Phyllosticta hamamelidis, 866
Podosphaera biuncinata, 854
Ramularia hamamelidis, 886

HEDEOMA PULEGIOIDES
Puccinia menthae, 909

HELENIUM AUTUMNALE
Entyloma compositarum, 899
Erysiphe cichoracearum, 858
Septoria h[illegible]enii, 878

HELIANTHUS ANNUUS
Albugo tragopogonis, 850
Plasmopara halstedii, 851
Septoria helianthi, 877

HELIANTHUS DIVARICATUS
Plasmopara halstedii, 851

HELIANTHUS GROSSE-SERRATUS
Plasmopara halstedii, 851
Septoria helianthi, 877

HELIANTHUS HIRSUTUS
Septoria helianthi, 877

HELIANTHUS OCCIDENTALIS
Cercospora helianthi, 894
Plasmopara halstedii, 851

HELIANTHUS STRUMOSUS
Erysiphe cichoracearum, 858
Plasmopara halstedii, 851
Septoria helianthi, 877

HELIANTHUS TUBEROSUS
Plasmopara halstedii, 851
Septoria helianthi, 877

HELIANTHUS
Montagnella heliopsidis, 862
Puccinia helianthi, 910
Septoria helianthi, 877

HELIOPSIS SCABRA
Erysiphe cichoraceārum, 858

HEPATICA ACUTILOBA
Plasmopara pygmaea, 850
Protomyces fuscus, 854
Puccinia pruni-spinosae, 908

HEPATICA TRILOBA
Protomyces fuscus, 854

HERACLEUM LANATUM
Ramularia heraclei, 887

HEUCHERA AMERICANA
Puccinia curtipes, 908

HEUCHERA HISPIDA
Puccinia curtipes, 908

HEUCHERA
Cercospora heucherae, 892

HIERACIUM CANADENSE
Puccinia hieracii, 911

HIERACIUM SCABRUM
Puccinia hieracii, 911
patruelis, 906

HORDEUM JUBATUM
Puccinia graminis, 905
Puccinia rubigo-vera, 905
Sclerotium rhizodes, 917
Septoria passerinii, 870

HORDEUM DISTICHON
Helminthosporium sativum 890

HORDEUM VULGARE
Helminthosporium gramineum, 890
———— sativum, 890
———— teres, 889
Puccinia graminis, 905
Puccinia simplex, 905
Ustilago hordei, 897
nuda, 897

HOUSE FLIES
Empusa muscae, 849

HUMULUS LUPULUS
Cylindrosporium humuli, 882
Plasmopara humuli, 850

HYDROPHYLLUM VIRGINIANUM
Erysiphe cichoracearum, 858
Peronospora hydrophylli, 853
Puccinia hydrophylli, 909

HYPERICUM ASCYRON
Uromyces hyperici-frondosi, 902

HYPERICUM BOREALE
Uromyces hyperici-frondosi, 902

HYPERICUM PUNCTATUM
Septoria sphaerelloides, 873
Uromyces hyperici-frondosi, 902

HYPERICUM VIRGINICUM
Uromyces hyperici-frondosi, 902

HYSTRIX PATULA
Epichloe typhina, 861
Piricularia parasitica, 888
Puccinia apocryta, 904

ILEX VERTICILLATA
Ramularia prini, 887
Rhytisma ilicis-canadensis, 863
Microsphaera alni, 856

IMPATIENS BIFLORA
Plasmopara obducens, 850
Puccinia argentata, 908
Puccinia impatientis, 904
Ramularia impatientis, 887
Septoria nolitangeris, 873

IMPATIENS PALLIDA
Plasmopara obducens, 850
Puccinia impatientis, 904
Ramularia impatientis, 887

INULA HELENIUM
Erysiphe cichoracearum, 858

IPOMOEA PURPUREA
Septoria convolvuli, 874

IRIS VERSICOLOR
Aecidium iridis, 915
Asteroma venulosum, 868
Phyllosticta iridis, 865
Puccinia iridis, 907

ISOPYRUM BITERNATUM
Cercospora merrowae, 891

IVA XANTHIFOLIA
Albugo tragopogonis, 850

JUGLANS CINEREA
Marssonina juglandis, 881
Microstroma juglandis, 884

JUGLANS NIGRA
Marssonina juglandis, 881

JUNCUS EFFUSUS
Uromyces junci-effusae, 901

JUNCUS NODOSUS
Claviceps junci, 861

JUNCUS TENUIS
Cintractia junci, 897
Phyllachora junci, 862
Uromyces junci-tenuis, 901

JUNIPERUS COMMUNIS DEPRESSA
Gymnosporangium clavariaeforme, 912
——— clavipes, 911
——— davisii, 911

JUNIPERUS VIRGINIANA
Cercospora sequoiae juniperi, 890
Gymnosporangium globosum, 912
——— juniperi-virginianae, 912
——— juvenescens, 912

KALMIA POLIFOLIA
Microsphaera alni vaccinii, 856

KOELERIA CRISTATA
Claviceps, 860
Epichloe typhina, 861

KRIGIA AMPLEXICAULIS
Aecidium compositarum, 916

KUHNIA EUPATORIOIDES
Puccinia kuhniae, 910

LACHNOSTERNA
Cordyceps herculea, 861

LACTARIUS TORMINOSUS
Hypomyces torminosus, 860

LACTARIUS ZONARIUS
Hypomyces lateritius, 860

LACTARIUS
Hypomyces lateritius, 860

LACTUCA CANADENSIS
Bremia lactucae, 850
Phyllosticta decidua, 867
Puccinia patruelis, 906
Septoria lactucicola, 878

LACTUCA PULCHELLA
Puccinia hemisphaerica, 911
Septoria lactucae, 878

LACTUCA SATIVA
Bremia lactucae, 850
Septoria lactucae, 878

LACTUCA SCARIOLA
Puccinia patruelis, 906
Septoria lactucicola, 878
Septoria lactucae, 878

LACTUCA SPICATA
Bremia lactucae, 850

LAPORTEA CANADENSIS
Septoria urticae, 871

LAPPA MINOR
Phyllosticta lappae, 868
Septoria lapparum, 878

LAPPULA VIRGINIANA
Erysiphe cichoracearum, 858
Phyllosticta decidua, 867

LARIX LARICINA
Melampsora bigelowii, 913
Melampsoridium betulinum, 913

LATHYRUS OCHROLEUCUS
Erysiphe polygoni, 857
Phleospora reticulata, 878
Microsphaera alni, 856
Uromyces fabae, 902

LATHYRUS PALUSTRIS
Microsphaera alni, 856
Uromyces fabae, 902

LATHYRUS VENOSUS
Cercospora viciae, 892
Erysiphe polygoni, 857
Microsphaera alni, 856
Phleospora reticulata, 878
Uromyces fabae, 902

LEDUM GROENLANDICUM
Melampsoropsis ledi, 913

LEERSIA ORYZOIDES
Sphaerella zizaniae, 859

LEERSIA VIRGINICA
Piricularia grisea, 888
Uromyces Halstedii, 900

LEONURUS CARDIACA
Phyllosticta decidua, 867

LEPACHYS PINNATA
Entyloma compositarum, 899

LEPIDIUM VIRGINICUM
Albugo candida, 849
Peronospora parasitica, 852
Septoria lepidiicola, 872

LESPEDEZA CAPITATA
Phyllachora lespedezae, 862
Uromyces lespedezae-procumbentis, 902

LESPEDEZA VIOLACEA
Microsphaera diffusa, 857
Uromyces lespedezae-procumbentis, 902

LESPEDEZA
Ramularia desmodii, 886
Uromyces lespedezae-procumbentis, 902

LIATRIS SCARIOSA
Septoria liatridis, 876

LIATRIS SPICATA
Septoria liatridis, 876

LILIUM CANADENSE
Uromyces holwayi, 901

LINNAEA BOREALIS
Venturia dickiei, 859

LINUM SULCATUM
Melampsora lini, 913

LINUM USITATISSIMUM
Melampsora lini, 913

LIPPIA LANCEOLATA
Cercospora lippiae, 893

LOBELIA CARDINALIS
Septoria lobeliae, 876

LOBELIA INFLATA
Entyloma lobeliae, 899
Septoria lobeliae, 876

LOBELIA SIPHILITICA
Puccinia lobeliae, 910
Septoria lobeliae, 876

LOBELIA SPICATA
Septoria lobeliae, 876

LONICERA CANADENSIS
Glomerularia corni, 884
Leptothyrium periclymeni americanum, 879

LONICERA DIOICA
Microsphaera alni, 856

LONICERA GLAUCESCENS
Cercospora antipus, 894

LONICERA HIRSUTA
Cercospora antipus, 894
Septoria sambucina, 876

LONICERA OBLONGIFOLIA
Glomerularia corni, 884
Leptothyrium periclymeni americanum, 879

LONICERA SULLIVANTII
Sarcinella heterospora, 895
Microsphaera alni, 856

LONICERA TATARICA
Microsphaera alni, 856

LONICERA
Cercospora antipus, 894
Phoma cryptica, 868

LUDVIGIA PALUSTRIS
Septoria ludwigiae, 873

LUDVIGIA POLYCARPA
Phyllosticta ludwigiae, 867

LUPINUS PERENNIS
Erysiphe polygoni, 857

LUZULA CAMPESTRIS
Puccinia obscura, 907

LYCHNIS ALBA
Septoria melandrii, 871

LYCOPERSICUM ESCULENTUM
Septoria lycopersici, 875

LYCOPUS AMERICANUS
Ascochyta leonuri, 869
Puccinia angustata, 906

LYCOPUS UNIFLORUS
Phyllosticta decidua, 867

LYCOPUS VIRGINICUS
Puccinia angustata, 906

LYSIMACHIA THYRSIFLORA
Aecidium lysimachiae, 916
Ramularia lysimachiae, 887

LYTHRUM ALATUM
Cercospora lythri, 893
Septoria lythrina, 873

MAIANTHEMUM CANADENSE
Cercospora maianthemi, 890
Cercospora subsanguinea, 890

MALVA ROTUNDIFOLIA
Puccinia malvacearum, 908.
Septoria heterochroa, 873

MEDICAGO SATIVA
Peronospora trifoliorum, 852
Pseudopeziza medicaginis, 863

MELILOTUS ALBA
Cercospora davisii, 892
Marssonina meliloti, 882
Phoma meliloti, 868

MENISPERMUM CANADENSE
Cercospora menispermi, 891
Entyloma menispermi, 898

MENTHA ARVENSIS CANADENSIS
Phyllosticta decidua, 867
Puccinia menthae, 909
Ramularia menthicola, 887

MENYANTHES TRIFOLIATA
Physoderma menyanthis, 848
Septoria menyanthis, 874

MILIUM EFFUSUM
Puccinia graminis, 905
——— milii, 903

MIMULUS RINGENS
Aecidium sp. indet., 916
Septoria mimuli, 875
Uredo sp. indet., 915

MITELLA DIPHYLLA
Puccinia heucherae, 908
Ramularia mitellae, 886
Sphaerotheca humuli, 855

MITELLA NUDA
Puccinia heucherae, 908

MONARDA FISTULOSA
Puccinia menthae, 909

MONARDA PUNCTATA
Phyllosticta decidua, 867
Puccinia menthae, 909

MUHLENBERGIA FOLIOSA
Puccinia muhlenbergiae, 903

MUHLENBERGIA SYLVATICA
Uromyces minimus, 900

MYRICA ASPLENIFOLIA
Cronartium comptoniae, 915
Ovularia destructiva, 884

MYRICA GALE
Ovularia destructiva, 884

NEMOPANTHUS MUCRONATA
Ramularia nemopanthis, 887
Microsphaera alni, 856
Rhytisma ilicis-canadensis, 863

NEPETA HEDERACEA
Phyllosticta decidua, 867

NYMPHAEA ADVENA
Entyloma nymphaeae, 898
Phyllosticta fatiscens, 866

OAKESIA SESSILIFOLIA
Phyllosticta cruenta discincta, 865

OENOTHERA BIENNIS
Peronospora arthuri, 853
Puccinia peckii, 906
Septoria oenotherae, 873
Uromyces piumbarius, 902

OENOTHERA PUMILA
Septoria oenotherae, 873

ONOCLEA SENSIBILIS
Uredinopsis mirabilis, 914

ONOCLEA STRUTHIOPTERIS
Uredinopsis struthiopteridis, 915

ORYZOPSIS ASPERIFOLIA
Puccinia milii, 903

ORYZOPSIS RACEMOSA
Claviceps, 860

OSMORHIZA CLAYTONI
Puccinia osmorhizae, 909
Ramularia reticulata, 887
Septoria osmorhizae, 874

OSMORHIZA LONGISTYLIS
Cercospora osmorhizae, 893
Puccinia osmorhizae, 909
Septoria osmorhizae, 874

OSMUNDA CINNAMOMEA
Uredinopsis osmundae, 915

OSMUNDA CLAYTONIANA
Uredinopsis osmundae, 915

OSMUNDA REGALIS
Uredinopsis osmundae, 915
Ustilago osmundae, 896

OSTRYA VIRGINIANA
Phyllactinia corylea, 858
Septoria ostryae, 870

OXALIS CORNICULATA
Microsphaera russellii, 857

OXALIS STRICTA
Microsphaera russellii, 857
Phyllosticta oxalidis, 866
Ustilago oxalidis, 897

OXALIS
Ramularia oxalidis, 886

OXYBAPHUS NYCTAGINEUS
Ascochyta oxybaphi, 868
Cercospora oxybaphi, 891

OXYPOLIS RIGIDIOR
Septoria umbelliferarum, 874

PANICUM CAPILLARE
Puccinia emaculata, 903

PANICUM DEPAUPERATUM
Septoria graminum, 869

PANICUM MILIACEUM
Sorosporium syntherismae, 897

PANICUM VIRGATUM
Puccinia panici, 903

PARIETARIA PENNSYLVANICA
Erysiphe cichoracearum, 858
Septoria parietariae, 871

PARNASSIA CAROLINIANA
Erysiphe polygoni, 857

PASTINACA SATIVA
Cercospora apii pastinacae, 893

PEDICULARIS CANADENSIS
Puccinia clintonii, 910
Synchytrium aureum, 848

PEDICULARIS LANCEOLATA
Sphaerotheca humuli fuliginea, 855

PENTHORUM SEDOIDES
Cercospora sedoides, 891

PENTSTEMON HIRSUTUS
Cercospora pentstemonis, 894
Puccinia andropogonis, 902

PETALOSTEMON
Puccinia petalostemonis, 908

PETASITES PALMATUS
Puccinia nardosmiae, 910
Ramularia variegata, 888

PHALARIS ARUNDINACEA
Claviceps, 860
Puccinia sessilis, 903
Sclerotium rhizodes, 917

PHASEOLUS
Gloeosporium lindemuthianum, 881
Uromyces appendiculatus, 902

PHEGOPTERIS DRYOPTERIS
Uredinopsis phegopteridis, 914

PHLEUM PRATENSE
Claviceps, 860
Entyloma crastophilum, 898
Puccinia phlei-pratensis, 903
Sclerotium rhizodes, 917
Ustilago striaeformis, 896

PHLOX DIVARICATA
Cercospora omphacodes, 893
Erysiphe cichoracearum, 858
Septoria divaricata, 874

PHLOX DRUMMONDII
Erysiphe cichoracearum, 858

PHLOX PANICULATA
Erysiphe cichoracearum, 858

PHLOX PILOSA
Uromyces acuminatus, 900

PHRAGMITES COMMUNIS
Puccinia phragmitis, 904
Puccinia simillima, 904
Scolecotrichum maculicolum, 889

PHRYMA LEPTOSTACHYA
Puccinia phrymae, 906
Septoria leptostachya, 875

PHYLLACHORA GRAMINIS
Piricularia parasitica

PHYSALIS HETEROPHYLLA
Cercospora physalidis, 894
Entyloma australe, 899

PHYSALIS PUBESCENS
Cercospora physalidis, 894

PHYSALIS VIRGINIANA
Entyloma australe, 899
Puccinia physalidis, 909

PHYSALIS
Cercospora diffusa, 894
Entyloma australe, 899

PHYSOCARPUS OPULIFOLIUS
Sphaerotheca humuli, 855

PHYSOSTEGIA VIRGINIANA
Septoria physostegiae, 875

PICEA MARIANA
Melampsoropsis cassandrae, 913
——— ledicola, 913

PILEA PUMILA
Septoria pileae, 871

PINUS BANKSIANA
Lophodermium pinastri, 862
Perider mium sp. indet., 916

PINUS STROBUS
Lophodermium pinastri, 862

PISUM SATIVUM
Ascochyta pisi, 868
Peronospora viciae, 852
Septoria pisi, 873

PLANTAGO CORDATA
Ramularia plantaginis, 888

PLANTAGO MAJOR
Erysiphe cichoracearum, 858
Peronospora alta, 853
Septoria plantaginis, 875
Sphaerotheca humuli fuliginea, 855

PLANTAGO RUGELII
Asterina plantaginis, 862
Erysiphe cichoracearum, 858
Peronospora alta, 853
Ramularia plantaginis, 888

POA ANNUA
Septoria graminum, 869

POA COMPRESSA
Claviceps, 860

POA PRATENSIS
Erysiphe graminis, 857
Puccinia poarum, 904
Sclerotium rhizodes, 917

PODOPHYLLUM PELTATUM
Hypocrella, 861
Puccinia podophylli, 908
Septoria podophyllina, 872

POLEMONIUM REPTANS
Uromyces ocuminatus, 900

POLYGALA SENEGA
Aecidium polygalinum, 916

POLYGONATUM BIFLORUM
Aecidium smilacinae, 915

POLYGONATUM COMMUTATUM
Aecidium smilacinae, 915

POLYGONUM AMPHIBIUM
Puccinia polygoni-amphibii, 907
Ramularia rufomaculans, 886

POLYGONUM AVICULARE
Cercospora avicularis, 891
Erysiphe polygoni, 857
Ramularia rufomaculans, 886
Uromyces polygoni, 901

POLYGONUM CILINODE
Ramularia rufomaculans, 886
Septoria polygonorum, 871

POLYGONUM CONVOLVULUS
Puccinia polygoni-amphibii, 907
Septoria polygonorum, 871

POLYGONUM ERECTUM
Cercospora avicularis, 891
Uromyces polygoni, 901

POLYGONUM HYDROPIPER
Cercospora hydropiperis, 891
Septoria polygonorum, 871

POLYGONUM HYDROPIPEROIDES
Puccinia polygoni-amphibii, 907

POLYGONUM MUHLENBERGII
Ramularia rufomaculans, 886

POLYGONUM ORIENTALE
Septoria polygonorum, 871

POLYGONUM PENNSYLVANICUM
Ustilago utriculosa, 897

POLYGONUM SAGITTATUM
Sphacelotheca hydropiperis, 897

POLYGONUM SCANDENS
Peronospora polygoni, 851

POLYGONUM VIRGINIANUM
Puccinia polygoni-amphibii, 907

POLYGONUM
Septoria polygonorum, 871

POLYMNIA CANADENSIS
Aecidium compositarum, 916
Septoria polymniae, 877

POLYPORUS
Hypocrea aurantiaca, 860
Hypomyces frondosus, 860
Hypomyces aurantius, 860

