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Preliminary List of the Parasitic Fungi of Fayette County, Iowa

Guy West Wilson

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PRELIMINARY LIST OF THE PARASITIC FUNGI OF FAYETTE
COUNTY, IOWA.

BY GUY WEST WILSON.

That northeastern Iowa is a rich field for the mycologist is well known to those in any degree acquainted with the work of Prof. Holway while a resident of Decorah. From this region came numerous new species and here was gathered much information concerning others already known. While from its nearness to Decorah the region about Fayette cannot offer such facilities for pioneer work as did Decorah, yet it is a most excellent base from which to study the mycological flora of this section of Iowa. Lying as it does on the borderland between the Transitional and Upper Austral zones and midway between the plains of the west and the forests of the east this section of the state is a strategic point, so to speak. It was, therefore, with no small pleasure that I looked forward to my field work in this region. The results have far exceeded my expectations.

The region is a rolling prairie, traversed here and there by streams, chief of which are the Turkey and the Wapsipinnicon rivers with their tributaries. About four-fifths of the county is drained by the former, which crosses it in the northern part. The central portion of the county is drained by the Volga river, a tributary of the Turkey. The southern border and southwestern corner of the county are drained by the Wapsipinnicon. These streams are skirted by more or less pronounced belts of timber. There is, consequently, a great diversity of the soil and shade factors which influence the development of the flora of the region, the lower as well as the higher plants.

The greater part of the field work was confined to the region about Fayette, but a short trip was made to Dover township, and a few species were collected near Oelwein. The time employed was the autumn of 1907, the spring and autumn of 1908, and the season of 1909. The present list contains all the species which have been determined up to the present time, but a considerable bulk of unidentified material has also accumulated. The number of species here recorded is two hundred and forty-five—but twenty-three less than the total of Dr. Trelease list of

Wisconsin species, and within sixteen of the number recorded by Dr. Underwood for Indiana.*

The only previous publications devoted to the parasite fungi of Fayette county are two papers by Dr. Bruce Fink* in which he enumerates the *Erysiphaceae* collected by him: According to the arrangement followed by Salmon and adopted by Anderson† the total number of forms was twenty-one infecting fifty-four hosts. The larger part of these were recollected and additions made to the list. The hosts common to both my own and Dr. Fink's collections have been marked with a star (*) while those species which were not recollected are included without a serial number and the additional hosts given in the notes under the various species.

While consistency has not been attempted in the matter of nomenclature the species are named in accordance with the later available literature of the various groups. The *Erysiphaceae* follow Anderson's paper in the use of Salmon's classification, although some of his conclusions do not appeal to me as satisfactory disposition of certain forms. The order *Moniliales* is treated in accordance with Pound and Clement's "Rearrangement of the North American Hyphomycetes."* This eliminates *Dematiaceae* from consideration, placing all the forms usually considered as belonging to this family in *Moniliaceae*. The families differ only in color, a character which has been shown to be a matter of nutrition more than an inherent character of taxonomic importance. This arrangement brings the closely related genera *Didymium*, *Ramularia*, and *Cercospora* in close proximity and eliminates *Cercosporella* for the light colored species of *Cercospora*. The *Uredinales* follow the classification of Dr. Arthur's monograph‡ in so far as it is available. This causes a division of certain genera of the *Melampsoraceae* and the removal from *Puccinia* and *Uromyces* of certain species which show a closer relationship with *Ravenelia*. The nomenclature of hosts is that of the seventh edition of Gray's Manual, with citations in the several instances of such names as are not the same in Britton's Manual. Under each species are given such notes on appearance, frequency, and abundance as might be of interest to mycologists, or of assistance to the student who is interested

*Trelease, Trans. Wis. Acad. 6: (1-40). 1884. (268 species.)

Underwood Proc. Indiana Acad. Sci. 1893:30-67. 1894. (261 species of parasitic Fungi.)

*Blights, Orchids, and Ferns of Fayette, Iowa. Bull. Upper Iowa Univ., Jan. 1894. Additions to Iowa Flora Proc. Iowa Acad. Sci. 14:103, 104. 1893.

†Proc. Iowa Acad. Sci. 14:15-46. 1907.

*Minn. Bot. Studies 1:644-673, 726-738. 1896-97.

‡North American Flora. 7:83-169. 1907.

in these forms. At the conclusion of the list is a host index, which includes cross references to the synonymy of the hosts. Such synonyms have been cited for the species as the name employed might make necessary, and where the name employed by Greene in his "Plants of Iowa" is not the same.

In conclusion I wish to express my hearty appreciation of the kindness of Dr. J. C. Arthur in verifying my determination of the Uredinales, and for suggestions in this group.

CLASS PHYCOMCETES.

ORDER CHYTRIDIALES.

Family Synchytriaceae.

1. SYNCHYTRIUM AECIDIIOIDES (Peck) Wilson & Seaver. [*Uredo aecidioides* Peck; *S. fulgens decipiens* Farlow.]

On *Amphicarpa monoica* (L.) Ell. and *A. Pitcheri* T. & G. (Falcata Kuntze.)

Our commonest species of the genus. The yellow sori which are borne in great profusion on leaves, stems, and immature fruits of the host renders the infected plants quite conspicuous. Very abundant upon the first host, but sparingly on the second.

2. SYNCHYTRIUM ANEMONES (de Bary & Woronin) Woronin.

On *Anemone quinquefolia* L.

The purple sori of this species are quite abundant on stems and leaves, especially along the veins. This host is infested with several fungi two or three of which frequently are associated, in the present instance the commonest one being *Urocystis anemones*. The epidermal covering of the smut serus is frequently covered with an abundance of the galls of the *Synchytrium*.

3. SYNCHYTRIUM FULGENS. Schröeter.

On *Oenothera biennis* L. (Onagra Scop.)

A single rosette was found infected with this fungus late in May.

4. SYNCHYTRIUM HOLWAYI Farlow.

On *Monarda fistulosa* L.

A conspicuous species owing to the stunting and slight hypertrophy of the host and the bright purple color of the galls. First noted about the middle of July.

ORDER ENTOMOPHTHORALES.

Family Entomophthoraceae.

5. ENTOMOPHTHORA MUSCAE. (Pers.) Fries.

On *Musca domestica* L.

The cause of a considerable mortality among house flies in the late autumn.

ORDER PERONOSPORALES.

Family Albuginaceae.

6. ALBUGO BLITI (Biv.) Kuntze. [*Cystopus Bliti* (Biv.) de Bary.]

On *Amaranthus graecizans* L. and *A. retroflexus* L.

7. ALBUGO CANDIDA (Pers.) Roussel.

On *Brassica nigra* (L.) Koch, *Lepidium apetalum* Willd., and *Radicula palustris* (L.) Moench. (Roripa Bess.)

The commonest of our white rusts.

8. ALBUGO PORTULACAE (DC.) Kuntze.

On *Portulaca oleracea* L.

Common throughout the growing season.

9. ALBUGO TRAGOPOGONIS (DC.) S. F. Gray [*Cystopus cubicus* Lev.]

On *Ambrosia artemisiaefolia* L.

A widespread and variable species with numerous hosts, but locally neither common nor abundant.

Family Peronosporaceae.

10. SOLEROSPORA GRAMINICOLA (Sacc.) Schröter. [*Peronospora graminicola* Schröter.]

On *Setaria glauca* (L.) Beauv. and *S. viridis* (L.) Beauv. [*Chaetochloa* sps. Scribn.]

Not abundant, the oospores being found sparingly in the autumn.

11. RHYSOTHECA AUSTRALIS (Speg.) G. W. Wilson [*Peronospora australis* Speg.]

On *Echinocystis lobata* (Michx.) T. & G. (*Micrampelis* Greene.)

A single infected vine was found in Dover Township late in August.

12. RHYSOTHECA GERANII (Peck) G. W. Wilson [*Peronospora Geranii* Peck.]

On *Geranium maculatum* L.

About half a dozen infected leaves found in early summer.

13. RHYSOTHECA HALSTEDII (Farlow) G. W. Wilson [*Peronospora Halstedii* Farlow, *Plasmopara Halstedii* Berl. & De-Toni.]

On *Ambrosia artemisiaefolia* L., *A. trifida* L., *Bidens comosa* (A. Gray) Wiegand, *B. frondosa* L., *Eupatorium purpureum* L., *Helianthus doronicoides* Lam., and *Lepachys pinnata* (Vent.) T. & G. (*Ratbida* Barnhart.)