PONTEDERIA CORDATA
Cercospora pontederiae, 890

POPULUS ALBA
Marssonina castagnei, 881

POPULUS BALSAMIFERA
Septoria musiva, 870

POPULUS CANDICANS
Marssonina castagnei, 881

POPULUS DELTOIDES
Marssonina castagnei, 881
Melampsora medusae, 913
Septoria musiva, 870

POPULUS GRANDIDENTATA
Fusicladum radiosum, 889
Marssonina castagnei, 881
Melampsora medusae, 913

POPULUS TREMULOIDES
Fusicladium radiosum, 889
Marssonina castagnei, 881
Melampsora medusae, 913
Sclerotium bifrons, 917
Septoria musiva, 870
Taphrina johansonii, 864

POPULUS SPP. VARII
Uncinula salicis, 855

PORTULACA OLERACEA
Albugo portulacae, 849

POTAMOGETON
Doassansia martianoffiana, 899

POTENTILLA ANSERINA
Ramularia arvensis, 886

POTENTILLA ARGUTA
Marssonina potentillae, 882
Taphrina potentillae, 864

POTENTILLA CANADENSIS
Phragmidium potentillae-canadensis, 912

POTENTILLA FRUTICOSA
Phragmidium andersoni, 912

POTENTILLA MONSPELIENSIS
Gloeosporium fragariae, 880
Mollisia dehnii, 863
Peronospora potentillae, 852
Ramularia arvensis, 886

POTENTILLA PALUSTRIS
Cercospora comari, 892
Marssonina potentillae, 882
Septogloeum potentillae,882
Sphaerotheca humuli, 855

POTENTILLAE TRIDENTATA
Pucciniastrum potentillae, 914

PRENANTHES ALBA
Puccinia patruelis, 906
Puccinia orbicula, 911
Septoria nabali, 878
Sphaerotheca humuli fuliginea, 855
Synchytrium aureum, 848

PROSERPINACA PALUSTRIS
Puccinia proserpinacae, 909

PRUNELLA VULGARIS
Ramularia brunellae, 887
Septoria brunellae, 875
Sphaerotheca humuli fuliginea, 855

PRUNUS AMERICANA
Monilia fructigena, 884
Plowrightia morbosa, 862
Podosphaera oxyacanthae, 854
Puccinia pruni-spinosae, 908

PRUNUS NIGRA
Phyllostica prunicola, 866

PRUNUS PENNSYLVANICA
Cylindrosporium padi, 883
Plowrightia morbosa, 862
Podosphaera oxyacanthae, 854
Puccinia pruni-spinosae, 908

PRUNUS PERSICA
Exoascus deformans, 864

PRUNUS PUMILA
Podosphaera oxyacanthae, 854

PRUNUS SEROTINA
Cercospora circumscissa, 892
Cylindrosporium padi, 883
Monilia seaveri, 884
Phyllosticta prunicola, 866
Phyllosticta serotina, 866
Plowrightia morbosa, 862
Puccinia pruni-spinosae, 908

PRUNUS VIRGINIANA
Cylindrosporium padi, 883
Exoascus cerasi, 864
Monilia angustior, 884
Phyllosticta destruens, 866
Plowrightia morbosa, 862
Podosphaera oxyacanthae, 854
Puccinia pruni-spinosae, 908

PRUNUS
Cylindrosporium padi, 883
Exoascus pruni, 864
Podosphaera oxyacanthae, 854

PSEDERA
Cercospora ampelopsidis, 893
Phyllosticta labruscae, 866
Plasmopara viticola, 851
Septogloeum ampelopsidis, 882
Uncinula necator, 855

PTELEA TRIFOLIATA
Septoria pteleae, 873

PTERIS AQUILINA
Fusidium pteridis, 884
Marssonina necans, 881
Phyllachora pteridis, 861
Septoria aquilina, 869

PYCNANTHEMUM VIRGINIANUM
Puccinia menthae, 909

PYROLA AMERICANA
Pucciniastrum pyrolae, 914
Ovularia pyrolae, 884

PYROLA ELLIPTICA
Melampsoropsis pyrolae, 913
Ovularia pyrolae, 884
Pucciniastrum pyrolae, 914

PYROLA SECUNDA
Melampsoropsis pyrolae, 913
Pucciniastrum pyrolae, 914

PYRUS ARBUTIFOLIA
Cercospora pyri, 892

PYRUS CORONARIA
Cercosporella pyrina, 888
Fusicladium dendriticum, 889
Gymnosporangium juniperi-virginianae, 912
Marssonina coronaria, 881
Phyllosticta pyrina, 866
Podosphaera oxyacanthae, 854

PYRUS IOENSIS
Gymnosporangium juniperi-virginianae, 912

PYRUS MALUS
Fusicladium dentriticum, 889
Gloeosporium fructigenum. 880
Gymnosporangium juniperi-virginianae, 912
Phyllosticta pyrina, 866
Podosphaera leucotricha, 854

PYRUS MELANOCARPA
Cercospora pyri, 892
Gymnosporangium davisii, 911

PYRUS PRUNIFOLIA
Fusicladium dendriticum, 889

PYRUS AMERICANA
Entomosporium maculatum domesticum, 879
Gymnosporangium cornutum, 911

QUERCUS ALBA

Cronatrium quercus, 915
Fumago vagans, 895
Gloeosporium nervisequum, 880
Leptothyrium dryinum, 879
Marssonina martini, 881
Microsphaera alni, 856
Phyllosticta phomiformis, 865
Phyllosticta quercus, 865

QUERCUS COCCINEA

Taphrina coerulescens, 864

QUERCUS ELLIPSOIDALIS

Microsphaera alni, 856

QUERCUS MACROCARPA

Gloeosporium nervisequum, 880
Marssonina martini, 881
Microsphaera alni, 856
Phyllosticta quercus, 865

QUERCUS RUBRA

Gloeosporium nervisequum, 880
Leptothyrium dryinum, 879
Marssonina martini, 881
Microsphaera alni, 856
——— extensa, 856
Taphrina coerulescens, 864

QUERCUS VELUTINA

Cronartium quercus, 915
Gloeosporium septorioides, 880

QUERCUS

Ascochyta quercus, 868
Phyllactinia corylea, 858

RADICULA ARMORACIA

Cercospora armoraciae, 891
Phyllosticta decidua, 867
Ramularia armoraciae, 886

RADICULA PALUSTRIS

Albugo candida, 849
Cercospora nasturtii, 891
Peronospora parasitica, 852

RANUNCULUS ABORTIVUS
Ascochyta (?) infuscans, 868
Erysiphe polygoni, 857
Puccinia catoniae, 903
Septocylindrium ranunculi, 885

RANUNCULUS ACRIS
Didymaria didyma, 885
Erysiphe polygoni, 857

RANUNCULUS DELPHINIFOLIUS
Doassansia ranunculina, 900
Erysiphe polygoni, 857

RANUNCULUS FASCICULARIS
Didymaria didyma, 885
Peronospora ficariae, 852

RANUNCULUS PENNSYLVANICUS
Didymaria didyma, 885
Entyloma ranunculi, 898
Peronospora ficariae, 852
Pseudopeziza singularia, 863

RANUNCULUS RECURVATUS
Didymaria didyma, 885
Synchythium aureum, 848

RANUNCULUS SCELERATUS
Pseudopeziza singularia, 863

RANUNCULUS SEPTENTRIONALIS
Didymaria didyma, 885
Entyloma microsporum, 898
Peronospora ficariae, 852

RAPHANUS CAUDATUS
Albugo candida, 849

RAPHANUS SATIVUS
Albugo candida, 849
Peronospora parasitica, 852

RHAMNUS ALNIFOLIA
Cercospora rhamni, 892
Puccinia coronata, 904

RHAMNUS CATHARTICA
Cercospora rhamni, 892
Puccinia coronata, 904

RHEUM RHÀPONTICUM
Ascochyta rhei, 868

RHUS GLABRA
Cladosporium aromaticum, 889
Septoria rhoina, 873
Sphaerotheca humuli, 855

RHUS TOXICODEDRON
Uromyces toxicodendri, 902

RHUS TYPHINA
Septoria rhoina, 873
Sphaerotheca humuli, 855

RIBES AMERICANUM
Gloeosporium ribis, 880
Puccinia albiperidia, 906
Septoria ribis, 872
Sphaerotheca mors-uvae, 854

RIBES CYNOSBATI
Plasmopara ribicola, 850
Puccinia albiperidia, 906
Septoria ribis, 872
Sphaerotheca mors-uvae, 854

RIBES GRACILE
Puccinia albiperidia, 906

RIBES LACUSTRE
Septoria ribis, 872

RIBES ODORATUM
Septoria aurea, 872

RIBES OXYACANTHOIDES
Puccinia albiperidia, 906
Plasmopara ribicola, 850

RIBES PROSTRATUM
Cylindrosporium ribis, 883
Gloeosporium ribis, 880
Plasmopara ribicola, 850
Puccinia albiperidia, 906
Puccinia ribis, 908
Septoria ribis, 872

RIBES TRISTE
Cylindrosporium ribis, 883
Gloeosporium ribis, 880
Plasmopara ribicola, 850
Puccinia ribis, 908

RIBES VULGARE
Cylindrosporium ribis, 883
Gloeosporium ribis, 880
Septoria ribis, 872

RIBES
Cylindrosporium ribis, 883
Gloeosporium ribis, 880
Septoria grossulariae, 872
——— ribis, 872

ROSA BLANDA
Actinonema rosae, 869
Phragmidium disciflorum, 912
——— speciosum, 912

ROSA CAROLINA
Cercospora rosaecola, 892
Phragmidium disciflorum, 912

ROSA "PARVIFLORA"
Phragmidium speciosum, 912
——— disciflorum, 912

ROSA RUBIGINOSA
Actinonema rosae, 869

ROSA RUGOSA
Phragmidium speciosum, 912

ROSA WOODSII
Phragmidium disciflorum, 912

ROSA
Phragmidium disciflorum, 912
——— speciosum, 912
Sphaerotheca humuli, 855

RUBUS ALLEGHENIENSIS
Gymnoconia peckiana, 911
Kuehneola uredinis, 913
Septoria rubi, 872

RUBUS CANADENSIS
Gymnoconia peckiana, 911
Kuehneola uredinis, 913
Peronospora rubi, 852

RUBUS HISPIDUS
Kuehneola uredinis, 913
Septoria rubi, 872

RUBUS IDAEUS ACULEATISSIMUS
Asterina rubicola, 862
Cylindrosporium rubi, 883
Graphium gracile, 895
Gymnoconia peckiana, 911
Phragmidium imitans, 912
Pucciniastrum arcticum americanum, 914
Septoria rubi, 872
Sphaerotheca humuli, 855

RUBUS OCCIDENTALIS
Gymnoconia peckiana, 911
Phragmidium imitans, 912
Pucciniastrum arcticum americanum, 914
Septoria rubi, 872

RUBUS PARVIFLORUS
Phragmidium occidentale, 912
Septoria rubi, 872
Sphaerotheca humuli, 855

RUBUS TRIFLORUS
Gymnoconia peckiana, 911
Pucciniastrum arcticum americanum, 914
Sphaerotheca humuli, 855

RUBUS VILLOSUS
Kuehneola uredinis, 913

RUBUS
Gloeosporium venetum, 880

RUDBECKIA HIRTA
Septoria rudbeckiae, 877

RUDBECKIA LACINIATA
Aecidum compositarum, 916
Phyllosticta rudbeckiae, 868
Plasmopara halstedii, 851
Ramularia rudbeckiae, 888
Septoria rudbeckiae, 877
Uromyces rudbeckiae, 902

RUMEX ALTISSIMUS
Septoria rumicis, 871

RUMEX BRITTANICA
Puccinia ornata, 907

RUMEX CRISPUS
Ovularia obliqua, 884
Ramularia decipiens, 886

RUMEX OBTUSIFOLIUS
Ovularia obliqua, 884

RUMEX VERTICILLATUS
Ramularia pratensis, 886
Septoria rumicis, 871
Urophlyctis major, 848

RUMEX
Puccinia phragmitis, 904
Ramularia occidentalis, 885

SAGITTARIA HETEROPHYLLA
Cercospora sagittariae, 890
Doassansia sagittariae confluens, 899

SAGITTARIA LATIFOLIA
Burrillia pustulata, 899
Cercospora sagittariae, 890
Doassansia deformans, 900
———— intermedia, 900
———— opaca, 899
———— sagittariae, 899
Glocosporium confluens, 879

SALIX AMYGDALOIDES
Melampsora bigelowii, 913

SALIX CORDATA
Tuberculina davisiana, 895

SALIX DISCOLOR
Melampsora bigelowii,913
Ramularia rosea, 885

SALIX FRAGILIS
Gloeosporium salicis, 879
Melampsora bigelowii,913
Ramularia uredinis, 885

SALIX LONGIFOLIA
Gloeosporium salicis, 879
Ramularia uredinis, 885

SALIX LUCIDA
Marssonina apicalis, 881
Melampsora bigelowii,913
Phyllosticta apicalis, 865
Septoria salicina, 870

SALIX PEDICELLARIS
Septogloeum salicinum 882

SALIX PETIOLARIS
Ramularia rosea, 885

SALIX
Fumago vagans, 895
Melampsora bigelowii,913
Rhytisma salicinum, 863
Uncinula salicis, 855

SAMBUCUS CANADENSIS
Microsphaera grossulariae, 857
Puccinia bolleyana, 906
Septoria sambucina, 876

SAMBUCUS RACEMOSA
Microsphaera grossulariae, 857
Ramularia sambucina, 888

SANGUINARIA CANADENSIS
Cylindrosporium circinans, 883

SANICULA GREGARIA
Puccinia marylandica, 909
Urophlyctis pluriannulata, 848

SANICULA MARYLANDICA
Entyloma saniculae, 899
Puccinia marylandica, 909
Urophlyctis pluriannulata, 848

SAPROLEGNIA THURETII
Olpidiopsis saprolegniae, 848

SATUREJA VULGARIS
Puccinia menthae, 909

SAXIFRAGA PENNSYLVANICA
Puccinia curtipes, 908
Septoria albicans, 872

SCIARA
Empusa sciarae, 849

SCIRPUS AMERICANUS
Puccinia obtecta, 905

SCIRPUS ATROVIRENS
Puccinia angustata, 906
Synchytrium scirpi, 848

SCIRPUS CYPERINUS
Puccinia angustata, 906

SCIRPUS FLUVIATILIS
Uromyces scirpi, 900

SCIRPUS LINEATUS
Puccinia angustata, 906

SCIRPUS PEDICELLATUS
Puccinia angustata, 906

SCIRPUS VALIDUS
Puccinia obtecta, 905

SCROPHULARIA MARYLANDICA
Peronospora sordida, 853
Septoria scrophulariae, 875

SCUTELLARIA GALERICULATA
Erysiphe cichoracearum, 858
Septoria scutellariae, 875

SCUTELLARIA LATERIFLORA
Erysiphe cichoracearum, 858
Phyllosticta decidua, 867
Septoria scutellariae, 875

SCUTELLARIA PARVULA
Erysiphe cichoracearum, 858

SCUTELLARIA VERSICOLOR
Septoria scutellariae, 875

SECALE CEREALE
Claviceps purpurea, 860
Puccinia graminis, 905
Urocystis occulta, 898

SENECIO AUREUS
Albugo tragopogonis, 850
Entyloma compositarum, 899
Puccinia recedens, 911

SETARIA GLAUCA
Ustilago neglecta, 896

SETARIA ITALICA
Piricularia grisea, 888
Sclerospora graminicola, 853

SETARIA VIRIDIS
Sclerospora graminicola, 853
Septoria graminum, 869

SHEPHERDIA CANADENSIS
Puccinia apocrypta, 904

SICYOS ANGULATUS
Plasmopara australis, 851

SILENE ANTIRRHINA
Ascochyta silenes, 868
Septoria dimera, 871

SILENE NOCTIFLORA
Phyllosticta nebulosa, 865
Septoria noctiflora, 871

SILENE STELLATA
Marssonina delastrei, 881
Septoria silenicola, 871

SILPHIUM INTEGRIFOLIUM
Ascochyta treleasei, 869
Entyloma compositarum, 899
Plasmopara halstedii, 851
Puccinia silphii, 910
Septoria silphii, 877
Uromyces junci-tenuis, 901

SILPHIUM LACINIATUM
Puccinia silphii, 910

SILPHIUM PERFOLIATUM
Plasmopara halstedii, 851
Puccinia silphii, 910
Septoria silphii, 877
Uromyces junci-tenuis, 901

SILPHIUM TEREBINTHINACEUM
Plasmopara halstedii, 851
Uromyces junci-tenuis, 901

SILPHIUM TRIFOLIATUM
Plasmopara halstedii, 851

SISYMBRIUM OFFICINALE
Albugo candida, 849

SIUM CICUTAEFOLIUM
Cercospora sii, 893
Septoria sii, 874
Uromyces scirpi, 900

SMILACINA RACEMOSA
Aecidium smilacinae, 915
Phyllosticta cruenta pallidior, 865
Septoria smilacinae, 870

SMILACINA STELLATA
Phyllosticta cruenta pallidior, 865

SMILAX ECIRRHATA
Ramularia subrufa, 885

SMILAX HERBACEA
Stagonospora smilacis, 869

SMILAX HISPIDA
Cercospora mississippiensis, 890
Stagonospora smilacis, 869

SOLANUM MELONGENUM
Phyllosticta hortorum, 867

SOLANUM TUBEROSUM
Phytophthora infestans, 850

SOLIDAGO ARGUTA
Septoria solidaginicola, 876

SOLIDAGO CAESIA
Septoria solidaginicola, 876

SOLIDAGO CANADENSIS
Erysiphe cichoracearum, 858
Septoria davisii, 876
solidaginicola, 876

SOLIDAGO LATIFOLIA
Cercospora stomatica, 894
Ramularia virgaureae, 888
Septoria atropurea, 877

SOLIDAGO RIDDELLII
Plasmopara halstedii, 851

SOLIDAGO RIGIDA
Basidiophora entospora, 853
Phyllosticta simillispora, 867

SOLIDAGO SEROTINA
Cerosporella reticulata, 888
Ramularia serotina, 888
Septoria davisii, 876
——— solidaginicola, 876

SOLIDAGO ULMIFOLIA
Ramularia virgaureae, 888

SOLIDAGO
Coleosporium solidaginis, 915
Puccinia caricis-solidaginis, 906
Puccinia tracyi, 910
Rhytisma solidaginis, 864
Septoria intermedia, 877

SORGHUM VULGARE
Sphacelotheca sorghi, 897

SPARGANIUM EURYCARPUM
Cylindrosporium sparganii, 882
Uromyces sparganii, 900

SPARTINA MICHAUXIANA
Ascochyta spartinae, 868
Puccinia peridermiospora, 904
Puccinia seymouriana, 904
Uromyces acuminatus, 900

SPECULARIA PERFOLIATA
Septoria speculariae, 876

SPERGULA ARVENSIS
Peronospora obovata, 852

SPHENOPHOLIS PALLENS
Puccinia catoniae, 903
Sclerotium rhizodes, 917

SPIDERS
Isaria arachnophila, 895

SPIRAEA SALICIFOLIA
Cercospora rubigo, 892
Podosphaera oxyacanthae, 854
Septoria salicifoliae, 872

SPIRAEA TOMENTOSA
Podosphaera oxyacanthae, 854
Septoria salicifoliae, 872

SPIRODELA POLYRHIZA
Tracya lemnae, 900

SPOROBOLUS ASPER
Puccinia sydowiana, 903

STACHYS PALUSTRIS
Phyllosticta decidua, 867

STACHYS TENUIFOLIA ASPERA
Erysiphe galeopsidis, 857
Phyllosticta decidua, 867
Septoria stachydis, 875

STAPHYLEA TRIFOLIA
Ovularia isarioides, 884

STEIRONEMA CILIATUM
Phyllosticta decidua, 867
Puccinia dayi, 909
Ramularia lysimachiae, 887
Septoria conspicua, 874

STEIRONEMA LANCEOLATUM
Puccinia dayi, 909
Septoria conspicua, 874
Uromyces acuminatus, 900

STEIRONEMA QUADRIFLORUM
Septoria conspicua, 874

STELLARIA LONGIFOLIA
Septoria stellariae, 871

STELLARIA MEDIA
Septoria stellariae, 871

STIPA SPARTEA
Puccinia stipae, 903

STREPTOPUS ROSEUS
Tuburcinia clintoniae, 898

SYMPLOCARPUS FOETIDUS
Cercospora symplocarpi, 890
Septoria spiculosa, 870

SYRINGA VULGARIS
Microsphaera alni, 856
Phyllosticta syringae, 867

TAENIDIA INTEGERRIMA
Cercospora platyspora, 893
Puccinia bullata, 909

TARAXACUM OFFICINALE
Puccinia taraxaci, 911
Ramularia taraxaci, 888
Sphaerotheca humuli fuliginea, 855

TEUCRIUM CANADENSE
Cercospora racemosa, 894
Erysiphe cichoracearum, 858
Phyllosticta deciduа, 867

THALICTRUM DASYCARPUM
Aecidium thalictri, 915
Cylindrosporium thalictri, 882
Entyloma thalictri, 898
Erysiphe polygoni, 857
Gloeosporium thalictri, 880
Phytophthora thalictri, 850
Puccinia thalictri, 907

THALICTRUM DIOICUM
Aecidium thalictri, 915
Ascochyta clematidina thalictri, 868
Cylindrosporium thalictri, 882
Entyloma thalictri, 898
Puccinia thalictri, 907

THALICTRUM REVOLUTUM
Phytophthora thalictri, 850

THUYA OCCIDENTALIS
Keithia thujina, 864

TILIA AMERICANA
Cercospora microsora, 893
Uncinula clintonii, 856

TRADESCANTIA REFLEXA
Cylindrosporium tradescantiae, 882

TRAGOPOGON PORRIFOLIUS
Albugo tragopogonis, 850

TRAGOPOGON PRATENSIS
Albugo tragopogonis, 850

TRIENTALIS AMERICANA
Septoria increscens, 874

TRIFOLIUM HYBRIDUM
Cercospora zebrina, 892
Uromyces trifolii-repentis, 901

TRIFOLIUM INCARNATUM
Uromyces trifolii-repentis, 901

TRIFOLIUM PRATENSE
Cercospora zebrina, 892
Phyllachora trifolii, 862
Polythrincium trifolii, 889
Pseudopeziza trifolii, 863
Uromyces trifolii, 901

TRIFOLIUM REPENS
Cercospora zebrina, 892
Phyllachora trifolii, 862
Polythrincium trifolii, 889
Uromyces oblongus, 901
———— trifolii-repentis, 901

TRILLIUM CERNUUM
Phyllosticta trillii, 865
Septoria trillii, 870

TRILLIUM DECLINATUM
Septoria trillii, 870

TRILLIUM GRANDIFLORUM
Septoria trillii, 870

TRILLIUM RECURVATUM
Septoria trillii, 870

TRIOSTEUM PERFOLIATUM
Cladosporium triostei, 889

TRITICUM VULGARE
Claviceps purpurea, 860
Puccinia graminis, 905
———— rubigo-vera, 905
Tilletia foetens, 898
———— tritici, 898
Ustilago tritici, 897

TSUGA CANADENSIS
Caeoma abietis-canadensis, 915
Peridermium sp. indet., 916

TYPHA LATIFOLIA
Phyllosticta renouana, 865

ULMUS AMERICANA
Phleospora ulmi, 878
Dothidella ulmea, 862
Uncinula macrospora, 856

UREDINEAE
Darluca filum, 869
Tuberculina persicina, 895

URTICA GRACILIS
Peronospora urticae, 851
Puccinia caricis, 906
Ramularia urticae, 885

UVULARIA GRANDIFLORA
Phyllosticta cruenta discincta, 865

VACCINIUM CANADENSE
Exobasidium vaccinii, 917
Microsphaera alni vaccinii, 856
Pucciniastrum myrtilli, 914
Ramularia effusa, 887

VACCINIUM MACROCARPON
Exobasidium vaccinii, 917
Ramularia multiplex, 887

VACCINIUM PENNSYLVANICUM
Exobasidium vaccinii, 917
Microsphaera alni vaccinii, 856
Pucciniastrum myrtilli, 914

VERBASCUM THAPSUS
Ramularia variabilis, 887

VERBENA HASTATA
Septoria verbenae, 874

VERBENA URTICAEFOLIA
Erysiphe cichoracearum, 858
Septoria verbenae, 874

VERNONIA FASCICULATA
Cercospora vernoniae, 894
Puccinia vernoniae, 910

VERNONIA NOVEBORACENSIS
Aecidium compositarum, 916
Ascochyta treleasei, 869

VERONICA ANAGALLIS-AQUATICA
Peronospora grisea, 853

VERONICA ARVENSIS
Peronospora grisea, 853
Septoria veronicae, 875

VERONICA PEREGRINA
Entyloma linariae veronicae, 899
Peronospora grisea, 853
Ramularia veronicae, 887

VERONICA SERPYLLIFOLIA
Sphaerotheca humuli fuliginea, 855

VERONICA VIRGINICA
Phyllosticta decidua, 867
Puccinia veronicarum, 910
Septoria veronicae, 875
Sphaerotheca humuli fuliginea, 855

VIBURNUM ACERIFOLIUM
Microsphaera alni, 856

VIBURNUM LENTAGO
Cercospora varia, 894
Colecsporium viburni, 915
Ramularia viburni, 888
Microsphaera alni, 856

VIBURNUM OPULUS
Cercospora varia, 894

VIBURNUM PUBESCENS
Phyllosticta tineola, 867
Microsphaera alni, 856

VICIA AMERICANA
Ascochyta pisi, 868
Gloeosporium davisii, 881
Gloeosporium everhartii, 880
Peronospora viciae, 852
Septoria astragali, 873
Uromyces albus, 902
Uromyces fabae, 902

VICIA CAROLINIANA
Cercospora viciae, 892

VICIA VILLOSA
Ascochyta pisi, 868

VIOLA PUBESCENS
Sclerotium nervale, 917
Septoria violae, 873
Synchytrium aureum, 848

VIOLA
Cercospora granuliformis, 893
Marssonina violae, 882
Phyllosticta violae, 866
Puccinia violae, 908
Septoria hyalina, 873
———— violae, 873

VITIS LABRUSCA
Plasmopara viticola, 851

VITIS VULPINA
Ascochyta ampelina, 869
Cercospora viticola, 893
Phyllosticta labruscae, 866
Phyllosticta spermoides, 866
Plasmopara viticola, 851

VITIS
Phoma uvicola, 868
Phyllosticta labruscae, 866
Plasmopara viticola, 851
Uncinula necator, 857

WALDSTEINIA FRAGARIOIDES
Puccinia waldsteiniae, 908
Ramularia waldsteiniae, 886

XANTHIUM
Erysiphe cichoracearum, 858
Puccinia cyperi, 905
——— xanthii, 910
Septoria xanthii, 877

ZANTHOXYLUM AMERICANUM
Phyllactinia corylea, 859
Septoria pachyspora, 873

ZEA MAYS
Puccinia sorghi, 903
Ustilago zeae, 896

ZIZANIA PALUSTRIS
Claviceps, 860
Entyloma lineatum, 898
Sclerotium zizaniae, 917

ZIZIA AUREA
Cercospora ziziae, 893
Urophlyctis pluriannulata, 848

ZIZIA CORDATA
Cylindrosporium ziziae, 883

ZYGADENUS CHLORANTHUS
Puccinia zygadeni, 907

APPENDIX.

Cercospora rubigo Cke. & Hark (?)

Of the fungus doubtfully referred to this species the following notes were made: Spots angular-suborbicular, limited by the veins, reddish brown, 5–8 mm. in diameter; hyphae hypophyllous, fuligineous, assurgent to erect, often arising as branches from a superficial creeping mycelium, sometimes branched, usually crooked and denticulate or nodulose 25—60 x 3μ; conidia hyaline, attenuate from a point about 10μ above the base where the diameter of the conidium is greatest, straight or more often somewhat curved, pluriguttulate, 50–125 x 3–4μ. On *Spiraea salicifolia*, Spooner, Wis., July 20th, 1911.

Cylindrosporium thalictri (E. & E.) (*C. ranunculi* (Bon.) Sacc. forma is borne on suborbicular spots which are first red on the upper surface becoming pale olive and finally sooty with the developing hyphae and conidia.

Cylindrosporium thalictri (E. & E.) *C. ranunculi* (Bon.) Sacc. forma *thalictri* E. & E. Journ. Mycol. *3*, 130 (1887). This seems to be distinct from the form on *Ranunculus* there being no evidence that it is a conidial state of *Entyloma*. The stroma from which the sporules spring is often spherical and these masses are often gregarious and crowded. *Cylindrosporium clematidis* E. & E. with different spots and epiphyllous acervuli can hardly be the same. I have not seen *Septoria thalictri* E. & E. but judge from the description that it may not be distinct from this. Journ. Mycol. *4*: 49, (1888).

Entomosporium maculatum Lev. var. *domesticum* Sacc. The specimens that I have referred to this variety were collected in Burnett Co. on mountain ash. The sporules are mostly 16–20 x 8–9μ. One collection on *Amelanchier spicata* has sporules of about the same dimensions. Specimens on quinces from the Madison market, obtained by Mr. A. G. Johnson, show sporules 20—23 x 7—10μ. It is doubtful if the variation in size is of any taxonomic significance.

Gloeosporium fragariae (Lib.) Mont. My measurements of the sporules of the fungus referred to this species range from 12–24 x 4–5μ. It was collected at Spooner.

Marssonina coronaria (Ell. & Davis) This is *Asoochyta coronaria* Ell. & Davis, 3rd supplementary list No. 580 and also Marsonia coronariae Sacc. & Dearn. (Ann. Mycol. *10*, *3*, 313.)

Phragmidium disciflorum (Tode) James. The form on *Rosa blanda* is *Ph. americanum* Diet. while that on Rosa woodsii (?) and R. pratincola (?) is *Ph. rosae-arkansanae* Diet. Wisconsin is included in the range of Ph. *rosae setigerae* Diet. which occurs on *Rosa setigera*

and *R. carolina*, by Arthur (Torreya *9*, 26) Rust on foreign roses in Wisconsin as far as examined appears to be *Ph. americanum* Diet. or or Ph. disciflorum.

Phyllosticta caricis (Fckl.) Sacc. The specimens which I have referred to this species bear fusoid-oblong sporules 10– 13 x 2½–3μ.

Phyllosticta cruenta discincta (Davis). Specimens from Blue Mounds and Madison show sporules about 16 x 6μ. *Ph. cruenta* is referred to *Macrophoma* by Ferraris (Ann. Mycol. *10*, *3*, 288). This would make a generic separation of the two forms listed although the globose sporules of var. *pallidior* are equal in content to the longer and narrower sporules of var. *discincta*.

Phyllosticta decidua E. & K. The form on horse radish which I have referred to this species appears to be *Ph. orbicula* E. & E. Some of the forms that I have referred to this species cause angular alutaceous spots. Perhaps they should all be referred to *Phyllosticta anceps* Sacc.

Protomyces andinus Pat. Judging from the description of this species, the type of which was collected in Chili by Spegazzini, *P. gravidus* is not distinct. It is doubtful however, if the form on *Ambrosia* with larger sporangia and usually forming larger galls is conspecific.

Puccinia pygmaea Erikss. The specimens of rust on *Calamagrostis* that I have collected in Wisconsin and that have been referred to *P. striatula* Pk. are in part of this species and in part *P. coronata* Corda. *P. striatula* Pk. apparently does not occur in Wisconsin.

Ramularia modesta Sacc. I have not seen authentic specimens of this species. The specimens which I have referred here were collected at Spooner.

Ramularia nemopanthis C. & P. Specimens collected in Burnett Co. have branching hyphae and catenulate conidia 7–13 x 3–4μ. Apparently a vigorous state.

Sclerotium rhizodes Awd. The list of hosts of this species, excepting *Calamagrostis canadensis*, is taken from Research Bulletin No. 18, of the University of Wisconsin, Agricultural Experiment Station: A. B. Stout; June 1911.

Septogloeum salicinum (Pk). Sacc. In this collection the sporules are mostly produced into long slender tips, sometimes almost bristle like.

Septoria dimera Sacc. This is the fungus on *Silene antirrhina* that was referred to *Septoria saponariae* (DC.) in the supplementary list. It occurs on stems as well as leaves and the sporules range mostly from 20–40 x 3–4μ. usually with one septum.

Septoria rumicis Ellis. This is antedated by *S. rumicis* Trail from which, judging from the description of the latter, it may not be distinct. In that case Trail should be cited as the author.

Septoria salicifoliae (Trel.) E. & E. On *Spiraea tomentosa* the fungus is epiphyllous and the sporules are borns in acervuli and much

resemble those of *Septogloeum salicinum* (Pk.) Sacc. collected at the same time and place.

Septoria sambucina Pk. The form on *Lonicera* is probably S. *Xylostei* Sacc. & Wint. Sporules 50–75 x 2μ.

Septoria umbelliferarum Kalchb. There is no apparent reason why the specimens on *Cicuta* and *Oxypolis* should have been referred to this species in the supplementary list except that I did not know what to do with them and the inclusive appearance of the specific name. Each host is represented by a single specimen and they do not resemble each other.

Uromyces euphorbiae C. & P. This includes *U. proeminens* (DC.) Lev. on *E. polygonifolia* and *E. Preslii* and *U. euphorbicola* (B. & C.) Tranz. on E. *maculata* which are perhaps better considered as races.

Puccinia monoica (Pk.) Arth. Dr. Arthur informs me that the Aecidium on *Arabis lyrata* was collected at Trempealeau, Wis., by J. M. Holzinger in 1890.

Phyllosticta simillispora Ell. & Davis. What appears to be this fungus has been described by Saccardo under the name *Leptothyrium tumidulum* n. sp. (Ann. Myc. *10*, *3*, 312.)

These notes are to be continued in a subsequent publication.

I have followed the Sydows in *Monographia Uredinearum* in using the specific name *trifolii* to designate the *Uromyces* that occurs on *Trifolium pratense*. Kern (Phytopathology I: *1*, 3 *et seq.*) and Arthur (N. A. Flora 7: 255) apply it to the form on *Trifolium repens* and use the specific name *fallens* for the rust on *T. pratense*. The proper disposition of the form on *Trifolium hybridum* is not clear. Morphologically it resembles the form on *T. repens* from which it differs in the absence of an aecial stage as does that on *T. pratense*. Liro did not succeed in transferring the rust from *T. repens* to *T. hybridum* by inoculation.

Septoria parietariae Davis (4th suppl. list of paras. fungi of Wis. p. 871) is probably not different from *S. urticae* var. *parietariae* Sacc. (Syll. Fung. *16*: 971) of which I was not aware when the former name was proposed.

Peridermium balsameum Pk. has been shown by Fraser to be, in part at least, the aecial stage of *Uredinopsis*. Fraser also finds that *Caeoma abietis-canadensis* is connected with *Melampsora* on *Populus grandidentata*.

The "primary uredo" (*Uredo muelleri* Schroet.) occurs on the hosts of *Kuehneola uredinis* (Lk.) Arth. (*K. albida* (Kuehn) Magnus) in Wisconsin and might properly have been designated by the numeral "I" because of its aecial character. The same may be said of *Phragmidium potentillae-canadensis* Diet. which is placed in *Kuehneola* by Arthur.

NOTES ON PARASITIC FUNGI IN WISCONSIN.

BY

J. J. DAVIS.

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WITH THE COMPLIMENTS OF

THE AUTHOR

NOTES ON PARASITIC FUNGI IN WISCONSIN—I.

J. J. Davis.

These notes are intended to be supplementary to "A provisional List of Parasitic Fungi in Wisconsin" published in Transactions of the Wisconsin Academy of Sciences, Arts and Letters. Vol. XVII, pt. 2, pp. 846–984.

Plasmopara humuli Miyabe & Takahashi. This was collected on wild *Humulus Lupulus* growing along the river bank at Racine in 1909–10 since which time the station has not been visited. The following notes of this fungus were made at Racine: Spots small, angular at first, limited by the veinlets, brown-red or purplish above, below of a darker green than the leaf, giving the "water soaked" appearance. The spots are surrounded by an indeterminate yellowish discoloration especially early in the season, less marked as the leaves become firmer, and finally assume the lethal brown with the death of the tissues included. Conidiphores hypophyllous, grey, 175–325x5–6½μ with usually two lateral branches each of which is about equal in development to the terminal portion and 1–3 times branched, ultimate branchlets tapering, subacute; conidia fuligineous tinted, elliptical, somewhat acute at each end, furnished with an apical papilla of dehiscence, 20–33 x 12–17μ, usually about 26 x 15μ; oospores scattered in the leaves; oogonia irregularly thickened, brown, subglobose, 36–40μ long, oöspores filling the oögonia 30–33μ long.

Asterina plantaginis Ellis. This is referred to *Mycosphaerella* by Theissen *(Ann. Mycol. 10:2:196.* (Apr. 1912).

Asterina rubicola Ell. & Evht. This is described by Theissen in the same communication (p. 195) but no new combination is proposed.

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Gnomoniella fimbriata (Pers.) Sacc. This was inserted in the provisional list because of an immature specimen in the herbarium of the University of Wisconsin which is perhaps of this species. It was collected at Osceola by E. Sheldon in 1892.

Phyllosticta destruens Desm. In writing the provisional list I followed Ellis & Everhart *(North American Phyllostictas, 40)* in referring to this species specimens on *Prunus virginiana* and also on *Amelanchier.* The former has been described under the name *Phoma virginiana* Ell. & Hals. (Journ. Mycol. 4:8. (1888)) the latter as *Phyllosticta innumerabilis* Pk. (Bull. Torr. Bot. Club. 36:336 (1909)). Specimens on *Amelanchier* were distributed under the name *Phyllosticta destructens* Desm. in *Fungi Columbiani continued 1447.* I have seen no European specimens of *Ph. destruens* Desm. which is said to occur on *Celtis* as well as *Prunus* and to have epiphyllous pycnidia, but I infer that Mr. Ellis had good reason for using that name. Before the list was printed I removed *Amelanchier* as a host of *Phyllosticta destruens* Desm. with the intention of inserting *Ph. innumerabilis* Pk. an intention which I failed to carry out, so that *Amelanchier* as bearing the *Phyllosticta* appears only in the host index. Morphologically I see no distinction between the fungi on the two hosts.