A common and variable species with a very wide range of hosts.

14. RHYSOTHECA ABDUCENS (Schröter) G. W. Wilson. [*Peronospora obducens* Schröter.]

On *Impatiens biflora* Walt.

Found sparingly once in midsummer.

15. RHYSOTHECA VITICOLA (B. & C.) G. W. Wilson. [*Peronospora viticola* de Bary, *Plasmopara viticola* Berl. & De-Toni.]

On *Vitise vulpina* L.

Probably the most abundant species of the genus, growing especially luxuriantly on the common wild grape, all the green parts of which are affected. Upright shoots, much enlarge and bearing smaller fleshy leaves, both leaf and shoot densely covered with the fungus are not uncommon on trailing vines.

16. PLASMOPARA PYGMAEA (Unger) Schröeter. [*Peronospora pygmaea* Unger.]

On *Anemone canadensis* L., *A. caroliniana* Walt., *A. quinquefolia* L., and *Hepatica acutiloba* DC. (*H. acuta* Britt.)

Very abundant from early spring to midsummer, often associated with other fungi on *Anemone quinquefolia*.

17. PERONOSPORA ALTA Fuckel.

On *Plantago major* L.

Not abundant, appearing in midsummer.

18. PERONOSPORA ARTHRI Farlow.

On *Oenothera biennis* L. (*Onagra* Scop.)

First seen July 16, 1909, and abundant from then until frost. Practically every leaf of many fully developed plants were severely infected throughout the region about Fayette, but no infected rosetts were seen.

19. PERONOSPORA CALOTHECA de Bary.

On *Galium boreale* L.

So far as observed this species was confined to a few clumps of the host which grew in the open along the railroad, but in these localities the species was quite abundant in the early summer.

20. PERONOSPORA CHENOPODII Schlecht.

On *Chenopodium album* L., and *C. hybridum* L.

Not uncommon throughout the later summer. The present species has been confused with *P. effusa* from which it is quite distinct. The relationship of these species has been discussed elsewhere so that it is unnecessary to enter into details here.

21. PERONOSPORA ECHINOSPERMI Swingle.

On *Lappula virginiana* (L.) Greene.

While searching in early October for the perithecia of a powdery mildew two leaves were found infected with the present species. The collection is of more than ordinary interest as this is the most eastern station for the species, not to mention the fact that it has heretofore been collected only on narrow leaved hosts of the type of *L. Redowskiana*.

22. PERONOSPORA EFFUSA (Grev.) Rabenh.

On *Chenopodium album* L.

Abundant throughout the summer and autumn months.

23. PERONOSPORA EUPHORBIAE Fuckel.

On *Euphorbia maculata* L.

Common throughout the summer, causing a more erect habit in the host, but not having such a pronounced effect as the aecia of *Uromyces Euphorbiae*.

24. PERONOSPORA HYDROPHYLLI Waite.

On *Hydrophyllum virginicum* L.

A single collection was made June 11, 1908, the infection covering only a few leaves and not being abundant on these.

25. PERONOSPORA PARASITICA (Pers.) de Bary.

On *Dentaria laciniata* Muhl., *Draba caroliniana* Walt., *Erysimum parviflora* Nutt., and *Lepidium apetalum* Willd.

Common and rather abundant, probably infesting a still greater number of hosts as it is to be looked for on almost every species of crucifer.

26. PERONOSPORA POTENTILLAE de Bary

On *Agrimonia mollis* (T. & G.) Britton, *Geum canadense* Jacq. and *Potentilla monsepalensis* L.

Rather rare through the entire season.

27. PERONOSPORA SORDIDA Berk. & Br.

On *Scrophularia marylandica* L.

Not common, but where found rather abundant. Spring and early summer.

28. PERONOSPORA TRIFOLIORUM de Bary.

On *Astragalus canadensis* L. (*A. carolinianus* L.)

Rather abundant in early summer.

29. PERONOSPORA VICIAE (Berk.) de Bary.

On *Vicia americana* L.

Rather frequent during the early summer.

30. BREMLIA LACTUCAE Regel. [*Peronospora gangliiformis* de Bary.]

On *Lactuca canadensis* L.

Neither common nor abundant. Midsummer.

CLASS ASCOMYCETES.

ORDER EXOASCALES.

Family Exoascaceae.

31. EXOASCUS PRUNI Fuckel.

On *Prunus americana* Marsh.

Not uncommon on wild plums causing the distorted fruits known as plum pockets.

32. TAPHIRIA COERULESCENS (Mont. & Desm.) Schroeter.

On *Quercus rubra* L., and *Q. palustris* Moench.

Abundant in spring and early summer, causing yellowish or somewhat water-soaked blisters on the leaves of the oak.

33. *TAPHRIA JOHANSONII* Sadeb.

On *Populus tremuloides* Michx.

Common on the immature aments of the aspen, causing a thickening of the capsule which is a very conspicuous object owing to the bright yellow color of the diseased tissue.

34. *TAPHRIA VIRGINICA* Sadeb. & Seym.

On *Ostrya virginiana* (Mill.) K. Koch.

Causing a very conspicuous hypertrophy of the leaves of the host. Early summer.

ORDER PERISPORIALES.

Family *Erysiphaceae*.35. *SPHAEROTHECA HUMULI* (DC.) Burrill.

On *Agrimonia gryposepala* Willd. (*A. hirsuta* Bicknell), and *Rhus glabra* L.

Not a common species, and not abundant on the hosts upon which it was collected. Reported by Fink on *Epilobium coloratum* Muhl.

36. *SPHAEROTHECA HUMULI FULGINEA* (Schlecht.) Salmon.

On *Erechtites hieracifolia* (L.) Raf., **Erigeron canadensis* L. (*Leptilon canadense* Britton), *Taraxicum officinale* Weber (T. *Taraxicum* Karst.), and *Veronica virginica* L. (*Leptandra* Nutt.)

Not uncommon on various weeds. Also reported by Fink on *Bidens frondosa* L., and *Sonchus oleraceus* L.

SPHAEROTHECA PANNOSA (Wallr.) Lev.

Reported by Fink on *Rosa blanda* Ait.

SPHAEROTHECA MORS-UVAE (Schw.) B. & C.

Reported by Fink on *Ribes cynosbati* L. and *R. rotundifolium* Michx. Conidia collected on *R. floridum* L'Her during the past summer may belong here.

37. *PODOSPHAERA ONYCANTHIAE* (DC.) de Bary.

On *Prunus americana* Marsh., and *P. avium* L.

Not uncommon on species of plum and cherry. Reported by Fink on an unidentified species of *Prunus*.

38. *PODOSPHAERA LEUCOTRICHIA* (E. & E.) Salmon.

On *Pyrus Malus* L. (*Malus Malus* Britton.)

Collected once on seedlings.

39. *ERYSIPHE POLOGONI* DC.

On *Polygonum aviculare* L., *P. erectum* L., and *Ranunculus abortivus* L.

Abundant on various herbaceous plants. Reported by Fink on *Astragalus canadensis* L. (*A. caroliniana* L.), and *Oenothera biennis* L. (*Onagra* Scop.)

40. *ERYSIPHE CICHORACEARUM* DC.

On **Ambrosia artemisiaefolia* L., **A. trifida* L., *Aster cordifolius* L., *A. puniceus* L., *A. salicifolius* Ait., *Cirsium discolor* (Muhl.) Spreng (*Carduus* Nutt.) *Eupatorium urticaefolium* Reichard (*E. ageratoides* L. f.), *Helianthus*

doronicoides Lam., *Heliopsis scabra* Dunal, *Parietaria pennsylvanica* Muhl., *Plantago major* L., *P. Rugelii* Decn., **Verbena bracteosa* Michx., **V. hastata* L., *V. stricta* Vent., **V. urticaefolia* L.

Our commonest species of the family, infecting a wide range of herbaceous hosts and consequently showing considerable variability. Reported by Fink on *Ambrosia psilostachya* DC., *Aster laevis* L., *Aster sagitufolius* Willd., *Aster* sp. indet., *Helianthus annuus* L., *Phlox Drummondii* Hook., *Solidago canadensis* L., *S. rigida* L., and *S. serotina gigantea* (Ait.) A. Gray.