In the provisional list of parasitic fungi in Wisconsin Patouillard is given as the author of the binominal *Protomyces andinus* as is done in the *Sylloge Fungorum.* An examination of Patouillard's paper however shows that it was published as *Protomyces andinus* Lagh. sp. nov. Lagerheim, not Spegazzini, collected the type material in Ecuador, not Chili.

Phyllosticta mulgedii Davis, a name that was proposed in the 4th supplementary list (No. 709), was omitted from the provisional list. The fungus has not been collected again and is probably one of the *Phomae* that have been described as occurring on the leaves of *Compositae.*

Phyllosticta desmodii Ell. & Evht. This was described *(Journ. Mycol. 5:* 146: 1889) from a single small collection in Walworth Co. Much better material has been collected at Madison on *Desmodium canescens.* The pycnidia are epiphyllous, brown, subspherical, 125–160μ in diameter; sporules oblong, often somewhat

narrower in the middle, ends rounded, conspicuously 2–4 guttulate, 6–12x3μ. The appearance of the sporules suggests that later they may become septate.

Phyllosticta cruenta (Fr.) Kickx. The reference of this species to *Macrophoma* as proposed by Ferraris *(Ann. Mycol. 10:3:288* (Jn. 1912)) would make a generic distinction between the two forms that were given as varieties in the provisional list because the globose sporules of *Ph. pallidior* Pk. are only about 10μ in length, although they equal in content the longer and narrower sporules of the type of *Ph. discincta.*

Ascochyta pisi Lib. has been shown by R. E. Stone to be a conidial form of *Mycosphaerella pinodes* (Berk. & Blox.) Niessl *(Ann. Mycol. 10*:564 *et seq.* (Dec. 1912). Also R. E. Vaughan, *Phytopathology 3*:71 [1913].

Actinonema rosae, (Lib.) Fr. Diedicke calls this *Marssonina rosae* (Lib.) Trail *(Ann. Mycol. 10*:146 (Apr. 1912)). F. A. Wolf has developed the ascosporous stage which he refers to the *Microthyriaceae* and makes the type of a new genus and calls it *Diplocarpon rosae* F. A. Wolf. *(Bot. Gaz. 54,* 231 (Sept. 1912)).

Septoria nubilosa Ell. & Evht. (Proc. Acad. Nat. Sci. Phil. 1891, p. 76) which was founded on Wisconsin material on *Helenium autumnale* has not been included in the Wisconsin lists because it is merely a form of *Septoria helenii* Ell. & Evht. in which the spots are not well developed. The type was collected on the north side of plants bearing typical *S. helenii* and was sent to the authors merely to show the variation.

Septoria ribis Desm. Some of the specimens that I have referred to this species are perhaps *S. grossulariae* var. *longispora* Ferraris *(Ann. Mycol. 10:291).* Typical *S. grossulariae* (Lib.) West. I have collected but once.

Septoria saccharina Ell. & Evht. Specimens from Price Co. bear sporules about 30x2½μ. The *Acer*—inhabiting fungi, having triseptate sporules borne in acervuli and varying in length from 20–70μ and in width from 1½–5μ seem to me to constitute a group the relation of the members of which can be determined by inoculation methods only. The form with short and thick sporules has been called *Ascochyta aceris* Lib. and later

Phleospora aceris (Lib.) Sacc. and with this have been included narrower spored forms but usually the latter have been referred to *Septoria*. Diedicke has recently referred the European forms with sporules 3μ or less in thickness to *Cylindrosporium*, recognizing three species. (*Ann. Mycol.* 10: 486 (Oct. 1912)). *Septoria saccharina* E. & E., however, while producing similar sporules develops pycnidia in definite arid spots but *Cylindrosporium saccharinum* Ell. & Ev. agrees with the form on *Acer rubrum* which was recorded in the "provisional list" under the name *Phleospora aceris* (Lib.) Sacc.

Septoria musiva Pk. The specimens of Septoria that have been collected on *Populus* in Wisconsin may be divided into groups as follows:

1. Spots subcircular to subangular, black becoming white and arid except the peripheral portion, 3–5 mm. in diameter; pycnidia epiphyllous, superficial-collapsing, hemispherical in section, about 100μ in diameter; sporules cylindrical, curved, obtuse, 3(2–4) septate, 25–60 x 2–3μ. On *Populus balsamifera.*

2. Similar to the above except that the central portion of the spot becomes alutaceous or cinereous instead of white and the pycnidia are more scattered and lie deeper. Also on *P. balsamifera.*

3. Spots subcircular to angular, limited by the veinlets, at first brown, becoming grey by the loosening of the cuticle, 1–3 mm. in diameter, becoming confluent into larger areas, ½–1 cm. in diameter; pycnidia innate, discharging on either surface but usually below, having a thin but distinct wall and a large opening, 70–100μ in diameter; sporules cylindrical, curved, obtuse, 3(2–4)–septate, 25–65 x 2–3μ. On *Populus deltoides.*

4. Spots roundish to irregular and angular, dark brown above becoming grey with age, light brown below, 2–5 mm. in diameter, often confluent; pycnidia hypophyllous, punctiform; sporules cylindrical, curved, obtuse, 3–5 septate, 45–65 x 3μ. On *P. balsamifera.*

5. Spots angular, blackish brown above, paler below, becoming lighter and mottled with age, ½–1 cm. in diameter; pycnidia scattered, innate, thin walled; sporules filiform, narrowed to one end, 3–6 septate, 40–70x1½–2½μ. On *Populus tremuloides.*

In the provisional list all of these forms were included in *Septoria musiva* Pk., although group 5 may prove to be distinct, but

one can hardly decide that on morphological grounds without an abundance of material. I find this in Wisconsin only to the north and with few pycnidia. Much the best specimens that I have seen were collected at North Yakima, Wash. (Wis. Acad. Sci. Arts & Lett. *15*:778).

In Farlow's Host Index, *Populus balsamifera* is given as a host of *Septoria salicina* Pk. I presume that this refers to what I have called group 1. This form looks quite distinct but it merges into group 2 and that again into group 3 in a way that makes it difficult to draw a line of separation, while the characters of the sporules are identical. *Septoria salicina* Pk. differs in its uniseptate sporules. Of *Septoria populi* Desm., which has uniseptate sporules, I have seen no American specimens. *Fungi Columbiani 2873,* issued under this name seems to be the same as *2872* which is labeled *Septoria musiva* Pk. On neither have I found a *Septoria.* I may mention that *F. Col. 1587* on *Populus tremuloides* collected by J. B. Ellis at Newfield, N. J. and issued as *S. musiva* Pk. bears *Marssonina rhabdospora* (E. & E.) Magn. at least in the two copies which I have seen. *F. Col. 3486* on *Populus balsamifera* collected at St. Johnsbury, Vt. by W. P. Carr and issued as *Septoria populi* Desm. is of the form with black bordered alutaceous spots that I have placed in group 2. *Pacific Slope Fungi 1723* on *Populus Fremonti* collected in California by Copeland and issued by Baker as *Septoria populi* Desm. is somewhat intermediate between groups 2 and 3. *Fungi Columbiani 1257* on *Populus angustifolia* collected at Golden, Colorado, by Bethel, and issued as *Septoria populi* Desm. has subcircular spots of a yellowish white or sordid white color with an irregular grey-brown border 2–4 mm. in diameter; the pycnidia are hypophyllous, broad and collapsing; the sporules continuous 23–35 x 3½–4μ. While this does not correspond with *S. populi* Desm. it is different from any *Septoria* on *Populus* that I have seen and judging from the single specimen may prove to be distinct. *Cylindrosporium oculatum* Ell. & Evht. on *Populus deltoides* (Put-in-Bay, Ohio) has hemispheric-superficial pycnidia and obtuse sporules 30–50 x 3μ becoming 3 or more septate. This forms circular grey to sordid spots about ½ cm. in diameter with a narrow dark border. I would include it in *Septoria musiva* Pk. as representing forms 1 and 2 on *Populus deltoides.* Specimens

on this host collected at Ithaca, N. Y., by Higgins (com. Bartholomew) bear both this and form 3 on the same leaves.

After this was written a collection was made from the examination of which the following characters were noted: spots angular-suborbicular, at first brown with a narrow darker margin, then grey and finally mottled with small angular cream colored areas, sometimes confluent, 2–3 mm. in diameter; pycnidia mostly hypophyllous and inconspicuous, 65–75μ in diameter; sporules, hyaline, filiform, acute, 3–6 septate, 38–60 x 2½–3½μ. On *Populus grandidentata*. Devils Lake, Wisconsin, Aug. 6, 1913.

In this connection a still more recent (Aug. 21, 1914) collection on *Populus deltoides* is of interest. *Phyllosticta populina* Sacc. is said to occur in association with *Septoria populi* Desm. in Europe. Having made a collection of the former at Prescott the associated *Septoria* was examined with some interest. The spots are orbicular, cinereous with a narrow dark margin and resemble those of form 2 except in the grey color which in the older spots changes to white. On some of the leaves are small angular, confluent spots like those of typical *Septoria musiva* Pk. Of the first mount from this material it was noted "sporules mostly 18–22 x 2–3μ, 1–2 septate with occasional longer ones up to 48μ and 3-septate"; of another mount "30–45 x 2–3μ, 2–3 septate". This seems to connect with the forms described above and suggests that there is a widely variable species of *Septoria* occurring on *Populus* in both America and Europe. *Septoria candida* (Fckl.?) Sacc. I have not seen, but the description indicates that it might readily fall in with the American forms.

Cercospora geranii Kell. & Sw. Of a specimen collected at Blue Mounds the following notes were made. Hyphae usually straight, slightly colored, often toothed, 25–75 x 6–7μ; conidia hyaline, cylindrical, usually more or less curved, obtuse, becoming pluriseptate, 100–165 x 4–5μ.

Cercospora subsanguinea Ell. & Evht. is sometimes devoid of color and the obtuse conidia sometimes divide in the middle. It appears to be more nearly a *Ramularia*.

Gloeosporium fragariae (Lib.) Mont. My notes of the measurements of the sporules of the fungus referred to this species range from 12–24 x 4–5μ. It was collected at Spooner.

Gloeosporium ribis (Lib.) Mont. & Desm. As it occurs in Wisconsin this usually has the characters of the forma *ribis nigri americana* Sacc. The sporules sometimes reach 30μ in length.

Gloeosporium tremuloides Ell. & Evht. 2nd suppl. list no. 526 was omitted from the provisional list because of the belief that the species was founded on imperfectly developed material of *Marssonina castagnei* (D. & M.) Magn. which occurs in atypical forms in Wisconsin. Oudemans proposed the variety *monilifera* in which the acervuli are amphigenous although more abundant above. In Wisconsin they are often hypophyllous only and the sporules are often but 12–15μ long. *Marssonina brunnea* (E. & E.) has been omitted, being considered, perhaps erroneously, a form of *M. castagnei.*

Ramularia plantaginis Ell. & Mart. In the description of this species the spots are said to be minute. Specimens on *Plantago Rugelii* collected at Madison in September have spots up to 3 cm. in diameter. Conidia appear also on the calyces.

Ramularia alismatis Fautrey. This was reported in the third supplementary list under the name *Ascochyta alismatis* (Oud.) Trail. Dr. R. A. Harper has kindly compared Wisconsin material with the type of *Ascochyta alismatis* Ell. & Evht. in the Ellis herbarium and finds them to be the same. The very short undifferentiated conidia-bearing hyphae makes this an atypical *Ramularia.* It is not unlikely that *Septoria alismatis* Oud. is of the same character. The spots usually have a slight eminence in the center as if a pycnidium lay beneath. (See Diedicke, *Ann. Mycol. 10*:479).

Ramularia uredinis (Voss) Sacc. This is the fungus recorded in the supplementary and 3rd suppl. lists no. 330 under the name *Fusarium uredinum* E. & E. The tufts are sometimes pink or even testaceous. My measurements of the conidia, which are in branched chains, are from 7–17x3–4μ.

Ustilago osmundae Pk. This has been collected on *Osmunda regalis* in Washburn and Burnett counties. I have not been able to follow the author of the species in his reference of it to *Mycosyrinx.* (New York State Museum; Report of the Botanist 1911, p. 43). When the fungus is present each frond arising from the rhizome bears the smut or else is sterile.

Ustilago lorentziana Thuem. which occurs at Madison on *Hordeum jubatum* and which was recorded in the 4th supplementary list seems to have been omitted from the provisional list.

Entyloma linariae Schroet. var. *veronicae* Wint. The newly formed spores of this smut were found to germinate readily in May but to gradually lose the power as the season progressed as had been found to be the case with *E. floerkeae* Holw. (2nd suppl. list, No. 487). The promycelial spores are usually two (1–4) in number, 15–20 x 3μ.

Material wintered outdoors (May to May) germinated the following spring in the same manner.

Additional Hosts.

Synchytrium aureum Schroet.

In September, 1912, this was found at Millston, Jackson county on *Lycopus virginicus, Lysimachia terrestris* and leaves of blackberries that I have referred to *Rubus hispidus* and *Rubus villosus*. The infection was sufficient to indicate that each of these plants are normal hosts of the organism in that locality, *Rubus villosus* being least affected. No success attended special efforts to find other hosts. In 1913 it was collected at Athelstane, Marinette Co., on *Rubus hispidus* but on no other host. In 1892 *Synchytrium* occurred rather abundantly in a bit of woodland near Berryville on *Viola pubescens* and *Geum canadense* and during the same season it was collected at Somers, but a few miles distant, on *Ranunculus recurvatus*. The infection of the latter was limited and I have not seen it since on this host. It was collected again at Berryville in 1894 soon after which the station was cleared and put under cultivation. In 1902 a collection on *Viola pubescens* was made at the Somers station. In 1907 considerable infection of the same host was observed at a station intermediate between the other two and during the same season very limited infection of *Prenanthes alba* at this station and of *Pedicularis canadensis* near Racine was observed. The infection of the two latter hosts appeared to be accidental and temporary, the organism failing to get a permanent foothold. At Millston some of the affected leaves of *Lycopus* bore considerable hypertrophies often surrounded by purple discoloration but usually there was little dis-

tortion of the hosts, even when the sori were numerous and aggregated, the pressure being into the mesophyl which was sometimes torn from the epidermis in the area surrounding the gall.

The common factors which make for susceptibility in these various hosts are not apparent to me.

Septoria astericola Ell. & Evht. on *Aster puniceus.* In the specimen on this host the spots become lead color with a dark border. The largest spots are 1 cm. long. The pycnidia are epiphyllous, about 80μ in diameter and the sporules 23–33 x 1μ. Collected at Lake Mills, Oct. 19, 1912.

Gloeosporium saccharinum, Ell. & Evht. Specimens on *Acer spicatum* collected at Spooner have circular spots of a pale olive color with a darker border; the largest sporules are 7x3μ. The fungus often developes on subcircular spots of a tan color on *Acer Saccharum.*

Cercospora caricina Ell. & Dearn. My notes of a specimen on *Cyperus filiculmis* collected at Madison, Aug. 12, 1912, are as follows: Hyphae 3–8 in a tuft, brown, somewhat nodulose, often denticulate at the apex, 50–80x3–4μ; conidia hyaline, obelavate-cylindrical, straight or curved, becoming pluriseptate, 65–100x 3–4μ. On bracts and culms, spreading from above downward. *Cercospora caricina* Ell. & Dearn. is described as having hyphae 15–25 x 3–3½μ and conidia 34–73 x 3μ, but I have specimens on *Carex* in which the hyphae and conidia equal those noted on *Cyperus. Cyperus Houghtonii* which was tentatively given as a host in the 4th suppl. list should not have been omitted from the provisional list.

Cercospora ceanothi Kell. & Swingle. On *Ceanothus americanus.* Madison. In one of the collections on this host the fungus is particularly well developed, the conidiophores being 20–45x 4–5μ and the attenuate conidia 80–150 x 4–6μ. A collection made in the same locality two weeks later agrees with the description of *Cercospora fuliginosa,* E. &. E. the conidia being darker, cylindrical and 30–80 long. It is probable, therefore, that the descriptions of *C. ceanothi* Kell. & Swingle and *C. fuliginosa* Ell. & Evht. were drawn from different states of the same fungus. The former is the prior name and the latter is antedated by *C. fuliginosa* Ell. & Kell. on *Diospyros* (1887) for which reason *C. MacClatchieana* Sacc. & Syd. was substituted.

ADDITIONAL SPECIES.

Leptosphaeria folliculata Ell. & Evht. var. OXYSPORA n. var. On *Carex gracillima*. Price Co. Sept. 9, 1911. Differs from the type in the somewhat narrower asci (*ca.* 50x8μ) and especially in the triseptate acute ascopores (*ca.* 15x3μ). On the comparatively narrow leaves of this host the perithecia are borne on dead apical areas at the bases of which there is often evidence of primary spotting and confluence. I am indebted to Dr. R. A. Harper for comparison of this with the type in the Ellis herbarium at the New York Botanical Garden. It is not unlikely that sufficient material would connect these forms with *L. caricicola* Fautr. and *L. caricina* Schroet.

Phyllosticta livida Ell. & Evht. On *Quercus macrocarpa,* Millston, Jackson Co. In these specimens the pycnidia are hypophyllous. If they really represent this species the fungus has a wide distribution in the U. S. previous collections being reported from California and Florida.

PHYLLOSTICTA LIATRIDIS n. sp. Spots round, white or sordid, arid, 1–2 mm. in diameter, usually surrounded by a broad black border; pycnidia epiphyllous, prominent, black, about 65μ; sporules hyaline, oblong, 2–4 nucleolate, about 10x4μ. On *Liatris spicata,* Gaslyn, Burnett Co. Aug. 1, 1911. This can hardly be *Phoma minutissima* Cke. as that species is described.

DIPLODIA UVULARIAE n. sp. Spots oval to orbicular, white, thin and arid, usually with a ferruginous border, 8-15x5–10mm.; pycnidia mostly epiphyllous, scattered, black, globose, 100–150μ; sporules elliptical to ovate, brown, uniseptate, 12–20x6–7μ. On *Uvularia (Oakesia) sessilifolia* Spooner, Aug. 15, 1911 (type) and Gaslyn. What is probably imperfect material of this species has been collected at Blue Mounds on *Uvularia grandiflora.* It is not unlikely that *North Am. Fungi* 2153 issued under the *nomen nudum Phyllosticta uvulariae* Galloway is of this character. (See 4th suppl. list under No. 359.) Macroscopically this fungus suggests *Phyllosticta cruenta* (Fr.) Kx. Occasional biseptate sporules occur as is to be expected.

Stagonospora intermixta (Cke.) Sacc. Price Co., Oct. 9, 1911. On leaves of *Cinna arundinacea.* I have not seen an

authentic specimen of this species. The specimens which I have referred here have depressed-globose pycnidia 40–60μ in diameter with a round apical pore which is surrounded by a thick black ring. The long-fusoid sporules are 7—septate, 40–60x 3½–5μ.

Septoria andropogonis, n. sp. Causing narrow elongated areas of a reddish-yellow color sometimes becoming sordid; pycnidia epiphyllous, subseriate or scattered, dark brown, depressed globose, little prominent, 75–100μ; sporules hyaline, straight or slightly curved, more acute at one end, becoming 2–4 septate, 30–50x2–3μ. On leaves of *Andropogon furcatus,* Gaslyn, Burnett Co. July 31, 1911.

Septoria polita n. sp. Pycnidia scattered, globose, innate, black, ostiolate, 65–100μ; sporules hyaline, straight or somewhat curved, truncate to obtusely rounded at each end, becoming 3–5 septate, 35–50x2½–3μ. On *Carex sp. indet. (stellulata?)* Gaslyn, Wisconsin, Aug. 4, 1911. This attacks the distal portion of the very narrow leaves of the host which becomes sere. The sporules have a very smooth or polished appearance and are not at all constricted at the septa.

Septoria carpinea (Schw.?) n. comb. Spots subcircular to angular, numerous, reddish brown becoming sordid in the center, somewhat paler below, 1–5 mm. in diameter; pycnidia epiphyllous, few, scattered, prominent, black, globose, ostiolate, about 65μ; sporules hyaline, usually curved, frequently arcuate, pluriguttulate, 25–40x2–3μ. On *Carpinus caroliniana,* Gaslyn, Wisconsin, Aug. 8, 1911. It seems quite possible that this is the fungus called *Xyloma* by Schweinitz and *Depazea* by Fries.

Septoria Polymniae Ell. & Evht. The specimens on *Polymnia canadensis,* collected near Somers in 1903, which I hesitatingly refer to this species show suborbicular spots ½–1 cm. in diameter which become brown above, darker toward the margin. The pycnidia correspond with those of this species. My notes of the size of the sporules read 40–45x1½–2μ.

Sacidium microspermum (Pk.) n. comb. *(Septoria microsperma* Pk.) On fallen leaf of *Betula alba papyrifera.* Butternut, Oct. 8, 1911. Hypophyllous on indefinite brown areas which show a tendency to extend along the veins; basidia and

sporules in a discoid layer 100–150μ broad which is covered by a chitinoid, punctulate clypeus which becomes irregularly fissured; sporules straight or allantoid, 6–10 x ¾–1½μ. *North American Fungi* 674 on *Betula lenta,* collected by Nuttall in West Virginia, shows faded leaves with circular green areas. The pycnidia, however, are by no means confined to the green spots. In the West Virginia specimens also the sporules are smaller than in the type as described. I assume that it represents it in its *Sacidium* structure. Perhaps this is not distinct from *Leptothyrium betulae* Fckl.

(This has since been collected on the same host at Wausaukee.)

A *Gloeosporium* which has appeared in the greenhouse of the botanical department at Madison on the leaves of ***Dendrobium moschatum*** causes orbicular arid spots about 1 cm. in diameter with a dark purple border and elevated margin. The acervuli are brown, scattered, mostly epiphyllous; the sporules oblong to ovate-oblong, obtuse at both ends, biguttulate, 10–15x4μ. Probably this is *Gloeosporium cinctum* B. & C. and perhaps also *Gl. pallidum* Karst. & Har. The studies of Shear and Wood, however indicate that it is a conidial condition of ***Glomerella cingulata*** (Stonem.) S. & V. S. (U. S. Dept. of Agr., B. P. I., Bull. 252).

COLLETOTRICHUM HELIANTHI n. sp. Spots definite, orbicular, olivaceous with a cinereous center and a black margin, paler below, often confluent, 3–5 mm. in diameter; acervuli very prominent, one or few on a spot, 50–65μ broad, surrounded by black rigid bristles 80–150x3–5μ which taper from base to apex; sporules hyaline, fusiform to arcuate, nucleolate, acute at each end, 25–35x2½–3½μ. On *Helianthus sp. indet.* Madison, Wisconsin, July 7, 1907. This is allied to *C. solitarium* Ell. & Barth. from which it differs in the larger bristles and sporules. I found the specimen in the herbarium of the University of Wisconsin with the name of the collector not given

Ovularia asperifolii Sacc., var. LAPPULAE n. var. Spots suborbicular, dark brown, ½–1 cm; conidiophores hypophyllous, scattered or in tufts of 2–4, hyaline, often toothed, usually 16–20x3–4μ; conidia in chains which are sometimes branched, hyaline, 6–18x3–4μ; the lower conidia are cylindrical, acute at each end, 12–18x3–3½μ, the upper fusoid, 6–12x3–3½μ. Much

longer hyphae (*ca.* 50μ) have been observed bearing conidia singly and laterally. On *Lappula virginiana.* Somers, Racine and Blue Mounds. While this fungus causes conspicuous spotting of the leaves the conidia are inconspicuous and evanescent. I have had it under observation for a number of years expecting at some time to secure specimens with a more profuse development of conidia. A specimen collected at Blue Mounds, July 13, 1912, is taken as the type. A more recent collection made at Potosi bears conidia up to 30μ in length. The Wisconsin fungus seems to be closely allied to var. *symphytituberosi,* Allesch. (*Hedwigia,* 1894, p. 73.) These specimens differ from *Hermodendron farinosum* Bon. as figured (Bot. Zeit., t. VIII, fig. 9) in the longer and narrower conidia and the absence of the two guttulae in the lower members of the chain.

During August and September, 1912, there was collected at Madison on leaves of *Ribes americanum* a fungus of which the following notes were made: "Spots angular, limited by the veinlets, often confluent into irregular areas, brown, 2–5 mm. in diameter; conidiophores hypophyllous in scattered tufts, closely fasciculate from a prominent sclerotioid base, hyaline, often toothed, 30–65x2–3μ; conidia terminal and lateral, hyaline, cylindrical, abruptly acute or rounded at each end, occasionally with a median septum, 20–50x3–4μ. The tufts usually have more or less of a pink tinge. Large fasciculi have a marked stilboid appearance." Leaves bearing the fungus were wintered out of doors and the following May were found to bear heads of conidia up to 250μ or more in diameter of a vinous purple color with the conidiophores compacted into blackish stipes *usque* 150μ high each springing from the summit of a plectenchymatous pseudopycnidium. The conidia borne on these heads were hyaline, catenulate, fusoid, continuous, 10–18x3–4μ. With these were fasciculi, snow white to purplish, of the mucedine type and occasional broader ones more tubercularioid in appearance.

Accepting the coremium structure as the climax development of this fungus I have labeled the specimens GRAPHIOTHECIUM VINOSUM n. sp. and as it appears to be at least a facultative parasite have given it a place in this list.

Ramularia calthae Lindr. Specimens having the following characters have been referred to this species. Spots small,

angular, immarginate, limited by the veinlets, becoming confluent, brown, more abundant near the margin of the leaf; conidiophores epiphyllous, tufted from a stromatoid base, erect, simple, hyaline, 15–30x1½–2μ; conidia similar, sometimes catenulate 12–24x1–1½μ. On *Caltha palustris*. Gaslyn, Burnett Co., Aug. 30, 1911.

Cercosporella exilis n. sp. Spots round to angular, limited by the veinlets, often confluent, brown, 2–5 mm.; conidiophores in small loose tufts which are effused over the lower surface of the spots, hyaline, continuous, usually subulate, nearly straight, seldom branched, 10–20x2½–3½μ; conidia cylindrical, straight, hyaline, continuous or obscurely septate, 20–40x1–2μ. On *Phryma Leptostachya*. Madison, Blue Mounds and Devils Lake, August and September.

Cladosporium paeoniae Pass. On *Paeonia* (cult.) Madison. Pending an investigation of the diseases of paeonies in the United States, which I am informed, is to be made, I use this name provisionally.

Cladosporium gloeosporioides Atk. On *Hypericum virginicum*. Grand Rapids (Peltier) and Madison. This forms definite alutaceous spots on the leaves. When, however, the host plants are in a thick overshadowing growth of *Carices* and other taller plants the hyphae are borne on indefinite discolored areas. Frequently all gradations may be seen on a single host; on the upper leaves, exposed to the sunlight, the hyphae being confined to definite tan colored spots while on the lower they are borne on indefinite subolivaceous areas. I find the length of the hyphae variable; in some specimens 20–30μ, in others *ca.* 60μ. Dr. R. A. Harper has kindly compared this with specimens of *Gloeosporium cladosporioides* Ell. & Hals. in the Ellis Herbarium and transcribed the following notes from the inside of one of the envelopes; "Hyphae 35–40x4μ, fasciculate, nodulose above, hyaline becoming dark; conidia oblong-elliptical 10–14x4–6 microns". Dr. Harper writes:

"The spores seem like those on your material but the fungus on Halsted's material seems to be almost if not entirely on the stem. His host plant, of course, has narrow leaves quite different from yours. I did not get a good preparation of the conidiophores; I should think the two might be the same but I am

doubtful. The New Jersey fungus is certainly not as conspicuous as yours and produces no such leaf spots."

Considering the differences in the hosts, it seems to me that there is a variable *Cladosporium* on *Hypericum* to forms of which these two names were applied. If that is the case I would prefer the later name here used to avoid tautology.

CERCOSPORA FINGENS n. sp. Spots suborbicular, immarginate, blackish brown, 3–5 mm.; conidiophores hypophyllous, olivaceous brown, somewhat crooked, denticulate, thicker and paler toward the apex, pluriseptate, 130–250x4–6μ; conidia hyaline, pluriseptate with a tendency to break apart at the septa, somewhat flaccid, tapering upward, 100–215x3–5μ. On *Thalictrum dasycarpum,* Burnett, Washburn and Price Counties, July–September. On *Thalictrum dioicum,* Lone Rock, (R. A. Harper and G. M. Reed). Because of the long and slender hyphae and conidia this resembles, under a hand lens, *Phytophthora thalictri* Wils. & Davis for which it was mistaken in the field.

I was at first disposed to refer this to *Cercospora aquilegiae* Kell. & Sw. but as no specimens have been collected on *Aquilegia* in Wisconsin, I infer that it is distinct.

Puccinia microsora Koern. Amphi-and teleuto-spores on *Carex Tuckermani* Price County and *Carex scabrata,* Bayfield.

Coleosporium sonchi-arvensis (Pers.) Lev. II, III, on *Sonchus asper,* I on *Pinus sylvestris,* Sturgeon Bay. The uredinia were collected by Mr. J. G. Sanders, Entomologist of the Wisconsin Agricultural Experiment Station, who found it to be locally abundant. The aecia usually appear upon but one of the paired leaves.

Herbarium of the University of Wisconsin, Madison Wisconsin, March, 1913.

NOTES ON PARASITIC FUNGI IN WISCONSIN—II.

J. J. Davis.

This communication holds a supplementary relation to *A provisional List of parasitic Fungi in Wisconsin* which was presented to the Wisconsin Academy of Sciences, Arts and Letters in March, 1912, and published in its Transactions, volume XVII pt. 2. After some notes of a miscellaneous character a list is given of hosts and another of species additional to those previously reported for Wisconsin. A communication of similar scope was presented to the Academy in April, 1913, and is published herewith.

University of Wisconsin Herbarium, Madison, Wisconsin, April, 1914.

Peronospora viciae (Berk.) D. By. In the provisional list a question mark was placed after *Vicia americana* where given as a host of this mildew. The reason for this is that the conidia of the downy mildew collected on this host in Wisconsin are longer than those of *P. viciae* on *Pisum* or on foreign species of *Vicia* as far as I have examined them. All of the specimens on native species of *Vicia* I have seen are similar to those that have been collected on *V. americana* in Wisconsin. The Wisconsin station is near Lake Mills and on the railroad right of way where the mildew may have been introduced from the plains region which seems to be the habitat of this form. Such evidence as I have seen indicates that the American and European forms are physiologically distinct. I would suggest that the native form be distinguished as *Peronospora viciae* var. *americana*— with conidia 30(24–36) x 20(17–26) and that *Fungi Columbiana 1836* on *Vicia linearis* Stockton, Kansas, Bartholomew, be taken as the type of this variety.

An interrogation point was also placed after *Acalypha virginica* where given as a host of *Peronospora euphorbiae* Fckl. in the provisional list because the quantity collected was insufficient for determination. Further search has been fruitless save for one conidiophore.

Plasmopara ribicola Schroet. The young oöspores of this species that I have seen are few, scattered, globular, smooth, 26–33μ in diameter. The oögonial wall is often symmetrically thickened on two opposite sides.

Protomyces fuscus Pk. appears to be a race of *Plasmopara pygmaea* (Ung.) Schroet. that produces oöspores abundantly but conidia not at all. I have had this form under observation for a number of years with reference to the appearance of conidia. The similarity of the spores to the oöspores of *Plasmopara pygmaea* (Ung.) Schroet. and the presence of antheridia indicate the character of the fungus. I label it *Plasmopara pygmaea* var. *fusca* (Pk.) although it loses the character of the genus with the suppression of conidia.

Protomyces andinus Pat. In 1911 this was collected at Butternut and Madison on *Bidens* with but few scattered resting spores and no hypertrophy of the host. Examination of fixed material of this kind showed the nuclei to be degenerating. I have not seen it on *Bidens* since although abundant on *Ambrosia.*

Septoria alnifolia Ell. & Evht. A hypophyllus *Septoria* on *Alnus incana* collected at Madison is probably of this species but doubtfully distinct from *S. alni* Sacc.

Septoria dentariae Pk. It is probable that this may properly be referred to *S. sisymbrii* Ellis as was done in the preliminary list. There is no question, however, as to its being the fungus that was later described by Peck under this name. Hennings & Ranojevic have proposed the name *Septoria sisymbrii* for a Servian fungus (Ann. Mycol. *10*:390 (1910) which is perhaps not distinct from the American plant, but I have not seen Kab. & Bub. *Fungi Imp. Exs. 557.*

Gloeosporium saccharinum Ell. & Evht. (Proc. Acad. Nat. Sci. Phila. 1891, pp. 82–83) appears to have been founded upon material of an unusual character in which the fungus had run

riot. The form ordinarily seen shows spots of subcircular outline 5–15 mm. in diameter. They are at first pale-olivaceous or reddish brown, become alutaceous, fading with age, the peripheral portion darker. They are sometimes confluent. The tissue of the spots finally disintegrates, becomes ragged and falls away centrifugally. The acervuli appear centrifugally, are epiphyllous, saucer shaped, 80–160μ in diameter, sometimes confluent.

Juniperus communis depressa was given as a host of *Cercospora sequoiae juniperi* Ell. & Evht. in the 4th supplementary list but was omitted from the provisional list. Additional specimens have been collected at Lake Mills by E. M. Gilbert and the writer.

Puccinia cirsii-lanceolati Schroet. I find in the herbarium aecia of this rust collected at Blue Mounds.

Puccinia rubigo–vera (D C.) Wint. *Secale cereale* seems to have been omitted from the list of hosts of this rust in the provisional list.

Gymnosporangium clavariaeforme (Jacq.) D C. Telia have been collected on *Juniperus communis depressa* at Merrimack and Sullivan. They were abundant at the latter station.

Phragmidium occidentale Arth. In the provisional list aecia and telia were reported. Uredinia have since been collected at Ellison Bay in the northeastern corner of the state. Previous collections were made in the northwestern portion.

Melampsoropsis ledicola (Pk.) Arth. Telia of this species were collected at the same time as those of the following. The uredinia have not yet been collected in Wisconsin. The record "I" in the provisional list was founded on a single collection of *Peridermium decolorans* Pk. in Vilas county.

Melampsoropsis ledi (Lk.) Arth. Germinating telia were collected at Sturgeon Bay June 24th, 1913.

Melampsoropsis chiogenis (Diet.) Arth. In *N. A. Flora* the type locality of this rust is given as "Forest City" which should read Forest county. The station is now included in Oneida county.

Pucciniastrum myrtilli (Schum.) Arth. Specimens bearing telia were collected at Athelstane. The teliospores were more abundant in the epidermal cells of the upper surface of the leaves. Fraser (*Mycologia 5*:237, 6:27) finds that the aecia are borne on the leaves of *Tsuga canandensis*. The *Peridermium peckii* of the provisional list probably belongs to this species.

The *Accidium sp. indet.* on *Amphicarpa monoica* of the provisional list is *Aecidium falcatae* Arth.

Senecio aureus was unintentionally omitted from the enumeration of hosts of "*Aecidium compositarum*" in the provisional list. Collections of aecia on this host have been made at Racine, Radisson and Merrimack.

According to the inoculation experiments of Fraser (*Mycologia 4*:236, *6*:25) the *Peridermium balsameum* Pk. of the provisional list is probably the aecial stage of *Uredinopsis*. There seems to be no way at present of determining with which of the five described species of *Uredinopsis* that occur in Wisconsin any particular specimen of the *Peridermium* is connected. Fraser has found that *Calyptospora goeppertiana* Kuehn also produces a *Peridermium* on *Abies balsamea*. This rust probably occurs also in Wisconsin but has not yet been collected.

Caeoma abietis-canadensis Farl. has been shown by Fraser (*Mycologia 3*:188, *5*:238, *6*:27) to be the aecial form of a *Melampsora* on *Populus grandidentata* which does not produce aecia on *Larix*. Probably some, if not all, of the uredinia and telia collected in Wisconsin on this host are of this race.

Entyloma lineatum (Cke.) Davis. Material that had been wintered out of doors was brought to germination in tap water slide cultures early in May. The normal germination appears to be in the sorus, isolated spores seldom germinating. The promycelium is consequently long (usually 35–50μ) and is flexuose and irregularly nodulose, reminding one of the conidiophores of *Ramularia*. The sporidia are borne in apical whorls of 2 to 4, are fusoid—cylindrical, 7–14x2μ. The whorl of sporidia is detached intact together with about an equal length of the distal portion of the promycelium and then rises to the surface of the water in the currents of which it revolves and moves in a very irregular manner. This is the same method of detachment that takes place

in *Entyloma nymphaeae* (Cunn.) Setch. (Trans. Wis. Acad. Sci. Arts & Letters *11*:176) and is probably correlated with the aquatic habit. It seems to be of service in increasing the flotation of the sporidia and the likelihood of their catching upon the host. That this method of detachment is not constant, however, is indicated by the fact that Setchell does not mention it in his account of the germination of the spores of this species but refers to the sporidia as falling from the promycelia. (*Bot. Gaz. 19*:188 [1894].)

Additional Hosts.

Not previously recorded as bearing the fungi mentioned in Wisconsin.

Peronospora parasitica (Pers.) Tul.—On *Arabis hirsuta.* Fish Creek.

Synchytrium aureum Schroet. A few galls on *Caltha palustris* apparently caused by this fungus were collected at Wausaukee in August, 1913, but the material is scanty and immature.

Plasmopara pygmaea (Ung.) Schroet. Conidia and oospores on *Hepatica triloba.* Afton.

Peronospora grisea Ung. On *Veronica americana.* Ellison Bay.

Sphaerotheca mors-uvae (Schw.) B. &. C. on *Ribes gracile.* Detroit Harbor.

Microsphaera alni (Wallr.) Wint. On *Alnus incana.* Wausaukee. Perithecia sparse.