41. ERYSIPIHE GALEOPSISIDIS DC.

Conidia on *Mentha canadensis* L., and *Stachys palustris* L. are referred here. Reported by Fink on *Scutellaria lateriflora* L.

42. ERYSIPIHE GRAMINIS DC.

On *Poa pratensis* L.

Not uncommon, especially the conidia. Reported by Fink on *Cinna arundinacea* L.

43. MICROSPHAERA ALNI (Wallr.) Winter.

On *Cornus alternifolia* L. f., **Corylus americana* L., **Lonicera Sullivantii* A. Gray, *L. tartarica* L., *Ostrya virginica* (Mill.) Willd., *Quercus velutina* Lam., **Syringa vulgaris* L., and *Viburnum lentago* L.

Common and usually abundant on a number of woody plants and quite variable, both in habit and character. Even upon the same host the myceliom may remain very conspicuous after the perithecia are mature or it may disappear completely. Reported by Fink on the following additional hosts: *Carpinus caroliniana* Walt., *Eonymous atropurpureus* Jacq., and *Ulmus americana* L.

44. MICROSPHAERA ALNI EXTENSA (Cooke & Peck) Salmon.

On **Quercus alba* L., and *Q. velutina* Lam.

Common on sprouts but not seen on full grown trees. Reported by Fink on *Q. rubra* L.

MICROSPHAERA GROSSULARIAE (Wallr.) Lev.

Reported by Fink on *Sambucus canadensis*.

45. MICROSPHAERA DIFFUSA Cooke & Peck.

On *Desmodium sessilifolium* (Torr.) T. & G. (*Meibomia sessilifolia* Kuntze). A single collection in Dover Township.

46. MICROSPHAERA RUSSELLII Clinton.

On **Oxalis stricta* L.

Not uncommon.

MICROSPHAERA EUPHORBIAE (Peck) Cooke & Peck.

Reported by Fink on *Euphorbia corollata* L.

47. UNCINULA SALICIS (DC.) Winter.

On *Salix humilis* Marsh.

Very abundant. Also reported by Fink on an unidentified species of *Salix*.

48. *UNCINULA NECATOR* (Schwein.) Burrill.

On *Pseodera quinquefolia* (L.) Greene (Parthenocissus Planch.), and *Vitis vulpina* L.

Rather common. Reported by Fink on *Vitis cordifolia* Michx. and an unidentified species of *Vitis*.

UNCINULA CIRCINATA Cooke & Peck.

Reported by Fink on *Acer saccharum* Marsh.

49. *UNCINULA MACROSPORA* Peck.

On **Ulmus americana* L.

Collected but once and then not over abundant.

UNCINULA CLINTONI Peck.

Reported by Fink on *Tilia americana* L.

50. *PHYLLACTINIA CORYLEA* (Pers.) Karst.

On *Fraxinus americana* L., and **Cornus stolonifera* Michx. (leg. Hungerford. *Xanthoxylum americanum* Mill (leg. Hungerford.)

While the collections of this species were rather scanty it appears to be rather a common species judging by Fink's long list of additional hosts which follow: *Acer saccharum* Marsh., *Betula papyrifera* Marsh., *Cornus florida* L., *Corylus americana* L., *Crataegus* sp. indet., *Fraxinus* sp. indet., *Desmodium grandiflore* (Walt.) DC. (*Meibomia grandiflora* Kuntze), and *Ulmus americana* L.

Family *Perisporiaceae*.51. *DIMEROSPORIUM COLLINSHI* (Schw.) Thumen.

On *Amelanchier canadensis* (L.) Medic.

The entire under surface of the leaves is covered with the black perithecia. The fungus appears to be quite injurious to its host as it causes a pronounced falling of the leaves in late summer and early autumn. That the mycelium is perennial is indicated by the changed appearance of the infected twigs which grow quite luxuriantly, are thicker and brighter colored than the healthy twigs, besides showing a decided tendency in favor of forming witches brooms.

52. *DIMEROSPORIUM PULCIRUM* Sacc.

On *Cornus paniculata* L'Her.

Common in late summer.

ORDER HYPOCREALES.

Family *Hypocreaceae*.53. *HYPOMYCES LACTIFLORUM* (Schwein.) Tul.

On some species of *Agaricaceae*, probably *Lactaria*.

One collection of some half dozen infected plants was made in late summer.

54. *HYPOMYCES POLYPORINUS* Peck.

On *Coriulus versicolor* (L.) Quel. (*Polystictus* Fries.)

Found once in some abundance in the early spring, probably of the previous year's growth. According to Seaver* this species is known only from New

*Mycologia 2:78. 1910.

Jersey, New York, North Dakota, and some Canadian station. Probably of wide distribution.

55. CLAVICEPS PURPUREA (Fries) Tul.

On *Agropyron repens* (L.) Beauv. V.

Sclerotia were found rather abundantly, but were not germinated so the reference is only provisional.

ORDER DOTHIIDIALES.

Family *Dothideaceae*.

56. PHYLLACHORA GRAMINIS (Pers.) Fuckel.

On *Hystrix patula* Moench (H. *Hystrix* Millsp.) *Bouteloua curtipendula* (Michx.) Torr., (*Atheropogon curtipendulus* Fourn), and *Sorghastrum nutans* (L.) Nash (*S. avenaceum* Nash).

Very common.

57. PHYLLACHORA JUNCI Fuckel.

On *Juncus interior* Wiegand.

Rather abundant in late summer.

58. PHYLLACHORA LESPEDIZAE (Schw.) Sacc.

On *Lespediza capitata* Michx.

Not uncommon.

59. PLOWRIGIITIA MORBOSA (Schwein.) Sacc.

On *Prunus americana* Marsh. and *P. virginiana* L.

So far as personal observation goes this species which causes the "Black knot" of drupaceous fruits is confined to the wild members of the genus *Prunus*. Upon the choke cherry this disease is very abundant and if infection is possible from this host then the abundance of choke cherries in this region is a serious menace to our orchards.

ORDER SPHAERIALES.

Family *Sphaeriaceae*.

60. VENTURIA POMI (Fries) Winter. [*Fusicladium dendriticum* (Wallr.) Fuckel.]

On *Pyrus iowensis* (Wood) Bailey (*Malus Britton*.)

The common apple scab is the conidial stage of this species. Not seen on the cultivated apple, but abundant on the wild crab.

Family *Mycosphaerellaceae*.

61. GUIGNARDIA BIDWELLI (Ellis) Vala & Ravaz. [*Laestadia Bidwellii* (Ellis) Sacc., *Phyllosticta viticola* Thum., *P. ampelopsidis* Ellis & Martin].

On *Psedera quinquefolia* (L.) Greene (*Parthenocissus* Planch.), *P. quinquefolia hirsuta* (Donn) Rehder, and *vitis vulpina* L.

The black rot of the grape. Abundant on leaves and fruits of the wild grape and on the leaves of the Virginia creeper, being a most destructive pest to both.

62. MYCOSPHAERELLA FRAGARIAE (Tul.) Lindau. [*Sphaeriella Fragariae* (Tul.) Sacc., *Ramularia Fragariae* Peck.].

On *Fragaria virginica* Duchesne, and *F. americana* Britton.

The strawberry rust. Very abundant on the first host named but rare on the last one. Only the conidia were seen.

ORDER PHACIDIALES.

Family Phacidiaaceae.

63. RHYTISMA ACERINUM (Pers.) Fries.

On *Acer saccharinum* L.

The "tar spot" disease of maples was rather abundant throughout the county during the past season.

64. RHYTISMA SALICINUM (Pers.) Fries.

On *Salix lucida* Muhl.

Found once in fair abundance.

65. RHYTISMA SOLIDAGINIS Schwein.

On *Aster cordifolius* L., *Solidago graminifolia* (L.) Salisb. (*Euthamnia* Millsp.) and *S. latifolia* L. (*S. flexicaulis* L.).

The exact nature of this species is in doubt, for while it is known that an insect gall always forms a part of the spot there are always fungous hyphae present, but so far no spores have been observed.

ORDER PEZIZALES.

Family Helotiaceae.

66. SCLEROTINIA FRUCTIGENA (Pers.) Schroeter. [*Monilia fructigena* pers.]

On fruits of *Prunus americana* Marsh.

The common brown rot of stone fruits, which is very destructive to certain races of both wild and cultivated plums and cherries.