Dimerosporium collinsii (Schw.) Thuem. On *Amelanchier, oblongifolia.* Merrimack, May 3rd, 1913. (W. N. Steil). On leaf of preceding year but ascospores not yet formed.

Exoascus confusus Atk. On fruit of *Prunus virginiana.* Sturgeon Bay.

Exoascus insititiae Sadeb. On *Prunus pennsylvanica.* Sturgeon Bay, causing witches brooms.

Exoascus cerasi (Fckl.) Sacc. On *Prunus Cerasus* (cult.) Wyalusing.

Exoascus coerulescens (Mont. & Desm.) Tul. On *Quercus coccinea.* Richland Center. (R. A. Harper & G. M. Reed.)

Taphrina virginica Seym. & Sadeb. On *Ostrya virginiana.* Potosi.

I am indebted to Mr. H. G. MacMillan of the Wisconsin Agricultural Experiment Station for identification of specimens in this group.

Stagonospora intermixta (Cke.) Sacc. To this species I have referred specimens of which the following notes were made. On elongated light brown dead areas which soon spread over the whole leaf; pycnidia epiphyllous, scattered, dark brown, globose or depressed-globose, 60–100μ in diameter; sporules at first hyaline and cylindrical becoming acute at one end with a central row of small guttulae, finally septate and tinted, 26–52x3–4μ. On *Phalaris arundinacea.* Devils Lake, Wisconsin, August 5th, 1913. The pycnidial wall is usually thin at the base while the outer portion is thick and blackened.

Septoria agrimoniae-eupatorii Bomm. & Rouss. On *Agrimonia gryposepala.* Potosi and Glen Haven.

Septoria cacaliae Ell. & Kell. On *Cacalia atriplicifolia.* Lake Mills. Oct. 26, 1901.

Septoria silphii Ell. & Evht. On *Heliopsis scabra.* Madison. Sporules 26–36 x 1μ. This species was described as having sporules 35–50 x 1μ, but in specimens on *Silphium perfoliatum* collected at Madison they are but 26–36 x 1μ. The spots tend to become white and arid with age.

Entomosporium maculatum Lev. var. *cydoniae* Sacc. On *Pyrus Aucuparia.* Devils Lake. Sporules 20(16–23) x 8(6–10)μ.

Gloeosporium septorioides Sacc. On *Quercus rubra.* Devils Lake. In these specimens the sporules have a narrow median division of the cytoplasm which is sometimes apparent without staining.

Gloeosporium robergei Desm. On *Ostrya virginiana.* Somers, South Milwaukee and Devils Lake. In all the specimens which I have collected on this host the cutiele on the upper surface of the spots is rugose forming white dendritic lines. It is labeled var. *dendriticum* in our herbaria.

Gloeosporium ribis (Lib.) Mont. & Desm. On *Ribes Cynosbati.* Devil's Lake.

Marssonina martini (S. & E.) Magn. On *Quercus Muhlenbergii.* Bridgeport. Some of the leaves bear also larger paler spots *usque* 2 cm. in diameter with numerous acervuli resembling those of *Gloeosporium nervisequum* (Fckl.) Sacc. *(Gloeosporium canadense* E. & E.) but the sporules are uniseptate.

Cylindrosporium glyceriae Ell. & Evht. On *Glyceria canadensis.* Athelstane. The collection on this host bears longer sporules, an occasional one much longer, than the type.

Cylindrosporium betulae Davis. On *Betula alba papyrifera.* Wausaukee. Sporules *usque* 55 x 3μ. Microconidia are quite common in this species seeming to be produced especially when the stroma is erumpent and naked.

Microstroma juglandis (Bereng.) Sacc. On *Carya glabra.* Potosi.

Septocylindrium ranunculi Pk. On *Ranunculus septentrionalis.* Madison.

Ramularia occidentalis Ell. & Kell. On *Rumex Britannica.* Madison and Athelstane.

Ramularia pratensis Sacc. On *Rumex Britannica.* Athelstane.

Ramularia desmodii Cke. On *Desmodium illinoense.* Bridgeport.

Ramularia effusa Pk. On *Vaccinium pennsylvanicum.* Wausaukee. On these specimens the conidia are borne on definite orbicular spots about 5 mm. in diameter which also bear numerous black immature pycnidia.

Ramularia veronicae Fckl. On *Veronica serpyllifolia.* Madison. This specimen bears conidia 12–18 x 3μ with a median division of the cytoplasm.

Ramularia asteris (Sacc.) Barth. On *Aster lateriflorus.* Devils Lake.

Fusicladium radiosum (Lib.) Lind. On *Populus balsamifera.* Sturgeon Bay. But a single collection has been made on this host.

Cercospora caricina Ell. & Dearn. On *Carex castanea* and *C. intumescens.* Wausaukee. On *Carex retrorsa.* Detroit Harbor and Athelstane. In the specimen from the latter locality the conidiophores are only 15–25μ long.

Cercospora rhoina Cke. & Ell. On *Rhus glabra.* Madison and Bridgeport.

Ustilago utriculosa (Nees) Tul. On *Polygonum lapathifolium.* Madison (W. N. Steil).

Uromyces halstedii de Toni. On *Leersia oryzoides.* Wisconsin river bottom opposite Bridgeport. The only previous collection of this rust in Wisconsin was a scanty one made by Dr. Arthur at the dells of the Wisconsin river in 1893 on *Leersia virginica.*

Uromyces scirpi Burr. *Scirpus validus* is given as a host of this rust in Wisconsin in *North American Flora.*

Uromyces junci-tenuis Syd. On *Juncus Dudleyi.* Uredinia and telia at Wausaukee.

Uromyces prominens (D C.) Lev. Telia on *Euphorbia glyptosperma.* Wausaukee. This name is used instead of the later *Uromyces euphorbiae* Cke. & Pk. in the wide sense in which that name was used in the provisional list although it is also the name which is applied, in the narrow sense, to the particular race which occurs on this host species.

Uromyces hyperici-frondosi (Schw.) Arth. Uredinia and a few telia on *Hypericum Kalmianum.* Fish Creek.

Puccinia coronata Cda. Aecia on *Rhamnus lanceolata.* Glen Haven.

Puccinia andropogonis Schw. An *Accidium* on *Linaria canadensis* in the herbarium of the University of Wisconsin which was collected at Mazomanie in June, 1908, is perhaps of this species.

Puccinia cyperi Arth. Uredinia and telia on *Cyperus Houghtonii.* Athelstane.

Puccinia patruelis Arth. Telia on *Carex pennsylvanica.* Madison (E. T. Bartholomew) *North American Uredinales, 651.*

Puccinia curtipes Howe. On *Tiarella cordifolia.* Devils Lake.

Phragmidium disciflorum (Tode) James. Uredinia and telia on *Rosa acicularis* at Ellison Bay are probably *Ph. rosae-acicularis* Liro if one accepts that as a distinct species.

Melampsoropsis cassandrae (Pk. & Cl.) Arth. Aecia *(Peridermium consimile* Arth. & Kern) on *Picea canadensis.* Wausaukee.

Uredinopsis atkinsonii Magn. A collection on *Cystopteris bulbifera* from the Wisconsin river bluff opposite Bridgeport I have referred to this species.

Additional Species.

Not previously reported as occurring in Wisconsin.

Plasmopara viburni Pk. On *Viburnum Opulus americanum.* Wausaukee and Athelstane. Conidia and oospores. Oospores subepidermal, oogonia globose, *usque* 48μ in diameter, wall often irregularly thickened; oospores globose, 24–37μ in diameter, wall 2–4μ thick, smooth or nearly so.

Asterina cupressina Cke. On *Juniperus communis depressa.* Fish Creek.

Ascochyta wisconsina n. sp. ad interim. Spots orbicular to elliptical, gray with a narrow black border and frequently zonate above, brown with a less definite margin below, 1–3 cm. long; pycnidia epiphyllous, scattered, brown, prominent, globose to sublenticular, 85–110μ in diameter; sporules ovoid to oblong, hyaline, 4–8 x 2½–3½μ. Some of the longer sporules have a median septum and it is probable that well matured specimens would show this to be an *Ascochyta.* The affected leaf tissue seems quite friable and apparently fragments and falls away piecemeal. On *Sambucus canadensis.* Devils Lake. August 7, 1913. On examining a specimen of *Septoria sambucina* Pk. collected at Racine it was found to bear also an *Ascochyta* with

sporules 8–10 x 2½–3μ. The pycnidia are epiphyllous on spots 1–2 cm. long which are sordid-arid with a purple border above, olivaceous below. I use this name for convenience until the relationship of the fungus to the various species that have been described on *Caprifoliaceae* is known.

Ascochyta caulicola Laubert (*Ascochyta lethalis* Ell. & Barth.) On living stems of *Melilotus alba.* Madison (A. H. Gilbert).

Stagonospora paludosa (Sacc. & Speg.) Sacc. On *Carex retrorsa.* Athelstane.

Septoria betulicola Pk. The common *Septoria* on *Betula* in Wisconsin, first manifests itself by the formation of small (1–2mm.) scattered, angular, intervenular, black brown spots which are lighter colored below. These spots become surrounded by an indefinite yellow discoloration which later becomes of a more or less reddish brown above and light brown or buff below. These run together into indefinite areas usually 1–2 cm. in diameter. On the lower surface of these areas the usually few and scattered pycnidia are borne. These are subepidermal, globose, thick-walled, about 100μ in diameter. The sporules are straight to strongly curved, spuriously pluriseptate, 40–60x1½–2μ. This is the form that is usually distributed under the name *Septoria betulicola* Pk. although *North American Fungi* 2nd series, *2166* which resembles it was issued as *Septoria betulae* (Lib.). Other specimens show smaller (*ca.* 5mm.) darker, more definitely limited areas which become cinereous above. *Septoria betulicola* apparently has not been reported in any of the Wisconsin lists. The characters of the sporules seem to ally this with *Septoria betulina* Pass. *Septoria betulae* (Lib.) West. was reported in the supplementary list 402a. The specimen upon which this record was based (Three Lakes, June 25th, 1892) bears circular light yellowish brown spots 1–2 mm. in diameter with a definite dark brown border. The pycnidia are epiphyllous but visible below, globose, thick-walled, about 80μ in diameter; the sporules straight or curved, triseptate, 30–40x2μ *Fungi Columbiani 1586* on *Betula occidentalis,* collected in Oregon and issued as *Septoria betulicola* Pk. seems to differ from this only in the more irregular spots and the much paler and less distinct border.

Septoria alni Sacc. On *Alnus incana.* Wausaukee. Referred to this species because of the short sporules, the longest of which attain 40μ.

Septoria hepaticae Desm. On *Hepatica acutiloba.* Glen Haven. I have collected this but once when it occurred in connection with *Protomyces fuscus* Pk.

Septoria cassiaecola Kell. & Swingle. On foliage leaves of *Cassia chamaecrista.* Glen Haven. Amphigenous on intervenular areas of the leaflets which are not at first discolored but which become brown.

Septoria senecionis-aurei n. sp. ad interim. On irregular indefinite grey portions of large brown areas of the radical leaves. Pycnidia epiphyllous, scattered, brown black, spherical, with a distinct cellular wall, 55–65μ in diameter; sporules hyaline, straight, 16–26 x 1μ. On *Senecio aureus.* Devils Lake, September 1, 1913. I use this name for convenience until the relation of the fungus to previously described forms such as *Septoria senecionis-sylvatici* Syd. and S. *adenocauli* E. & E. becomes known.

Gloeosporium cylindrospermum (Bon.) Sacc. On *Alnus incana.* Madison.

Marssonina neilliae (Hark.) Magn. On *Physocarpus opulifolius.* Wausaukee. Macroscopically this resembles *Entomosporium. Marssonina coronaria* (Ell. & Davis) is similar and doubtless closely related.

Marssonina baptisiae (E. & E.) On *Baptisia leucantha.* Bridgeport. The globose acervuli are not subcuticular, as one might infer from the description, but subepidermal or innate. Sporules as long as 33μ were observed. Septation of the sporules seems doubtful.

Marssonina rhabdospora (E. & E.) Magn. A collection on leaves of *Populus grandidentata* made on the bank of the Wisconsin river opposite Bridgeport September 18, 1913, bears hypophyllous subcuticular acervuli which are applanate to hemispherical, 75–150μ in diameter. The affected leaf areas are first yellow, then brown, then indefinite sordid spots appear which become determinate, orbicular, arid, zonate, 3–5 mm.

in diameter with a narrow dark margin. In these spots the leaf parenchyma separates from the venules and probably falls away leaving the venular network. The zonate spots look much like the work of leaf miners, the dark lines suggesting burrows containing excreta. From the closely massed, erect, straight hyphae of the acervuli are abstricted hyaline filiform sporules 7–11 x 2μ. *Fungi Columbiani 1587* (on *Populus tremuloides, Newfield,* N. J. J. B. Ellis.) issued under the name *Septoria musiva* Pk. bears similar but somewhat larger spots (1–2 cm.) and sporules 18–30x2–3μ uniseptate. I am considering the Wisconsin collection to be a microconidial state of this which I refer to *Marssonina rhabdospora* E. & E.

Since this was written collections on *Populus grandidentata* have been made at Phlox and Neopit. The following notes were made from the latter: Spots circular, alutaceous shading outward into reddish brown and with a darker margin, the upper surface darker than the lower, 1–4 mm. in diameter, sometimes confluent; acervuli hypophyllous, usually few; sporules generally straight, uniseptate, 18–33 x 2–3μ. In the Phlox collection the spots are more numerous, rather more angular and more frequently confluent.

Cylindrosporium vermiforme n. sp. Spots amphigenous, subcircular to irregular, immarginate, brown, 5–15 mm. in diameter; acervuli epiphyllous, scattered, subcuticular, flat, 40–60μ in diameter; sporules, hyaline, vermiform, curved, sigmoid or flexuose, pluriseptate, 150–250x4–5μ. On leaves of *Alnus incana* Devils Lake, Wisconsin. The sporules suggest eel worms in appearance. Specimens in the herbarium of the University of Wisconsin collected at Devils Lake, August 15th, 1906, by R. A. Harper show many of the sporules provided with a rostrum, 10–42x1–1½μ, at the apex. A collection made in August, 1913, does not show the "rostrum" but one made September 1, 1913, showed some of the sporules so provided. Living sporules, germinating in water, in addition to the lateral germ tubes, put forth one from the apex so like the "rostrum" that I infer that the beak is a germ tube put forth while the sporule is still *in situ*. Some sporules bearing a beak put forth in water a second tube alongside the rostrum and similar to it. Because of the large, erumpent, fasciculate sporules this might be referred to *Hyphales*.

Ascochyta saniculae n. sp. On indefinite, discolored, more or less mottled areas which may include the entire leaf; pycnidia scattered, innate, globose to lenticular, thin walled, light reddish brown with a round apical pore surrounded by a dark ring, 100–170μ in diameter; sporules hyaline, cylindrical, usually straight, 4-guttulate, 20–30 x 4–6μ. On leaves of *Sanicula marilandica.* Grant County, Wisconsin, September 19th, 1913. The pycnidia are very inconspicuous. They are most readily seen by transmitted light when they show as translucent points.

Cylindrosporium shepherdiae Sacc. (*Ann. Mycol. 11*:551. 1913). To this species, founded upon material collected at Field, B. C. by Dearness, I am referring specimens from which the following notes were made. The spots are circular, reddish brown, concentrically rugose, 3–5 mm. in diameter. They have a greenish border and are seated upon an indefinite yellowish area. The epiphyllous pycnidia (?) are aggregated in the central portion of the spot, are soon erumpent, and widely open, the white mass of sporules within being visible under a hand lens. The sporules are hyaline, oblong-cylindrical, obtuse, pluriseptate, 18–40 x 3–4μ. Collected on *Shepherdia canadensis* at two stations near Ellison Bay and at Detroit Harbor. I have not seen *Septoria argyraeae* Sacc. which I suspect is not very different.

Ramularia fraxinea n. sp. Spots none, the fungus appearing as small snow white patches on the lower surface of the leaves; conidiophores densely clustered on a more or less hemispherical stroma, hyaline, sometimes bulbous at base, 10–20 x 3–4μ; conidia apical, hyaline, cylindrical, obtuse at both ends, distal ⅓–½ more or less strongly curved, becoming 1–4 septate, 40–80 x 4–5μ. On languishing leaves of *Fraxinus pennsylvanica.* Bridgeport, Wisconsin, September 17, 1913. The gross appearance suggests a light development of *Microstroma* and the shape of the conidia a hockey stick. Perhaps this should be referred to *Fusarium.* Since collected on *Fraxinus pennsylvanica lanceolata* at Maiden Rock.

Cercosporella nivea Ell. & Barth. On *Solidago uniligulata.* Athelstane. The specimen referred here bears conidia *usque* 118 x 3–4μ on short conidiophores. The affected leaf areas are

not at first discolored but later become dead and brown and the air spaces contain hyaline mycelium and immature pycnidia or perithecia.

Cercospora echinochloae, n. sp. Spots elongate-linear reddish brown, becoming arid in the center; conidiophores hypophyllous in small tufts, brownish tinted, continuous, straight or bent, entire or denticulate or oblique at the apex, 10–26 x 4μ; conidia, hyaline, straight or curved, cylindrical to obclavate-cylindrical, distinctly 1–7 septate, 23–53 x 3–4μ. On leaves of *Echinochloa Crus-galli*. Devils Lake, Wisconsin, August and September 1, 1913.

Cercospora passaloroides Wint. Poor specimens of this fungus on leaves of *Amorpha fruticosa* were collected on the bank of the Wisconsin river opposite Bridgeport. Better specimens have been collected at Trempealeau.

Fusarium carpineum n. sp. Hypophyllous on indefinite areas which often follow the principal veins and which come to have a wilted appearance and finally assume a lethal brown below and almost black above; sporodochia superficial, convex to subhemispherical, 25–40μ in diameter, composed of globose cells 7–8μ in diameter which become flask shaped and 12–15μ long; conidia borne singly on the apex of these conidiophores, hyaline, cylindrical, obtuse at both ends, curved, biseptate, 35–50 x 3–4μ. On *Carpinus caroliniana,* Wyalusing, June 12, 1913.

Uromyces graminicola Burr. Telia on *Panicum virgatum.* Madison. On the railroad right of way. Perhaps adventive.

Puccinia melicae (Erikss.) Syd. Uredinia on *Melica striata.* Vilas county. Treboux states as the result of inoculation experiment that this is one of the forms of crown rust (*Ann. Mycol. 12*:5:483 [1914]).

Puccinia gigantispora Bubak. Aecia and telia on *Anemone cylindrica* or *virginiana.* Glen Haven.

Puccinia cichorii (DC.) Bell. Uredinia and telia on *Cichorium Intybus.* Madison, (E. T. Bartholomew) *Fungi Columbiana 3933.*

Gymnosporangium corniculans Kern. Galls on *Juniperus horizontalis* on which were some dried teliospores agreeing with those of this species were collected on the lake Michigan beach east of Sturgeon Bay in June.

Hyalopsora aspidiotus Pk. Uredinia on *Phegopteris Dryopteris*. Detroit Harbor.

Melampsora farlowii (Arth.) n. comb. (*Necium farlowii* Arth.) On young twigs and leaves of *Tsuga canadensis*. Detroit Harbor.

Melampsora arctica Rostr. Aecia on leaves of *Abies balsamea* supposed to be of this species have been collected at Brule (E. M. Gilbert) Fish Creek and Ellison Bay. The reference to this species is based on the inoculation experiments of Fraser (*Mycologia 4*:187, *5*:238). The uredina and telia have not yet been recognized in Wisconsin.

Aecidium xanthoxyli Pk. On *Zanthoxylum americanum*. Mazomanie (R. A. Harper & G. M. Reed) Glen Haven.

Aecidium proserpinacae B. & C. On *Proserpinaca palustris*. Detroit Harbor. Abundant on the marshy border of a pond on Washington Island.

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NOTES ON PARASITIC FUNGI IN WISCONSIN—III.

Supplementary to *a provisional list of parasitic fungi in Wisconsin.* Trans. Wis. Acad. Sciences, Arts & Letters *17*:2:846–984.

J. J. Davis.

The fungus recorded in the provisional list under the name *Synchytrium decipiens* Farl. is referred to the chytridiaceous genus *Woroninella* by H. Sydow using the combination *W. aecidioides* (Pk.) Syd. (Ann. Mycol. *12*:5:484). Peck's original binomial was *Uredo aecidioides* which had been proposed previously for another fungus which fact has been held by some mycologists to invalidate the publication; hence the use of another specific name.

Oöspores occur in Wisconsin collections of *Plasmopara ribicola* Schroet. They are globose, brown, smooth, 33–36μ in diameter; endospore 3—4μ thick; oögonia 37—40μ filled by the oöspores.

Peronospora parasitica (Pers.) Tul. Guy West Wilson proposes the division of this into two species and a like treatment of *P. effusa* (Grev.) Ces. (Mycologia *6*:197 *et seq.*).

Peronospora trifoliorum D By., does not occur on clover in Wisconsin as far as observed even in fields where both *Trifolium* and *Medicago* are abundant and the latter infected. The conidia

exceed the dimensions given for this species. I append measurements made from the conidia of two collections:

May 13, 1914.	May 25, 1914.
31 x 22μ	26 x 20μ
26 x 18	22 x 19
30 x 21	22 x 18
29 x 17	26 x 22
26 x 16	25 x 22
34 x 24	22 x 18
26 x 22	24 x 18
29 x 20	22 x 19
30 x 25	26 x 19
29 x 18	

These measurements indicate that the conidia were larger on the earlier date. The meteorological records show that May 13th was a day of low temperature and low relative humidity (44°–62°. 39–25) while on May 25 the temperature ranged 62°–84° and the humidity 99–66. I take it that to the low temperature may be credited the larger conidia on May 13th. This reminds one of Melhus' finding that a comparatively low temperature favors germination of conidia of *Peronosporales.*

During one season, somewhere in the nineties, there appeared at one station in the suburbs of Racine a destructive outbreak of *Erysiphe* on *Galium aparine.* On examination from time to time no spores were found in the asci and no specimens were preserved for that reason as I did not know at that time that they were not formed during the season. The mildew was looked for during subsequent years but was not again seen.

From an examination of specimens of *Lophodermium pinastri* (Schrad.) Chev. on *Pinus Banksiana* collected at Millston June 5, 1914, the following measurements were made: asci 115–185 x 22–30μ: ascospores 55–100 x 3½–4μ. It has been distinguished on the label in the herbarium as var. *amplum.* The affected leaves were still *in situ.*

Phyllosticta paviae Desm. is connected by V. B. Stewart with the ascigerous fungus *Laestadia aesculi* Pk. (Phytopath. *4*:399.)

Phomopsis vexans (Sacc. & Syd.) Harter is the name given by Harter to the fungus recorded in the provisional list under the name *Phyllosticta hortorum* Speg. (Journ. Ag'l Research *2*:338).

The *Septoria* which occurs on *Agrimonia* in Wisconsin bears smaller sporules than the *Septoria agrimoniae-eupatorii* Bomm. & Rouss. of Europe as described. They are usually 25–40 x 1μ.

There is considerable variation in the appearance of *Septoria* on *Echinocystis* in Wisconsin. The spots are commonly small, round and arid such as are attributed to *Septoria sicyi* Pk. and *S. brencklei* Sacc. Sometimes, however, they are angular, intervenular, green becoming brown. This is more nearly the kind of spot described under *Septoria echinocystis* E. & E. Both types of spot are sometimes found on the same leaf. Dr. R. A. Harper kindly compared a Wisconsin specimen with green to brown angular spots with the type of *Septoria echinocystis* E. & E. in the Ellis herbarium and wrote as follows: "The spores agree as to size etc. The spots in the type are larger, more brownish in color and rounded with a well defined center. It seems however that it ought to be the same thing." (*In lit.* Apr. 30, 1914) As these two kinds of spots intergrade I cannot consider them as due to specific distinctness of the infecting agents but rather as shade and moisture forms on one hand and the results of sunshine and dry air on the other, the latter conditions favoring a process of delimitation. As to the size of the sporules I find them to range from 20–60 x 1–2μ. In the form with round arid spots they are usually shorter than in the one with angular green-brown spots. For instance in a collection that could be referred to *S. brencklei* Sacc. most of the sporules are about 36μ long with an extreme length noted of 48μ. The collection of the *S. echinocystis* type from which a specimen was sent to Dr. Harper for the comparison has sporules 35–55 x 1–1½μ. There seems to be no reason as yet for changing the record of these forms from *Septoria sicyi* Pk.

The entry *Septoria stachydis* Rob. & Desm. in the Wisconsin lists seems to have been founded upon immature specimens of another fungus.

In returning a portion of the type specimen of *Septoria intermedia* E. & E. Mr. Ellis wrote as follows on the packet: "There

was only one leaf; this is part of it. It seems to differ from *S. solidaginicola* in its shorter spores but it may turn out after all to be only a var. of the species", and then by way of postscript, "Try and look into it." I think that it is now safe to say that the name should be eliminated by reason of being applied to a short spored specimen of a *Septoria* that occurs in Wisconsin on both *Solidago* and *Aster* and known as *S. solidaginicola* Pk. According to the description the sporules of that species are 4μ in diameter while in our specimens they are 1½–2½μ. Through the kindness of Dr. H. D. House I have had an opportunity to examine type material and find the sporules about 1½μ thick.

Examination of Wisconsin specimens that were referred to *Phleospora oxyacanthae* (Kze. & Schm.) Wallr. shows a fine branched mycelium, inter- and intra-cellular, ramifying through the affected portions of the leaves. The aerial branches of this mycelium constitute the conidia which are assurgent, more or less strongly curved sometimes even horse shoe shaped, pluriseptate, 60–100 x 4–5μ. These form a loose white felt in patches on the lower surface of the leaves which suggest a powdery mildew. No spots are caused but the affected tissues finally become dead and brown.

Leptothyrium dryinum Sacc. Specimens on *Quercus rubra* collected at Minocqua have sporules 15 x 10μ like those of *Leptothyrium maculicolum* Wint. but the small fruit bodies borne on large pale leaf areas are characters of *L. dryinum* Sacc. A specimen collected at Racine is probably on *Quercus ellipsoidalis*. *Quercus alba* should be stricken from the list of hosts of this fungus in the provisional list as I find that the specimen in my herbarium on that host is *Phyllosticta phomiformis* Sacc.

Gloeosporium septorioides Sacc. Saccardo in his description states that the sporules are always continuous. Winter in his description of *Marsonia quercina* Wint. which Saccardo gives as a synonym, describes the sporules as uniseptate. Ellis & Everhart in their description of *Gloeosporium septorioides* Sacc. var. *major* E &. E. state that the endochrome is often indistinctly divided in the center. Wisconsin specimens on *Quercus rubra* show occasional sporules with a median septum and the two halves of the sporule separate at this point resulting in two in-

dependent sporules. Some of the sporules attain a length of 30μ.

Gloeosporium thalictri Davis. In specimens collected at Phlox the spots are larger (10–15 mm.) and sometimes less definite than in the type. They become sordid-arid above and the central portion falls away. The acervuli are light brown and amphigenous.

The fungus recorded in the provisional list under the name *Cylindrosporium leptospermum* Pk. was originally described as a *Cercospora* and the change, for which I was perhaps in some degree responsible, seems to me to have been ill advised. As I see it the fungus belongs in *Hyphales, Mucedinaceae, micronemeae, scolecosporae* and I know of no genus into which it fits.

As a result of inoculation experiment by B. B. Higgins the *Cylindrosporium padi* Karst. of the provisional list has been divided into three species and connected each with an ascigerous stage upon the fallen leaves the following spring. According to this classification our Wisconsin species would stand as follows:

Cylindrosporium hiemale Higgins
On *Prunus pennsylvanica*
cuneata
Cerasus (cult.)
Ascogenous state *Coccomyces hiemalis* Higgins.

Cylindrosporium prunophorae Higgins
On *Prunus domestica* (cult.)
Ascogenous state *Coccomyces prunophorae* Higgins.

Cylindrosporium lutescens Higgins.
On *Prunus serotina.*
virginiana
Ascogenous state *Coccomyces lutescens* Higgins. I assume that the fungus on *Prunus cuneata* is identical with that affecting other members of the host group. Inasmuch as the host of the typical *Cylindrosporium padi* Karst. is a member of the same group as are the hosts of *C. lutescens* Higgins the distinctness of the latter species is not established.

Ramularia dioscoreae Ell. & Evht. (Proc. Acad. Nat. Sci., Phila., 1891, p. 85) was founded upon leaves of *Smilax* bearing *Ramularia subrufa* Ell. & Hol. It is therefore to be elided.

Solidago ulmifolia where given as a host of *Ramularia virgaureae* Thuem. in the provisional list should be placed under *Ramularia serotina* E. & E. instead. *Ramularia virgaureae* Thuem. seems to vary from an *Ovularia* to a *Cercosporella* type.

Piricularia parasitica Ell. & Evht. When well developed the conidia are produced into long slender tips as in *Cercospora* and may attain a length of 50μ.

Fusicladium radiosum (Lib.) Lind. In the provisional list this combination was erroneously attributed to Lindr. I have assumed that this is a widespread and variable species which includes the fungus occurring in Wisconsin the conidia of which vary from 15–30 x 6–11μ. *Venturia tremulae* Aderh. in that case is the ascogenous state. Peck's description of his *Cladosporium letiferum* (40th Report, p. 64) applies very well to the fungus occurring in Wisconsin and I therefore take it to be a synonym. Quite different material was collected on *Populus tremuloides* at Pepin in August and referred to var. *microscopicum* (Sacc.) Allesch. The following notes were made from this material.

Spots 1–4 mm. in diameter, orbicular, sordid-arid above with a narrow, dark, raised margin, alutaceous below also with a dark margin and a central paler portion on which the conidiophores are borne; conidia continuous, 15–18 x 4μ. This differs from the variety, as described, in the narrower, continuous, hypophyllous conidia as well as in the character of the spots.

In the 4th supplementary list, p. 78, I gave notes of a specimen that I had referred to *Cercospora megalopotamica* Speg. To indicate something of the variation I add notes regarding two further collections: Spots suborbicular, definite, immarginate, blackish brown becoming paler with age and finally white in the center, 2–10 mm. in diameter; conidiophores tufted, septate, smoky brown, 55–80 x 4–5μ; conidia slender, straight, attenuate, pluriseptate, 60–125 x 3μ. On *Bidens connata,* Price County, Sept. 9th, 1911.

Spots suborbicular, light brown with a purple margin and a white center, paler and devoid of purple below, 4–8 mm. in diameter; conidiophores amphigenous, fasciculate, varying from subhyaline to brown, straight, flexuose or bent, continuous, entire or toothed, 15–45 x 3μ; conidia hyaline, straight, attenuate,

pluriseptate, 60–100 x 3–4μ. On *Bidens connata,* Fountain City, August 12, 1914.

Telia of *Uromyces albus* (Clint.) Diet. & Hol. on leaves of *Vicia americana* were collected at Sharon in 1889. I am unable to perceive an arrangement of the verrucosities of the spore walls in rows.

The rust on *Hystrix patula* referred to *Puccinia apocrypta* Ell. & Tracy in the provisional list is probably *Puccinia impatientis* (Schw.) Arth. as I am informed by Dr. Arthur.

Gymnoconia peckiana (Howe) Trotter is made up of the aecial *Caeoma nitens* Schw. and the telial *Puccinia peckiana* Howe. Kunkel doubts the relationship (Am. Journ. Bot. *1*:37–45).

Telia of *Melampsoropsis cassandrae* (Pk. & C.) Arth. were collected at Solon Springs, June 15th, 1914.

Additional Hosts.

Plasmopara australis (Speg.) Swingle. On *Echinocystis lobata.* Galesville.

Peronospora parasitica (Pers.) Tul. On *Cardamine bulbosa.* Madison.

Peronospora trifoliorum D By. On *Astragalus canadensis.* St. Croix Falls.

Peronospora chamaecysis Wils. is the species that has been formed to include American forms such as were recorded in the provisional list as *P. euphorbiae Fckl. (Mycologia 6*; 204). On *Euphorbia glyptosperma.* Trempealeau.

Sclerospora graminicola (Sacc.) Schroet. On *Setaria glauca.* Bridgeport.

Sphaerotheca humuli (D C.) Burr. On *Viola canadensis.* Clintonville. Abundant at this station but confined to the single species of violet. *Viola scabriuscula* was abundant but entirely free from the mildew.

Erysiphe polygoni DC. On *Delphinium* (cult.) Poynette. (H. L. Russell?)

Asterina rubicola Ell. & Evht. On *Rubus occidentalis.* Grant County, opposite Bridgeport.

Plowrightia morbosa (Schw.) Sacc. On *Prunus pumila.* Shore of Lake Superior in Ashland or Iron County. (L. S. Cheney.) A specimen in the herbarium of the University of Wisconsin, collected in 1896, appears to be on this host.

Phyllosticta minima (B. & C.) Ell. & Evht. On *Acer saccharinum.* Galesville.

Phyllosticta phomiformis Sacc. On *Quercus bicolor.* Alma. Apparently no one has referred this species to *Macrophoma.*

Phyllosticta decidua Ell. & Kell. What I take to be this fungus has been collected on *Hieracium aurantiacum* at Phlox.

Septoria alnifolia Ell. & Evht. On *Alnus crispa.* Vilas County.

Septoria dentariae Pk. On *Cardamine bulbosa.* Madison.

Septoria astericola Ell. & Evht. On *Aster Shortii.* Potosi. Sporules 22–33 x 1μ.

Septoria ribis Desm. On *Ribes nigrum* (cult.) Madison. This was collected in November and the triseptate sporules, as is often the case with conidia late in the season, show a tendency to divide at the septa.

Septoria sambucina Pk. On *Sambucus racemosa.* Neopit.

Septoria atropurpurea Pk. On *Aster sagittifolius.* Grant County opposite Bridgeport. On *Aster laevis.* Wyalusing. This has the dark purple spots with small central white areas but the sporules are 90–110μ long as in *S. punicei* Pk.

Phleospora ulmi (Fr.) Wallr. On *Ulmus fulva.* Richland Center (Harper & Reed). Maiden Rock. If *Phleospora ulmi* (Fr.) Wallr. is a conidial state of *Euryachora ulmi* (Fr.) Schroet. and the ascigerous condition in Wisconsin is distinct from this and is what is known as *Dothidella ulmea* (Schw.) E. & E. then the conidial state must be distinct also and should have another name. Rehm has replaced the generic name *Dothidella* Speg. by the older *Euryachora* Fckl. (Ann. Mycol. *6*:516). It would be best perhaps to designate the states as *Euryachora ulmea*

(Schw.) and *Septogloeum ulmeum.* Both the American and European specimens that I have seen have shorter sporules (often 30—40μ) than the description indicates and are variable.

Gloeosporium septorioides Sacc. On *Quercus rubra.* St. Croix Falls. In this collection the sporules are mostly 18–22μ long, continuous.

Gloeosporium caryae Ell. & Dearn. On *Carya cordiformis.* Trempealeau and St. Croix Falls. In these collections the acervuli are epiphyllous. This fungus received a second description under the same name by Ellis & Everhart, hence the citation of these authors in the provisional list.

Gloeosporium ribis (Lib.) Mont. & Desm. On *Ribes gracile.* Trempealeau.

Marssonina potentillae var. *tormentillae* Trail. On *Rubus triflorus.* Phlox. Subcuticular. Sporules 15–18 x 3–4μ. Also collected at Solon Springs.

Microstroma juglandis (Bereng.) Sacc. On *Juglans nigra.* Galesville.

Monilia fructigena Pers. On fruit of *Prunus virginiana,* Millston and *P. pennsylvanica,* Solon Springs.

Ramularia rosea (Fckl.) Sacc. On *Salix rostrata.* Alma. *Salix pedicellaris.* St. Croix Falls.

Ramularia pratensis Sacc. On *Rumex altissimus.* Maiden Rock. Conidia about 30 x 3μ continuous. Conidiophores mostly shorter.

Ramularia rufomaculans Pk. On *Polygonum scandens.* St. Croix Falls. Not abundant on this host.

Ramularia aequivoca (Ces.) Sacc. On *Ranunculus septentrionalis.* St. Croix Falls.

Piricularia grisea (Cke.) Sacc. On *Setaria viridis.* Bridgeport.

Passalora fasciculata (C. & E.) Earle. On *Euphorbia serpyllifolia.* St. Croix Falls.

Cercosporà circumscissa Sacc. On *Prunus pennsylvanica.* Neopit.

Cercospora althaeina Sacc. On *Callirhoe triangulata.* Prairie du Chien and Grant County. The relationship to the form on *Althaea* is questionable. The conspicuous black-purple raised border of the spots in this collection give it a quite different appearance. I have labeled it var. *praecincta.*

Cercospora pentstemonis Ell. & Kell. On *Pentstemon grandiflorus.* Pepin.

Cercospora varia Pk. On *Viburnum acerifolium.* Devils Lake.

Uromyces acuminatus Arth. Aecia on *Steironema ciliatum.* Madison. But a scanty development on this host.

Uromyces proëminens (DC.) Lev. (*U. euphorbiae* of the provisional list). On *Euphorbia Geyeri* I, III, Pepin.

humistrata, III. Pepin.

heterophylla, III. Pepin.

The rust on the latter is *U. poinsettiae* Tranz. which is here considered a race.

Uromyces hyperici-frondosi (Schw.) Arth. Aecia, uredinia and telia on *Hypericum majus.* Devils Lake.

Puccinia andropogonis Schw. Aecia on *Pentstemon gracilis.* Millston.

Puccinia perminuta Arth. On *Agrostis perennans.* Alma.

Puccinia impatientis Arth. On Elymus canadensis glaucifolius. Maiden Rock.

Puccinia graminis Pers. Telia on *Calamagrostis canadensis.* Madison. (E. T. Bartholomew.)

Puccinia bolleyana Sacc. Aecia on *Sambucus racemosa.* Drummond. (L. S. Cheney)

Puccinia polygoni-amphibii Pers. Uredinia and telia on *Polygonum scandens.* St. Croix Falls. Uredinia on *Polygonum acre leptostachyum.* Madison.