67. SCLEROTINIA TUBEROSA (Hedw.) Fuckel.

On *Anemone quinquefolia* L.

A single small clump of this species has been collected. The subterranean sclerotia are attached to the rhizomes of the wood anemone. In some localities the fungus is abundant enough to be quite destructive.

Family Mollisiaceae.

68. MOLLISIA DEHNII (Rabenh.) Karst.

On *Potentilla monsepalsensis* L.

Abundant on stems, leaves, and leaf veins of the host in early summer.

CLASS DEUTEROMYCETES.

ORDER PHOMATALES.

Family Phomataceae.

69. PHYLLOSTICTA APOCYNI Trel.

On *Apocynum androsaemifolium* L.

Not common, midsummer.

70. PHYLLOSTICTA COROLI West.

On *Corylus americana* L.

A fairly common but not over abundant leaf spot. Probably the present species, as is the case in certain other members of the genus, is associated with a leaf miner or some other insect.

71. PHYLLOSTICTA DECIDUA Ellis & Kellerm.

On *Lycopus rubellus* Moench., and *Mentha canadensis* L.

Quite common and often resembling, at least to the casual observer, the work of insects.

72. PHYLLOSTICTA DISCINCTA J. J. Davis.

On *Uvularia grandiflora* J. E. Smith.

Only a few leaves were found infected with this recently described species.

73. PHYLLOSTICTA FATICENS Peck.

On *Nymphaea advena* Ait.

Not uncommon, but in no wise an abundant species. Midsummer.

74. PHYLLOSTICTA GENTIANICOLA (DC.) Ellis & Everh.

On *Gentiana Andrewsii* Griseb.

A conspicuous, but rather uncommon species which appears in early summer.

• 75. PHYLLOSTICTA GROSSULARIAE Sacc.

On *Ribes gracile* Michx.

Very common and abundant in midsummer and autumn. Some bushes were completely defoliated by the middle of August.

76. PHYLLOSTICTA MELALEUCA Ellis & Everh.

On *Ulmus americana* L.

Not rare on sprouts of elm, appearing first in midsummer.

77. PHYLLOSTICTA RUDBECKIAE Ellis & Everh.

On *Rudbeckia laciniata* L.

Common and abundant on the wild plants by the first of August and continuing till frost. The variety under cultivation appears to be free from the fungus.

78. PHYLLOSTICTA VIOLAE Desm.

On *Viola* sp.

Common on the blue violet of the region.

79. AMPELOMYCES QUISQUALIS Cesati.

On *Erysiphe cichoracearum* DC. on *Aster* sp., *Verbena stricta* Vent., and *V. urticifolia* L.

On *Podosphaera Oxyanthae* (DC.) de Bary on *Prunus americana* Marsh.

Very common on the mycelium of various species of *Erysiphaceae* but not collected except as above. Probably every species of the family could be added to the list of hosts for this interesting species.

80. *Ascochyta Oxybaphi* Trel.

On *oxybaphus nyctagineus* (Michx.) Sweet (*Allonia nyctaginea*) Michx.

Rather common but neither abundant nor conspicuous.

81. ASCOCHYTA VIOLAE Sacc. & Speg.

On *Viola pubescens* Ait.

Not uncommon in midsummer.

82. DULARCIA FILUM (Riv.) Cast.

On *Puccinia Asparagi* (DC.), on *Asparagus officinalis* L., *Metampsora Bigelowii* Thum., on *Salix fluviatilis* Nutt., *M. Medusae* Thum., on *Populus deltoides* Marsh., *Uromyces Silphii* (Burr.) Arth. on *Juncus interior* Weigand.

Common and abundant on the uredinia and to a less extent on the telia of various species of rusts.

83. SEPTORIA AGRIMONIA Roum.

On *Agrimonia mollis* (T. & G.) Britton.

Rather common on stunted plants in July and August.

84. SEPTORIA CRYPTOTAENIAE Ellis & Ever.

On *Asclepias incarnata* L., and *A. syriaca* L.

Rather plentiful and quite conspicuous during the later summer and early autumn.

85. SEPTORIA ATROPURPUREA Peck.

On *Aster cordifolius* L.

The reddish brown discoloration render this a very conspicuous species, although it was not very abundant during the past season.

86. SEPTORIA CAMPANULAE (Lev.) Ellis.

On *Campanula americana* L.

Common and abundant during late summer. The peculiar seared appearance of the leaves renders this a rather conspicuous species.

87. SEPTORIA CANNABINA West.

On *Cannabis sativa* L.

Abundant on hemp from late July to frost, producing spores freely although sometimes said to fruit sparingly.

88. SEPTORIA CONSPICUA Ellis & Mart.

On *Steironema ciliatum* (L.) Raf.

Rather scarce, appearing in early summer.

89. SEPTORIA CORNICOLA Desm.
 On *Cornus alternifolia* L. f.
 Found very sparingly during the last of July.
90. SEPTORIA CRYPTOTAENIAE Ellis & Rav.
 On *Cryptotaenia canadensis* (L.) DC. (Doeringia Kuntze).
 Common throughout the early summer, sometimes almost covering the entire leaf.
91. SEPTORIA CACCALIAE Desm.
 On *Cacalia reniformis* Muhl. (Masadenia Raf.)
 Fairly common during the flowering season of the host.
92. SEPTORIA DIERVILLAE Ellis & Everh.
 On *Diervilla Lonicera* Mill. (D. Diervilla MacM.)
 Not abundant, seen only on July 30, 1909.
93. SEPTORIA ERIGERONTIS Peck.
 On *Erigeron annuus* (L.) Pers., and *E. ramosus* (Walt.) BSP.
 Common and abundant on both hosts, especially the former.
94. SEPTORIA LACTUCIOLA Ellis & Everh.
 On *Lactuca canadensis* L., and *L. hirsuta* Muhl.
 Common but not abundant during midsummer.
95. SEPTORIA LEPTOSTACHYA Ellis & Everh.
 On *Phryma Leptostachya* L.
 Common during the summer and rather conspicuous.
96. SEPTORIA MALVICOLA Ellis & Mart.
 On *Malva rotundifolia* L.
 Rather common and plentiful during the summer months.
97. SEPTORIA OCLATA Ellis & Kell.
 On *Vernonia altissima* Nutt. (V. maxim Small).
 Rather abundant during late summer.
98. SEPTORIA OENOTHERAE B. & C.
 On *Oenothera biennis* L. (Onagra Seop.).
 One of the commonest and most abundant species of the genus, hardly a plant of the host escaping the ravages of the fungus.
99. SEPTORIA PARIETARIAE J. J. Davis.
 On *Parietaria pennsylvanica* L.
 Common and rather abundant in some patches of the host and less plentiful in others. The infection resembles that of *S. Campanulae* quite closely.
100. SEPTORIA PODOPHYLLINA Peck.
 On *Podophyllum peltatum* L.
 Common on the languishing leaves of the host, and easily overlooked on account of the lack of definite spots and the resemblance of the infection to dying leaves.

101. SEPTORIA PRENANTHIS Ellis & Everh.

On *Prenanthes alba* L. (*Nabalus albus* Hook.)

Not abundant.

102. SEPTORIA RUBI Westend.

On *Rubus occidentalis* L.

Of exceptional occurrence during the past season but probably abundant both on wild and cultivated berries. This is frequently a very destructive pest.

103. SEPTORIA SCROPHULARIAE Peck.

On *Scrophularia marylandica* L.

Common and abundant throughout the summer.

104. SEPTORIA SCUTELLARIAE Thuem.

On *Scutellaria lateriflora* L.

Only seen once during the past season, apparently not an abundant species.

105. SEPTORIA SILENES Westd.

On *Silene stellata* (L.) Ait.f.

A single station noted, but here the infection was abundant, scarcely a full grown leaf remaining healthy.

106. SEPTORIA SMILICANAE Ellis & Mart.

On *Smilicana racemosa* (L.) Desf. (*Vagnera* Morong.)

Of rather common occurrence and usually abundant in infected clumps.

107. SEPTORIA TOXICODENDRI Curtis.

On *Rhus Toxicodendron* L. (*R. radicans* L.)

Probably common and abundant.

108. SEPTORIA URTICAE Desm.

On *Laportea canadensis* (L.) Gaud. (*Urticatum divaricatum* (L.) Kuntze.)

Not common nor abundant.

Family Leptostromataceae.