Phragmidium disciflorum (Tode) James. (*Ph. americanum* (Pk.) Diet.) On *Rosa humilis.* Gaslyn and St. Croix Falls.

Pucciniastrum agrimoniae (Schw.) Tranz. Uredinia on *Agrimonia mollis.* Prescott and St. Croix Falls.

Uredinopsis atkinsonii Magn. Primary uredinia and telia on *Aspidium noveboracense*. St. Croix Falls.

In the provisional list no aecia on *Pinus* were recorded save an undetermined *Peridermium* on leaves of *Pinus Banksiana*. This was not because of the absence of such rust forms from the state, but because field work had not been done in the proper regions at the proper time to detect them. Since the list was prepared, however, some attention has been given them, the results of which it may be of interest to summarize.

The leaf *Peridermium* on *Pinus Banksiana* was collected in July 1907, near Gordon, Douglas County, and at Spooner, Washburn County. It is presumably connected with *Coleosporium* but has not been observed since. *Peridermium cerebrum* Pk. occurs throughout the range of *Pinus Banksiana* in the state and is quite abundant in some localities. Its effects are serious only when the infections are multiple or when it attacks the axis. The distribution of *Peridermium pyriforme* Pk. is also probably coextensive with the range of *Pinus Banksiana* in the state it having been collected in Jackson, Douglas and Vilas Counties, but it appears to be very sparsely distributed. In June, 1914, when special attention was given to it, no more than one specimen was collected in any locality. If this is connected with *Cronartium comandrae* Arth. it is not nearly so abundant or widespread as the telial form. *Peridermium comptoniae* Orton & Adams on the contrary, while it has been observed only in Douglas and Vilas Counties, occurs in considerable abundance both as to number of trees attacked and the extent of the outbreak on the individual tree. As I have seen it this usually occurs on the trunk near the base while *Peridermium pyriforme* Pk. I have seen only on branches. This is contrary to the statement of Arthur & Kern (*Mycologia 6*:132). Besides its native host, *Pinus Banksiana,* this rust attacked the young trees of *Pinus ponderosa* in the plantation of the Board of Forestry in Vilas County with severity; a severity due in large measure, doubtless, to the fact that the rust does not occur in the native habitat of this host and hence there has been no breeding out of susceptibility. Of the European *Peridermium fischeri* Kleb. which became thoroughly established on *Pinus sylvestris* in Door County, I have written elsewhere. It is hoped that with the destruction of the alternate host, *Sonchus,* this will disappear from

the state. On our more valuable species of pine, *Pinus Strobus* and *P. resinosa,* no rust has been observed in Wisconsin, and it is hoped that none will be introduced.

Filamentous processes from base to apex of the peridium occasionally occur in *Peridermium comptoniae* Orton & Adams.

Aecidium maianthae Schum. On *Maianthemum canadense.* Solon Springs. This is probably the aecial stage of the rust on *Phalaris arundinacea* that was recorded under the name *Puccinia sessilis* Schn. in the provisional list. While collecting it a single sorus, but a well developed one, was found on *Streptopus roseus.* Under similar circumstances I once found a single sorus on *Habenaria hyperborea.* Such occurrences seem significant as to the relation of the segregates from *Puccinia sessilis* Schn. This was erroneously given the name *Aecidium smilacinae* Schum. in the provisional list.

Aecidium ranunculacearum DC. In small quantity on *Ranunculus abortivus* at Solon Springs where it occurred abundantly on *Anemone quinquefoila.* The infection of the former host seems to be very exceptional.

ADDITIONAL SPECIES.

Not reported in the Wisconsin lists.

Uncinula parvula Cke. & Pk. On *Celtis occidentalis.* Madison.

Exoascus betulinus (Rostr.) Sadeb. On *Betula alba papyrifera.* Solon Springs. This was seen on but a single tree and confined to a single branch.

Exoascus communis Sadeb. On fruit of *Prunus cuneata.* Millston, Solon Springs and Boulder Junction. Abundant in the former locality in 1914. Exceptionally this attacks petioles and young leaves which are deformed thereby.

Taphrina flava Farl. On *Betula alba papyrifera.* Ellison Bay. I am indebted to Dr. Farlow for authentic material of this species for comparison. My notes of the Wisconsin collection were as follows: Affected areas subcircular, indefinite, yel-

lowish becoming brown below, light green above, about ½ cm. in diameter, sometimes confluent; asci hypophyllous, broad and truncate or somewhat rounded at base, obtusely rounded at apex, often more or less constricted in the middle, 30–36 x 18–26μ. No stalk cell is produced. The constriction of the asci appears to be caused by the pressure of the encircling edge of ruptured cuticle and to be greater when the asci are scattered.

Phyllosticta populina Sacc. On *Populus deltoides.* Prescott. The light grey spots are circular to subcircular with a narrow brown margin, 4–8mm. in diameter. It was associated with a *Septoria.*

In Ellis & Everhart's "The North American Phyllostictas" under *Phyllosticta grossulariae* Sacc. reference was made to Wisconsin material on *Ribes floridum* (= *R. americanum*) but it appears not to have been placed in my herbarium and was not recorded in the provisional list. I have found it on *Ribes vulgare* (cult.) at Fountain City accompanying *Cylindrosporium ribis* but mostly immature.

Phyllosticta crataegi (Cke.) Sacc. On *Crataegus.* Maiden Rock. This appears to be very close to what has been called *Phyllosticta destruens* Desm. on *Prunus virginiana* and *Amelanchier.*

Vermicularia liliacearum West. Specimens on leaves of *Streptopus roseus* appear to be parasitic as one might perhaps expect from the relation of this fungus to *Colletotrichum* by reason of its imperfect pycnidia. The sporules are narrow (3–4μ) in this collection.

Placosphaeria punctiformis (Fckl.) Sacc. On *Galium boreale.* Bridgeport. The spermogonial state of *Pseudopeziza repanda* (Fr.) Karst.

Ascochyta marginata n. sp. Spots circular to subcircular, 5–15 mm. in diameter, at first green becoming brown with a paler central portion and a darker periphery and a distinct narrow margin; pycnidia epiphyllous, scattered, pale brown, irregularly globose, about 100μ in diameter with a thin cellular wall and a dark ring around the pore; sporules hyaline, ovoid to oblong with rounded ends, some of them uniseptate, 6–12 x 2–3½μ.

On *Aralia nudicaulis.* Phlox, Wisconsin, July 11, 1914. The smaller and continuous sporules are probably immature but are in the majority in the material examined. There is evidence that the affected tissues fragment and fall away, for the most part probably, before the full maturity of the fungus.

A collection on leaves of cultivated *Phlox* made at Racine, Oct. 1, 1896, should probably be referred to *Septoria phlogis* Sacc. & Speg. The spots have no colored border; the epiphyllous pycnidia are delicate; the sporules range from 25–75 x 1–1½μ. Apparently the spots are brown and angular at first becoming white or sordid and more rounded in outline with maturity.

More or less of the distal portion of the leaves of *Carices* in Wisconsin are often observed to be dead and on examination scattered pycnidia are found. Specimens showing hyaline guttulate sporules 10–13 x 2½–3μ were referred to *Phyllosticta caricis* (Fckl.) Sacc. in the provisional list. Of a collection on *Carex sp. indet.* at Racine it was noted "sporules 10–13 x 3–5μ mostly becoming uniseptate; some of the sporules germinate without forming a septum." A collection from Gaslyn on *Carex pennsylvanica* bears 1–2 septate sporules 15–16 x 4μ; one from Spooner on *Carex intumescens* has biseptate sporules 16 x 4μ; one from Oakwood on *Carex sp. indet.* shows 1–2 septate sporules 12–18 x 4–5μ while in a collection on *Carex pennsylvanica* made at Neopit the sporules are 18–26 x 4–5μ, 3–4 septate. These seem to me to represent various degrees of maturity and development of a single fungus which is perhaps *Stagonospora caricinella* Brun. The Neopit collection bears also a *Septoria* having pycnidia about 100μ in diameter which contain sporules 37–55 x ½–1μ.

A specimen on *Carex retrorsa* collected at Athelstane agrees with the description of *Stagonospora paludosa* (Sacc. & Speg.) Sacc.

Septoria acerella Sacc. On *Acer Negundo.* Galesville. This agrees with the description given by Dr. Martin in "Septorias of North America". (Journ. Mycol. *3*:79.)

Septoria lophanthi Wint. On *Agastache scrophulariaefolia.* St. Croix Falls. In these specimens the sporules vary in length up to 80μ.

Septoria cylindrospora n. sp.

Pycnidia scattered, black, globose to lenticular with cellular walls, 125–200μ in diameter; sporules hyaline, cylindrical, straight or slightly curved, 18–30 x 2–3μ. On calyces, bracts, leaves, and upper part of stems (especially on the south side) of *Pedicularis canadensis.* Solon Springs, June 1914. Under iodine the sporules show a median division. I have not seen *Rhabdospora sceptri* Karst. of which this may be only a form differing in the straight cylindrical sporules. This might be referred to *Ascochyta.*

Septoria xanthiifolia Ell. & Kell. On *Iva xanthifolia.* Alma.

Phleospora celtidis Ell. & Mart. On *Celtis occidentalis.* Wyalusing. In this collection the sporules attain a length of 100μ or more and become 8 or more septate.

Gloeosporium trifolii Pk. On *Trifolium pratense.* Minocqua. Abundant at one station.

Colletotrichum graminicolum (Ces.) Wilson. On leaves of *Echinochloa crusgalli.* Devils Lake. Setae 50–100 x 5–6μ, sporules 16–24 x 3½–6μ. Collected also at Alma and Maiden Rock.

Colletotrichum sordidum n. sp.

Spots on the upper surface of the leaves varying from orbicular to irregular, light brown with a darker margin, 5–15 mm. in diameter to indefinite and more or less confluent into indefinite areas, cinereous above from loosened cuticle, on the lower leaf surface indefinite; acervuli epiphyllous, scattered, small, flat; sporules hyaline, cylindrical with rounded ends, straight, 21–33 x 6μ; setae dark brown to black, mostly incurved, 50–75 x 3–6μ with a septum near the base below which the seta is abruptly dilated. The affected portions of the leaves become quite friable. On *Menispermum canadense,* Wisconsin river bottom opposite Bridgeport, July 31, 1914. As there is a possibility that this may connect with *Gloeosporium sordidum* Speg. of South America I have used the same specific name.

Didymaria astragali (Ell. & Hol.) n. comb. Sacc. (*Ramularia astragali,* Ell. & Hol.) On leaves of *Astragalus canadensis.* St. Croix Falls.

Ramularia spiraeae Pk. On *Physocarpus opulifolius.* Maiden Rock. Also observed at Dresser Junction, but too late in the season to secure good specimens.

Ramularia ionophila n. sp.

Spots at first indefinite, green, angular, becoming suborbicular to irregular and more definite but not margined; conidiophores hypophyllous, hyaline, fasciculate from a more or less prominent stromatic base, straight or somewhat bent, continuous, 25–55 x 3–4μ; conidia hyaline, apical or subapical, cylindrical, straight, 1–3 septate, 18–45 x 3–4μ. On *Viola canadensis* Phlox, Wisconsin, July 1914. It may be that more knowledge of the Ramularias occurring on violets will bring together this and several other described species. The apex of the conidiophore frequently grows beyond the point where the conidium is borne.

Cercosporella scirpina n. sp.

On elongate brown areas which become confluent; conidiophores in small tufts disposed in long intervenular lines, hyaline, continuous, subulate to cylindrical, often bent and denticulate above, 15–22 x 4–7μ; conidia hyaline, straight or curved, obclavate- cylindrical, obscurely septate, 50–122 x 3μ. On leaves of *Scirpus pedicellatus.* St. Croix Falls, August 25th, 1914.

Cercosporella filiformis n. sp.

Spots linear, brown, immarginate, ½–4 cm. x 1–2 mm.; conidiophores amphigenous, fasciculate, hyaline, continuous, somewhat lax, 10–15 x 1–2μ; conidia apical, filiform, hyaline, more or less curved and lax, sometimes pseudoseptate, 30–75 x 1–2μ. On leaves of *Anemone patens* var. *Wolfgangiana.* Millston, Wisconsin, June, 1914.

Cercosporella trichophila n. sp.

Effused over indefinite areas on the lower surface of the leaves which are not discolored; mycelium hyaline, superficial, repent and ascending the trichomes; conidiophores racemose on the hyphae, hyaline, cylindrical to nodulose, straight, often oblique or denticulate at the apex, 10–15 x 3–5μ; conidia hyaline, obclavate-cylindrical, curved, pluriseptate, 45–75 x 3μ. On *Fraximus pennsylvanica.* Bridgeport, Wisconsin, August 1914. The conidiophores and conidia develop especially on the trichomicolous hy-

phae. The leaf surface becomes dotted with black, globose to hemispherical, sclerotioid bodies apparently connected with the same mycelium. Macroscopically this fungus suggests a young *Erysiphea*. Its systematic position is not clear.

CERCOSPORA CAMPTOSORI n. sp.

Spots subcircular to angular, pale brown becoming dark brown with age, immarginate, 3–7 mm. in diameter; conidiophores amphigenous, more or less fasciculate, brown, usually undulate, nodulose or bent, sometimes 1–2 septate, 18–57 x 3–4μ; conidia hyaline, obclavate-cylindrical to flagelliform, straight, 40–100 x 3μ. On *Camptosorus rhizophyllus*. Marquette State Park, Grant County, Wisconsin. August 1st, 1914. This differs from *Cercospora phyllitidis* Hume, as described, in the shorter conidiophores.

Cercospora muhlenbergiae Atk. On *Muhlenbergia sylvatica*. Kenosha County.

Cercospora comandrae Ell. & Dearn. On *Comandra umbellata*. Trempealeau. Curved and nodulose conidiophores are not infrequent.

Cercospora sanguinariae Pk. On *Sanguinaria canadensis*. Phlox.

CERCOSPORA ERYSIMI n. sp.

Spots pallid, subcircular, 3–5 mm.; conidiophores amphigenous, fasciculate, fuligineous, simple, straight or somewhat incurved, 30–55 x 3–4μ; conidia straight, obclavate, fuligenous tinted, about 5– septate, 45–75 x 3–4μ. On leaves of *Erysimum cheiranthoides*. Alma, Wisconsin, August 13th, 1914.

Cercospora condensata E. & K. On *Gleditsia triacanthos*. Marquette State Park near Wyalusing. Conidia up to 110μ in length were noted.

Cercospora negundinis Ell. & Evht. On *Acer Negundo*. Galesville and Alma. In this collection the conidia are hypophyllous; the conidiophores range to 40–50μ and the conidia to 150μ in length. As many as 9 septa have been observed in the latter. The conidiophores are mostly scattered or in twos and threes. Also collected in Grant County with amphigenous conidia and at Bridgeport.

Cercospora corni, n. sp.

Spots indefinite, pale brown, becoming mottled with purple especially above; conidiophores hypophyllous, scattered, erect or ascending, brown, septate, 25–40 x 5–7μ; conidia apical, obclavate, bright brown, strongly pluriseptate, 70–160 x 5–7μ. On leaves of *Cornus paniculata.* St. Croix Falls, Wisconsin, August 31st, 1914. The conidiophores sometimes spring from the arch of a superficial mycelium and are then shorter. The affected areas which are mostly ½–1 cm. in diameter finally become dark and dotted with small, black, globular, sclerotioid bodies which are perhaps young pycnidia or perithecia.

Cercospora arctostaphyli n. sp.

Spots circular, definite, sordid-arid with a narrow purple border, sometimes confluent, 2–5 mm.; conidiophores epiphyllous, springing mostly from small, dark tubercles, subhyaline, straight, erect, 7–15 x 3μ; conidia straight or slightly curved, acute, 30–50 x 1–1½μ. On *Arctostaphylos Uva-ursi.* Millston, Wisconsin, June, 1914.

Cercospora echinocystis Ell. & Mart. On *Echinocystis lobata* and *Sicyos angulatus.* Maiden Rock. In these specimens the conidiophores are scattered rather than fasciculate. Conidia up to 185 x 4μ were measured.

Cercospora effusa (B. & C.) Ell. & Evht. (?). On *Lobelia siphilitica.* Alma. In this collection the lax, nodulose, tortuous, septate conidiophores are 75–150μ long; the conidia 30–45μ long, triseptate, becoming brown and constricted at the septa when old. *Cladosporium effusum* B. & C. was said to occur on *Polygonum punctatum, Lobelia puberula* and *L. siphilitica* and *Nabalus altissimus* but Berkeley stated that he had seen conidia only on *Polygonum* and that they are curved which is not true of the fungus referred to here. On *Fungi Columbiani 2505* (on *Lobelia inflata*) I find conidia like those in the Wisconsin collection and also a few slender obclavate ones nearly 100μ long. That the latter were borne on the conidiophores I cannot say. The *Fungi Columbiani* specimen examined appears to bear a parasite producing small rod-like sporules in pycnidia. The conidiophores of the Wisconsin collection give off a few branches at or near a right angle.

Cercospora ageratoides Ell. & Evht. On *Eupatorium urticaefolium.* Galesville. In this collection the tufts are scattered over indefinite, but slightly discolored, spots.

Cercospora grindeliae Ell. & Evht. On *Grindelia squarrosa.* St. Croix Falls.

Cercospora absinthii (Pk.) Sacc. I am using this name to record the occurrence of a Dematiaceous fungus on leaves of *Artemisia ludoviciana* at St. Croix Falls regarding which the following notes were made: conidiophores amphigenous, scattered or in tufts of 2–6, more or less flexuous, pluriseptate, brown or olivaceous, 90–160 x 4–7μ; conidia apical, obclavate to obclavate-cylindrical, fuligineous tinted, developing about 4 septa, 30–50 x 4–6μ. The affected leaves show at first brown spots which become confluent into brown areas. The scattered distribution of the conidiophores and the wooliness of the leaves make this quite inconspicuous.

Uromyces astragali (Opiz) Sacc. I am using this name for the purpose of recording the occurrence of uredinia on *Astragalus canadensis* at St. Croix Falls. That this American rust is conspecific with the European one having its accia on *Euphorbia Cyparissias* is questionable. The Sydows in *Monographia Uredinearum* state that it is not while Arthur in *North American Flora* refers it to that species under the synonym *Nigredo pustula* (Schroet.) Arth. (*Uromyces pustulatus* Schroet.) together with the *Uredo* on *Oxytropis* that has been known as *Uredo oxytropidis* (Pk.) De Toni. The statement of the Sydows that the uredospores on *Astragalus* in North America have 6–8 germ pores is not borne out by this material in which the pores are 3–4.

Aecidium lupini Pk. On *Lupinus perennis.* Millston. I am indebted to Dr. J. C. Arthur for the determination. In the 4th supplementary list mention was made of the occurrence of *Tuberculina persicina* (Ditm.) Sacc. on *Lupinus perennis* as evidence that the host bears an *Aecidium* in Wisconsin which however was not collected until 1914.

Aecidium liatridis Ell. & And. On *Liatris scariosa.* Solon Springs.

University of Wisconsin Herbarium, Madison, Wisconsin, April, 1915.

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