109. LEPTOTHYRIUM POMI (Mont. & Fr.) Sacc.

On *Pyrus Malus* L. (*Malus Malus* Britton).

The fly speck disease of apples. Not uncommon, but not destructive as it is confined to the cortical cells of the fruit which it disfigures more than it injures.

110. MELASMA GALII Ellis & Everh.

On *Galium boreale* L.

Not common.

ORDER MELANCONIALES

Family Melanconiaceae.

111. CYLINDROSPORIUM HUMULI Ellis & Everh.

On *Humulis Lupulus* L.

Not common, but the infested vines are usually well infected.

112. MARSONIA JUGLANDIS Sacc.

On *Juglans cinerea* L.

Common and abundant on the butternut which is sometimes almost defoliated by the fungus.

113. GLEOSPORIUM CONFLUENTIS Ellis & Dearn.

On *Sagittaria latifolia* Willd.

Common and conspicuous, frequently almost destroying the leaves.

114. GLEOSPORIUM DAVISHI Ellis & Everh.

On *Lathyrus venosus* Muhl.

A single cluster of pods were found infected in early August.

ORDER MONILIALES.

Family Moniliaceae.

115. ALTERNARIA BRASSICAE (Berk.) Sacc.

On *Brassica nigra* (L.) Koch.

Not common, but rather conspicuous, probably to be found on other closely related hosts.

116. ALTERNARIA PANAX Whetzel.

On *Panax quinquefolia* L.

A very destructive pest in ginseng beds but so far not observed on the wild plants. It is only by the most persistent efforts that growers are able to produce a crop.

117. SEPTOCYLINDRIUM RUFOMACULANS (Peck) Pound & Clements. [*Ramularia rufomaculans* Peck.]

On *Polygonum aviculare* L.

Common and abundant, often almost defoliating its host.

118. MONILIA ANGSTIOR (Sacc.) Reade.

On *Prunus virginiana* L.

Common, but nowhere abundant on the immature fruits of the choke cherry. Probably the conidial phase of some species of *Sclerotinia*.

119. DIDYMARIA DIDYMA (Unger) Pound. [*Ramularia didyma* Unger, *D. Ungerii* Corda.]

On *Ranunculus recurvatus* Poir, and *R. septentrionalis* Poir.

Common, but not very abundant. A conspicuous fungus owing to the frosted appearance of the conidiophores and the large epiphyllous discolorations.

120. RAMULARIA ARMORACIA Fuckel.

On *Radicula Armoracia* (L.) Robinson (Roripa A. S. Hitch.).

A very abundant species, practically every plant of horseradish being infected.

121. RAMULARIA ARVENSIS Sacc.

On *Potentilla monsepalsensis* L.

A common leafspot in the later weeks of summer and during the autumn.

122. RAMULARIA RUDBECKII Peck.

On *Rudbeckia laciniata* L.

Not uncommon in midsummer.

123. RAMULARIA TARAXICA Karst.

On *Taraxacum officinale* Weber (*T. Taraxacum* Karst.)

Common and abundant, especially in early summer.

124. CERCOSPORA ALISMATIS Ellis & Holw.

On *Alisma Plantago-aquatica* L.

Neither common nor abundant. Appearing in early summer.

125. CERCOSPORA AMPELOPSIDIS Peck.

On *Pseuderca quinquefolia* (L.) Greene (*Parthenocissus* Planch) and *P. quinquefolia hirsuta* (Donn) Rehder.

Common and abundant, causing defoliation in some cases. This is a more destructive fungus than *Guignardia Bidwellii* as it covers more of the leaf surface.

126. CERCOSPORA ANTIPUS Ellis & Holw.

On *Lonicera Sullivantii* A. Gray.

Common, the infected vines usually with but few healthy leaves, but the spots are small and few on a leaf. Appearing in midsummer.

127. CERCOSPORA CANA Sacc.

On *Erigeron annuus* (L.) Pers., and *E. canadensis* L. (Leptilon Brotton.)

Common and abundant, especially on the first host. This species was later made the type of the genus *Cercosporella* Sacc., which is distinguished from *Cercospora* by its hyaline conidiophores and conidia, a distinction which cannot be accepted as valid.

128. CERCOSPORA CAULOPHYLLI Peck.

On *Caulophyllum thalictroides* (L.) Michx.

Rather common, but not abundant. The fungus appears about the time the berries are full grown.

129. CERCOSPORA CHENOPODII Fries.

On *Chenopodium album* L., and *C. album viride* (L.) Moq.

Common and abundant in summer and autumn.

130. CERCOSPORA CLAVATA Gerard.

On *Asclepias syriaca* L.

Not uncommon during midsummer.

131. CERCOSPORA DAVISII Ellis & Everh.

On *Melilotus alba* Desv.

Found abundantly in one locality in July.

132. CERCOSPORA DIOSCOREAE Ellis & Martin.

On *Dioscorea villosa* L.

Not common, and when present infecting but a few leaves.

133. *CERCOSPORA ECHINOCYSTIDIS* Ellis & Martin.

On *Echinocystis lobata* (Michx.) T. & G. (*Micrampelis* Greene.)

A single vine was found scantily infected.

134. *CERCOSPORA GERANII* Kell. & Swing.

On *Geranium maculatum* L.

Found sparingly in midsummer.

135. *CERCOSPORA GRANULIFORMIS* Ellis & Holw.

On *Viola* sp.

Not uncommon in midsummer.

136. *CERCOSPORA HEUCHERI* Ellis & Mart.

On *Heuchera hispida* Pursh.

Infrequent, but with an abundant infection where found. Collected in July.

137. *CERCOSPORA MENISPERMI* Ellis & Holw.

On *Menispermium canadensis* L.

Common and abundant during the entire summer.

138. *CERCOSPORA OXYBAPHI* Ellis & Holw.

On *Oxybaphus nyctagineus* (Michx.) Sweet (*Allonia* Michx.)

Not common nor abundant. Collected during midsummer.

139. *CERCOSPORA POLYGONORUM* Cooke.

On *Polygonum Hydropiper* L.

Not uncommon and where present quite abundant. The blackish hypophyllous growth makes this a very conspicuous species.

140. *CERCOSPORA RACEMOSA* Ellis & Mart.

On *Teucrium canadense* L.

Not very common but fairly abundant in infected patches of the host. Autumn.

141. *CERCOSPORA ROSAECOLA* Pass.

On *Rosa pratincola* Greene.

Not common, appearing in midsummer.

142. *CERCOSPORA SII* Ellis & Everh.

On *Sium cicutaeifolium* Gmel.

Not common, but where present rather abundant. Midsummer.

143. *CERCOSPORA TOXICODENDRI* Ellis.

On *Rhus Toxicodendri* L. (*R. radicans* L.)

Not uncommon and in some places at least, quite abundant. The infected areas suggest the work of some insect as the discoloration is about the same as that produced by the drying sap of the host. On the under surface the conidia give the spots a frosted appearance. The species is of more than ordinary interest as the note appended to the description in Ellis and Everhart's Enumeration of the North American Cercosporae is "On leaves of *Rhus Toxicodendron*,

Newfield, N. J. Not since found, and hence doubtful."* The material agrees thoroughly with the description and so removes this from the list of doubtful species.

144. *CERCOSPORA VARIA* Peck.

On *Viburnum Lentago* L.

Not common or abundant. Midsummer.

145. *CERCOSPORA ZEBRINA* Pass.

On *Trifolium pratense* L.

Rather a common disease of the red clover, but probably not causing much loss to the crop.

146. *SCOLECOTRICHUM GRAMINIS* Fuckel.

On *Muhlenbergia Mexicana* (L.) Trin.

Common, late summer and autumn.

147. *POLYTHRINCIUM TRIFOLII* Kunze.

On *Trifolium pratense* L., and *T. repens* L.

Abundant on both white and red clover during the entire summer. This is said to be the conidial stage of an Ascomycete but is retained here as the perfect form was not collected and the following quotation indicates that the species is really not well known. "On account of the characteristics and habits of the mycelium and of the stroma sometimes produced, it has been assumed that the perfect stage would be a species of *Phyllachora*, and the plant actually bears also the name *Phyllachora Trifolii* (Pers.) Fckl."†

148. *CLADOSPORIUM TRIOSETI* Peck.

On *Triosectum perfoliatum* L.

Not rare in midsummer.

149. *HELMINTHOSPORIUM GRAMINEUM* Rabenh.

On *Hordeum vulgare* L.

Very abundant during the past summer causing a considerable shortage in the crop.

150. *MACROSPORIUM SOLANI* Ellis & Everh.

On *Datura Tatula* L.

Common and abundant throughout the summer.

Family *Tuberculariaceae*.

151. *TUBERCULINA PERSICINA* Ditm.

On the aecia of Uredinales: *Puccinia Caricis-asteris* Arth., on *Solidago latifolia* L. (*S. flexicaulis* L.), *Puccinia fraxinata* (Schw.) Arth., on *Fraxinus americana* L., *Puccinia Opizii* Bubak, on *Lactuca canadensis* L., *Puccinia Peckii* (De T.) Kellerm., on *Oenothera Biennis* L. (*Onagra* Scop.), *Puccinia Phrymae* (Halst.) Arth., on *Phryma Leptostachya* L.

*Jour. Myc. 1:62. 1885.

†Duggar, Fungous Diseases of Plants 298. 1910.

Not uncommon on various aecia, appearing as large or small purplish tubercles.

152. *FUSARIUM PARASITICUM* Ellis & Kell.

On *Puccinia Menthae* Pers., on *Monarda fistuloso* L.

Rather abundant, especially just previous to the appearance of the telia.

153. *FUSARIUM UREDINEUM* Ellis & Everh.

On *Melampsora Bigelowii* Thum., on *Salix lucida* Muhl., and *M. Medusae* Thum., on *Populus deltoides* Marsh.

Rather common on the uredinia of these two species, giving the sori the appearance of being covered with a white mould.

CLASS BASIDIOMYCETES.

ORDER USTILAGINLES

Family Ustilaginaceae.

154. *USTILAGO HORDEI* (Pers.) Kell. & Swing. [*U. segetum* p. p.]

On *Hordeum vulgare* L.

Abundant and destructive.

155. *USTILAGO NEGLECTA* Niessl. [*U. Panici-glauci* Wint.]

On *Setaria glauca* (L.) Beauv. (*Chaetochloa* Scribn.)

Rather abundant.

156. *USTILAGO RABENBORSTIANA* Kuehn.

On *Digitaria sanguinalis* (L.) Scop. (*Syntherisma* Dulac.)

Abundant in autumn.

157. *USTILAGO UTRICULOSA* (Nees) Tul.

On *Polygonum lapathifolium* L., and *P. pennsylvanicum* L.

Rather common in late summer and autumn.

158. *MELANOPSISICHUM AUSTRO-AMERICANUM* (Speg.) G. Beck. (*Ustilago* Speg.)

On *Polygonum lapathifolium* L.

Rare, only three or four small sori being found in early autumn.

159. *SCHWENNELLA MELANOGRAMMA* (DC.) Scharoeter.

On *Carex pennsylvanica* L.

Abundant in spring and early summer.

160. *SOROSPORIUM CENCHRI* P. Henn. [*Ustilago Syntherismae* Peck., not Schwein., *S. Syntherismae* Farlow.]

On *Cenchrus tribuloides* L.

Abundant in autumn. The specific name *Syntherismae* is based on a misinterpretation of specific limits which is analogous to a misdetermination in so far as the nomenclatural status of the combination is concerned. It has accordingly been thought preferable to use the name here employed.

Family *Tilletiaceae*.

161. UROCYSTIS ANEMONES (Pers.) Winter.
On *Anemone quinquefolia* L., and *Hepatica acutiloba* DC. (*H. acuta* Britton.)
Abundant in early spring. On *Anemone* frequently associated with other fungi.
162. ENTYLOMA AUSTRALE Speg. [*E. Physalidis* (Klachb. & Cooke) Winter, *E. Besseyi* Farl.]
On *Physalis pruinosa* L.
Abundant throughout the summer, partially defoliating the host.
163. ENTYLOMA COMPOSITARUM Farl.
On *Ambrosia artemisiaefolia* L., *A. trifida* L., *A. trifida integrifolia* (Muhl.) T. & G. *Bidens frondosa* L., and *Lepachys pinnata* (Vent.) T. & G. (Ratbida Barnh.)
Common and abundant throughout the summer.
164. ENTYLOMA MENISPERMI Farl & Trel.
On *Menispermium canadense* L.
Rare, in late autumn.
165. ENTYLOMA NYMPHAEAE (D. D. Cunn.) Setch.
On *Castalia tuberosa* (Paine) Greene.
Not common. Collected in late July.
166. ENTYLOMA POLYSPORUM (Peck.) Farl.
On *Ambrosia trifida* L.
Not common, throughout the summer.
167. ENTYLOMA SANICULAE Peck.
On *Sanicula* sp.
Not common on the root leaves in early spring.
168. DOASSANSIA DEFORMANS Setch.
On *Sagittaria latifolia* Willd.
Common and rather abundant on scapes, petioles, and leaves producing very prominent hypertrophy of the host. Late summer and autumn.

ORDER UREDINIALES

Family Coleosporiaceae.

169. COLEOSPORIUM SOLIDAGINIS (Schw.) Thuem.
On *Aster cordifolius* L., *A. puniceus* L., *A. sp. indet.*, *Solidago canadensis* L., *S. latifolia* L. (*S. flexicaulis* L.), and *S. serotina* Ait.
One of the most abundant of our rusts, and one with an exceptional range of hosts. Midsummer and autumn.

Family Melampsoraceae.

170. MELAMPSORA BIGELOWII Thuem [*M. farenosa* (Pers.) Schroet.]
On *Salix amygdaloides* Anders., *S. humilis* Marsh., *S. interior* Rowlee, *S. longifolia* Muhl. (*S. fluviatilis* auth., not Nutt.), and *S. lucida* Muhl.
Common during summer and autumn on willows.

171. MELAMPSORA LINI (Schum.) Desmaz.

On *Linum sulcatum*, Riddell.

A single collection in the later part of June. Scarce.

172. MELAMPSORA MEDUSAE Thum [*M. populina* Jacq.]

On *Populus deltoides* Marsh.

Abundant on the Carolina poplar throughout the summer and autumn, but not noted on any other species of *Populus*.

173. PUCCINIASTRUM AGRIMONIAE (Schw.) Tranz. (*Uredo Agrimoniae* DC.)

On *Agrimonia gryposepala* Wallr. (*A. hirsuta* Bicknell), and *A. mollis* (T. & G.) Britton.

Not a common rust. Late summer and autumn.

174. PUCCINIASTRUM PYROLAE (Pers.) Dietel.

On *Pyrola elliptica* Nutt.

The uredinia collected sparingly late in May.

175. HYALOPSORA POLYPODII (DC) Magnus [*Uredo Polypodii* DC.]

On *Cystopteris fragilis* (L.) Bernh. (Felix Underw.)

Rather abundant in a single locality in the middle of July.

176. MELAMPSOROPSIS PYROLAE (DC.) Arth[*Chrysomyxa pirolatum* (Schw.) Wint.]

On *Pyrola elliptica* Nutt.

Rather abundant in May.

177. CRONARTIUM COMANDRAE Peck.

On *Comandra pallida* A. DC.

A small clump of the host found infected in early October.

Family Pucciniaceae.

178. PILEOLARIA TOXICODENDRI (Berk. & Rav.) Arthur. [*Uromyces Toxicodendri* Berk & Rav.]

II, III on *Rhus Toxicodendron* L. (*R. radicans* L.)

Not an uncommon rust, but the inconspicuous telia render it easily overlooked.

179. TRANZSCHELIA PUNCTATA (Pers.) Arth. [*Aecidium punctatum* Pers., *A. hepaticum* Schw., *A. Ranunculacearum* DC. *Puccinia prinosum* Link, *P. pruni-spinosae* Pers.]

I on *Anemone quinquefolia* L., and *Hepatica acutiloba* DC. (*H. acuta* Britton.)

II, III on *Prunus americana* Marsh.

The aecial stage is one of the commonest and most abundant of our rusts. The later stages are usually abundant where found, but not so common as the aecia. The mycelium appears to be perennial in *Anemone* and *Hepatica* so this stage can appear without indicating the probable abundance of the rust on the alternate hosts.

180. POLYTHELIS FUSCA (Pers.) Arth. [*Puccinia fuscum* (Pers.) Winter.]
On *Anemone quinquefolia* L.

This is one of the most abundant of our early rusts, the sori appearing sometimes before the leaves are full grown. Only O and III.

181. UROPYXIS AMORPHAE (M. A. Curt.) Schroter. [*Puccinia Amorphae* M. A. Curtiss.]

III on *Amorpha fruticosa* L.

Common in late autumn, and usually abundant where found.

182. PHRAGMIDIUM ROSAE-ARKANSANAE Dietel.

I, II, III on *Rosa pratincola* Greene.

Rather uncommon and not abundant.

183. GYMNOCONIA INTERSTITIALIS (Schl.) Lagerh. [*Uredo caeoma-nitens* Schw., *Caeoma nitens* Schw.]

On *Rubus* sp. indet.

Common on the wild blackberry.

184. KUEHNEOLA POTENTILLAE (Schw.) Arthur. [*Phragmidium obtusum* (Straus) Winter.]

II, III on *Potentilla canadensis* L.

Rather common. The primary uredo of this species is the first rust to appear in the spring.

185. GYMNOSPORANGIUM CORNICULANS Kern.

On *Amelanchier canadensis* (L.) Medic.

Pycnia and immature aecia were collected just as the leaves were falling from a tree badly infested with *Dimerosporium Colisonii*. "The telia of this species are to be found on the branches of the red cedar and produce galls which are woody and irregularly globular, ranging from a few millimeters to two or three centimeters in diameter. They are readily told from the galls of *Gym. Juniperi-virginianae*, but are not unlike those of *Gym. nidus-avis*. . . . Only one collection of the telia has yet been made. . . . (This) was obtained in northern Michigan." Arthur in Litt.

186. GYMNOSPORANGIUM GLOBOSUM Farlow. [*Roestelia lacerata* Fries.]

I on *Crataegus punctata* Jacq., and *C. rotundifolia* Moench.

III on *Juniperus virginiana* L.

Common and abundant both on the cedar and the thorn. Of the last scarcely a healthy leaf remains on many trees.

187. GYMNOSPORANGIUM JUNIPERI-VIRGINIANAE Schw. [*G. macropus* Link, *Roestelia pyrata* Thax.]

I on *Pyrus ioensis* (Wood) Bailey (*Malus Britton*), and *P. Malus* L. (*M. Malus Britton*.)

III on *Juniperus virginiana* L.

Very common and abundant. The cedar apples are more conspicuous than in the preceding species, but locally no more abundant. The wild crab is most

seriously affected, leaf, twigs, and fruit bearing the rust while the infection on the cultivated apple is only nominal.

188. *GYMNOSPORANGIUM NIDUS-AVIS* Thaxter.

III on *Juniperus virginiana* L.

Not uncommon on cedar trees on the windward side of high bluffs, but so far not taken on the leeward side of hills or on level land where the wind is broken at a short distance.

189. *UROMYCES ACUMINATUS* Arth.

II, III on *Spartina cynosuroides* Willd.

Not uncommon. Probably the aecia of this species appears on *Polemonium*.

190. *UROMYCES ALBUS* D. & H.

I on *Vicia americana* Muhl.

The aecia were rather abundant but telia were not observed. This is the only species of *Uromyces* we have which omits the uredinia.

191. *UROMYCES CALADII* (Schw.) Farl. [*Aecidium Caladii* Schw.]

I, II, III on *Arisaema triphyllum* (L.) Schott.

I on *Arisaema dracontium* (L.) Schott.

One of our most abundant and most conspicuous rusts.

192. *UROMYCES EUPHORBIAE* Cooke & Peck. [*Accidium Euphorbiae* Schw.]

I, II, III on *Euphorbia humistrata* Engelm.

Common and abundant. The erect habit of the plant infected with the aecia renders it a comparatively conspicuous species.

193. *UROMYCES FABIAE* (Pers.) de Bary. [*Aecidium porosum* Peck.]

III on *Lathyrus venosus* Muhl., and *Vicia americana* Muhl.

Not common nor abundant.

194. *UROMYCES HOWEI* Peck.

II, III on *Asclepias syriaca* L.

Rather common and where found quite abundant.

195. *UROMYCES LESPEDEZAE-PROCUMBENTIS* (Schw.) Curt. [*U. Lespedezae* (Schw.) Peck.]

III on *Lespedeza capitata* Michx.

Not very common nor overly abundant.

196. *UROMYCES PYRIFORMIS* Cooke.

III on *Acorus calamus* L.

Rather abundant on the only clump of the host visited. October.

197. *UROMYCES RUBECKIAE* Arth. & Holw.

III on *Rudbeckia laciniata* L.

Common and abundant on the wild form of the host but not seen on the cultivated variety. The only *Uromyces* in our territory which produces telia without either aecia or uredinia.

198. UROMYCES SILPHII (Syd.) Arth. [*U. Junci Tul.*]I on *Silphium laciniatum* L. (Herb. Arthur.)II, III on *Juncus Interior* Wiegand.

A single sorus of the æcial stage was found while the other stages are very common.

199. UROMYCES TRIFOLII (Hedw. f.) Lev.

I, II, III on *Trifolium repens* L.

Rather abundant on the white clover, but not found on the red.

200. PUCCINIA ALBIPERIDIA Arth.

I on *Ribes Cynosbati* L., *R. florida* L'Her., and *R. gracile* Michx.

Very abundant on both species of gooseberries, but scarce on the currant. It is possible that two species are included here but as the corresponding forms on *Carex* have not been collected it is rather difficult to say.

201. PUCCINIA ANEMONES-VIRGINIANAE Schw.

On *Anemone virginiana*.

Common from early spring to late autumn. Aecia and telia both lacking.

202. PUCCINIA ANGUSTATA Peck.

III on *Scirpus atrovirens* L.

Found sparingly in late autumn. The aecia, which are on *Lycopus* have not been collected here.

203. PUCCINIA Asparagi DC.

II, III on *Asparagus officinalis* L.

Common, especially on wild asparagus, sometimes becoming a pest in gardens.

204. PUCCINIA ASTERIS Duby.

On *Aster cordifolius* L. and *A. paniculatus* Lam.

Common and often very abundant. Aecia and uredinia absent.

205. PUCCINIA CARICIA-ASTERIS Arth. [ÆCIDIDIUM ASTERATUM Schw.]

I on *Aster cordifolius* L.II, III on *Carex cephalophora* Muhl.

Rather rare, both æcia and the other forms appearing in midsummer.

206. PUCCINIA CARICIS-ERIGERONTIS Arth. [Æcidium erigeronatum Schw.]

I on *Erigeron annuus* (L.), Pers., *E. canadense* L. (Leptilon Britton), and *E. philadelphicus* L.

Abundant, but the telial stage has not yet been collected.

207. PUCCINIA CARICIS-SOLIDAGINIS Arth.

I on *Solidago latifolia* L. (*S. flexicaulis* L.), *S. serotina* Ait., and *S. ulmifolia* Muhl.

Common but not abundant.

208. PUCCINIA CIRCAEAE Pers.

On *Circaea lutetiana* L.

Common and rather abundant, Aecia and uredinia wanting.

209. PUCCINIA CLAYTONIATA, (Schw.) Arth.
 I, III on *Claytonia virginica* L.
 Common and abundant, the æcia appearing with the flowers, and the telia with the ripening seeds. Uredinia wanting.
210. PUCCINIA CONVULVULI (Pers.) Cast.
 I, II, III on *Convolvulus sepium* L.
 The æcia appear in early summer, while the telia persist till frost. Common.
211. PUCCINIA EATONIAE Arth.
 I on *Ranunculus abortivus* L.
 Not common, but the infection usually abundant.
212. PUCCINIA ELEOCHARIDIS Arth [*Aecidium tenue* Schw.]
 I on *Eupatorium purpureum* L.
 Only a few sori found and these in a comparatively dry woods.
213. PUCCINIA EMACULATUM Schw.
 II, III on *Panicum capillare* L.
 Common and abundant.
214. PUCCINIA EPIPHYLLA (L.) Wettst.
 II on *Poa pratensis* L.
 Found in but one locality, but quite abundant there.
215. PUCCINIA FRAXINATA (Schw.) Arth. [*P. arundinariae* Schw., *Aecidium Fraxini* Schw.]
 I on *Fraxinus americana* L.
 III on *Spartina cynosuroides* (L.) Willd.
 A single sorus of the æcial stage found and only a scant infection of telia.
216. PUCCINIA HELIANTHI Schw.
 I on *Helianthus tracheliiifolius* Mill., and *H. strumosus* L.
 II, III on *Helianthus annuus* L., *H. decapetalus* L., *H. doronicoides* Lam., and *H. grosseserratus* Martens.
 Abundant throughout the summer.
217. PUCCINIA HYDROPHYLLI Cooke & Peck.
 III on *Hydrophyllum virginicum* L.
 Collected in but one station in early spring. Probably the other spore forms are wanting.
218. PUCCINIA IMPATIENTIS (Schw.) Arth. [*Aecidium Impatientatum* Schw.]
 I on *Impatiens aurea* Willd.
 III on *Elymus canadensis* L.
 Neither collection of this species represented an abundant infection.
219. PUCCINIA KUHNIAE Schw.
 II, III on *Kuhnia eupatorioides* L.
 Not abundant. Aecia wanting.

220. PUCCINIA MAJANTHAE (Schw.) Arth. & Holw.

I on *Polygonatum biflorum* (Walt.) Ell. (*Salomonina Britton*.)

A single plant was found with æcia.

221. PUCCINIA MENTHAE Pers.

II, III on *Pycnanthemum pilosum* Nutt. (*Koellia Britton*), *Mentha canadensis* L., and *Monarda fistulosa* L.

Abundant and common.

222. PUCCINIA MUHLENBERGIAE Arth. & Holw.

II on *Muhlenbergia Schreberi* J. F. Gmel. (*M. diffusa* Willd.)

A single clump of the host was found abundantly infected, in midsummer.

223. PUCCINIA OPIZII Bubak.

I on *Lactuca canadensis* L., and *L. pulchella*.

The æcia of this species is not abundant and the telia have been collected in America only once or twice. The alternate host is an undetermined species of *Carex*.

224. PUCCINIA PECKII (De T.) Kellerm. [*Aecidium Oenotherae* Peck.]

I on *Oenothera biennis* L. (*Onagra Scop.*)

III on *Carex longirostris*.

The æcia of this species are produced very abundantly in spring and early summer.

225. PUCCINIA PHRYMAE (Hals.) Arth. [*Aecidium Phrymae* Hals.]

I on *Phryma leptostachya* L.

In one woods the æcia are produced abundantly from early spring to midsummer.

226. PUCCINIA PIMPINELLAE (Str.) Link.

On *Osmorhiza Claytoni* (Michx.) Clarke, and *O. longistylis* (Torr.) DC. (*Washingtonia* sps. Britton.)

Autecious. Common and abundant in spring and early summer.

227. PUCCINIA PLUMBERIA Peck.

I on *Phlox paniculata* L. (Herb. Arthur.)

A single sorus was collected. Dr. Arthur says that the form may be heteroecious, but for the present refers it here. The only other collection of æcia on this host is recorded by Tracy who reports it from Starkville, Miss.*

228. PUCCINIA POCULIFORMIS (Jacq.) Wettst. [*P. graminis* Pers.]

II, III on *Agropyron repens* (L.) Beauv., *Agrostis alba* L., and *A. alba vulgaris* (With.) Thurb.

A common rust.

229. PUCCINIA PODOPHYLLI (Schw.) Link.

I, III on *Podophyllum peltatum* L.

*Bull. Miss. Agr. Exp. Sta., 34:90. 1895.

The conspicuous æcia of early spring are followed directly by the inconspicuous telia, the uredinia being elided. Not as common as the abundance of the host would indicate.

230. PUCCINIA POLYGONI-AMPHIBIAE Pers. [*Aecidium Geranii* DC.]

I on *Geranium maculatum* L.

II, III on *Polygonum amphibium* L.

The æcia are rather common, but never abundant, while the telia were collected but once, then in fair abundance.

231. PUCCINIA PUSTULATA (Curt.) Arth. [*A. pustulatum* Curt., *Puccinia Andropogi* Schw.]

I on *Comandra umbellata* (L.) Nutt., and *C. pallida* A. DC.

III on *Andropogon furcatus* L.

Rather a common species, and always abundant when found.

232. PUCCINIA PUNCTATA (Str.) Link.

II, III on *Galium tinctorium* L.

Rare, and never abundant.

233. PUCCINIA RHAMNI (Pers.) Arth. [*P. coronata* Corda.]

II, III on *Avena sativa* L.

This is the common rust of oats. It is quite abundant, especially on self sown oats.

234. PUCCINIA SILPHII Schw.

On *Silphium perfoliatum* L.

The telia appear in early spring and continue in fair abundance throughout the summer. The æcia and uredinia are omitted in this species.

235. PUCCINIA SORGHI Schw. [*P. Maydis* Carrau.]

On *Zea Mays* L.

Common, but apparently not detrimental, at least to any considerable extent.

236. PUCCINIA TARAXACI Plowr. [*P. flosculosorum* (A. & S.) Wint.]

II, III on *Taraxacum officinale* Willd. (T. *Taraxacum* Karst.)

Common and abundant throughout the summer. The æcia are elided.

237. PUCCINIA URTICAE (Schum.) Lagerh. [*Aecidium Urticae* Schum., *P. caracis* Aut. p.p.]

I on *Urtica gracilis* L.

Æcia collected sparingly, telia not seen.

238. PUCCINIA VIOLAE (Schum.) DC.

I on *Viola papilionacea* Nutt., *V. pubescens* Ait., and *V. scabriuscula* Schw.

The æcia are abundant in spring but later stages have not been observed.

239. AECIDIUM CAMPANULASTRI n. sp.

On *Campanulastrum americanum* (L.) Small (*Campanula americana* L.), Fayette, Iowa, June 25, 1909.

Aecia subepidermal, amphiginous, irregularly scattered over more or less rounded yellowish discolored areas which measure about 5 mm. across, short cylindrical or deeply cuplike, 0.4-0.7 mm. across; peridium ample, of irregularly polyhedral cells about 15x20 micra, minutely granular; aeciospores globose, often more or less angular, 12-18x10-15 micra; wall very light yellow, about 1.5 micra thick, smooth.*

Collected but once and then not in abundance. The discolored areas are of sufficient size and of deep enough a color to render the aecia quite conspicuous. No trace of pycnia were observed in the material examined. Probably has its alternate form on some grass or sedge.

240. *AECIDIUM COMPOSITARUM* Mart.

On *Polymnia canadensis* L., and *Rudbeckia laciniata* L.

A superficial comparison of the aecia on these two hosts is sufficient to convince one that they belong to two species of rusts. On *Polymnia* the infected area is rather large, bright yellow, and has the cups scattered irregularly and unevenly over the under surface. On *Rudbeckia* the discoloration is pale, tending to brownish in the center, the cups being grouped closely on the underside and pale yellow. The collection on *Polymnia* is interesting as the only previous record for this host is Racine, Wis. The material was found on the windward side of a hill, with no apparent source of infection at hand. The aecia on *Rudbeckia* were rather common and fairly abundant.

241. *AECIDIUM HYDROPHYLLI* Peck.

On *Nemophylla microcalyx* (Nutt.) Fisch & Mey. (*Macrocalyx Nyctelea* Kuntze.)

Rather abundant in one station, but no clue to its relationship was found.

242. *AECIDIUM HYDNOIDEUM* B. & C.

On *Dirca palustris* L.

A very conspicuous form, but not common or abundant.

243. *AECIDIUM POLEMONII* Peck.

On *Polemonium reptans* L.

Rather abundant in one station. Probably connected with *Uromyces acuminatus* Arth. on *Spartina*.

244. *AECIDIUM XANTHOXULI* Peck.

On *Xanthoxylon americanum* Mill.

An inconspicuous form which was found sparingly on wind swept hillsides in late July.

ORDER EXOBASIDIALES.

Family *Exobasidiaceae*.

245. *MICROSTROMA JUGLANDIS* Sacc.

On *Juglans cinerea* L.

Not uncommon, causing white areas on the under surface of the leaf.

*Aecis subepidermalis, amphiginis, irregularis dispersis, brevis cylindraceutis, vel cupuliformibus, 0.4-0.7 mm. crassis; peridiis amplis, cellulis irregularibus polygonis, granularibus; sporis globosis, vel angularis, 12-18 x 10-15 micra; membranibus flavidis vel subhyalinibus, circa 1.5 micra crassis.

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