NOTES ON PARASITIC FUNGI IN WISCONSIN—XIII

J. J. Davis

Petrak considers *Asterina rubicola* E. & E. and *Coccochora rubi* Davis as forms of a single species which he designates *Stigmatea rubicola* (E. & E.) Theiss. *(Ann. Mycol.* **22**: 109 *et seq.)*. That they are closely related phylogenetically seems clear. As far as observed the dothidial form referred to Coccochora occurs on blackberries only, the Asterina on raspberries only. To determine their degree of relationship will require inoculation experiment.

Petrak rejects the genus Didymellina Hoehn. and refers the ascigerous stage with which *Heterosporium gracile* Sacc. is connected to Didymella and refers *Mycosphaerella pinodes* (Berk. & Blox.) Niessel to the same genus. He also suggests that *Mycosphaerella lethalis* Stone should be referred to Didymella (*Ann. Mycol.* **22**: 17–18).

Wolf refers *Mollisia earliana* Sacc. to Diplocarpon which he now places in Phacidiaceae (*Journ. Elisha Mitchell Scientific Society*).

Leaves of *Corylus rostrata* bearing immature Mamiania were taken at Bruce on which were orbicular light brown to cinereous spots 10–15 mm. in diameter. Each spot bore in its center a Mamiania stroma and on the remainder scattered acervuli of *Gloeosporium coryli* (Desm.) Sacc. *Leptothyrium corylinum* Fckl. is reported to be a conidial stage of *Mamiania coryli* Batsch.) DeNot. The fungus referred to *Gloeosporium coryli* (Desm.) Sacc. somewhat resembles Leptothyrium, the cuticular covering of the acervuli being black and clypeoid. The sporules however are not like those of *L. corylinum* but are similar to those of *L. coryli* Lib. In the desbription of *Gloeosporium coryli* (Desm.) Sacc. it is stated that the acervuli are on the lower surface of the spots, seldom on the upper. The reverse is the case in Wisconsin.

Phacidium taxi Fr. was recorded in "Notes" X as occurring on *Taxus canadensis* in Wisconsin. The record was based on

immature material in which no spores had formed. Another collection on this host was made at Appolonia in September 1924 but this also is immature. However a few spores were found but they probably were not mature. The following notes were made: Ascomata hypophyllous, biseriate, cinerous when dry, dull black then wet, orbicular, about ⅓ mm. in diameter with thick black walls and a central stellate opening; hymenium discoid, sometimes extending past the acute sulcus on to the lower surface of the epithecium where however the development of asci is rudimentary; asci crowded, straight, cylindrical, 40–60 x 4–6 μ; spores obliquely uniseriate, hyaline, fusiform, straight, 6–10 x 2–3μ; paraphyses slender, filiform, lax. Usually all of the leaves on the twig bore the ascomata. Whether or not this is the Friesian species is an open question.

In the classification of the Hypodermataceae proposed by Dearness the shape of the apothecia is ignored and to the genus Hypodermella, as amended, is referred *Lophodermium amplum* Davis ("Notes" V, pp. 695–6), which thus becomes *Hypodermella ampla* (Davis) Dearn. (*Mycologia* **16**: 152).

Phyllosticta renouana Sacc. & Roum. of the provisional list is *Ph. typhina* Sacc. & Malbr. which is the prior name.

In Notes V, p. 701, record was made of pycnidia in the loculi of Phyllachora on Elymus for which the binomial *Cytodiplospora elymina* was proposed with the suggestion that it occurred in the life cycle of Phyllachora. Petrak is of the opinion that this bears a parasitic relation to the Phyllachora and has proposed for it a new genus, Davisiella (*Ann. Mycol,* **22**: 133–4). A similar development has been observed two or three times in loculi of Phyllachora on *Calamagrostis canadensis* but not in sufficient abundance to secure a specimen. On this host the sporules are about twice the length of those on Elymus, 10–20μ.

The genus Sacidium is being dropped by mycologists following von Hoehnel. The parasite on leaves of Betula described by Peck under the name *Septoria microsperma* and referred to Sacidium in "Notes" I, pp. 88–9, is placed in von Hoehnel's proposed genus Cylindrosporella by Petrak (*Ann. Mycol.* **22**: 42–3).

What is probably a form of *Cercospora varia* Pk. has been found on *Viburnum pubescens* (Lewis, Aug. 1, 1924) in which the conidiophores are hyaline and the conidia slender, tapering,

sometimes exceeding 100 μ in length. This would fall in Cercosporella if taken by itself.

Septoria gratiolae Sacc. & Speg. of the provisional list is the parasite to which Ellis & Martin gave the same name for which Berlese & Voglino substituted *Septoria ellisii.* Although there has been no opportunity for comparison it has been assumed that these are conspecific. The Wisconisn specimens bear sporules 25–50 x ¾–1½μ more or less curved and tapering to the attenuate apex.

Ramularia waldsteiniae Ell. & Davis was collected at Hayward in 1924. In this collection the spots are dark purple above, more or less elongated parallel to the veins and often limited by the veins. On the lower surface the spots are pale brown and less sharply limited.

Ramularia magnusiana (Sacc.) Lindau as it has been seen in Wisconsin on *Trientalis americana* bears conidia that are seldom septate, 10–33 x 1½–3 μ the shorter ones fusoid. The conidiophores spring from scattered black tubercles 25–40 μ in diameter and are mostly fuligenous tinted, 20–60 x 2–3 μ. The spots are usually angular, limited by the veinlets and immarginate, light brown becoming paler in the center. While this departs widely from the type it nevertheless appears to be a variant of that parasite.

Glomerularia corni Pk. was recorded in the provisional list on *Cornus canadensis, Lonicera canadensis* and *L. oblongifolia. Glomerularia lonicerae* (Pk.) Dearn. & House has been used as a designation of the parasite on Lonicera but no distinguishing characters are given. *(N. Y. State Museum Bulletin: Report of the State Botanist for 1921,* p. 85).

In some notes by von Hoehnel published after his death by Weese *(Centralb. f. Bakt. etc.* **60**) the suggestion is made that the genus Fusicladium be restricted to conidial forms of Venturia and that the species that have been referred to that genus but which have Mycosphaerella (Carlia) as their ascigerous state be referred to Passalora. *Fusicladium depressum* (B. & Br.) Sacc. on Angelica he therefore designated *Passalora depressa* (B. & Br.) Hoehn. and *Cercospora platyspora* Ell. & Hol. on Taenidia *Passalora punctiformis* (Wint.) Hoehn. *Fusicladium punctiforme* Wint. and *Cercospora platyspora* Ell. & Hol. based upon the same parasite, were published in *Hedwigia* number for January

and February 1887 and the *Journal of Mycology* number for February 1887 respectively and it would probably now be impossible to determine which has priority in time of publication. To this species von Hoehnel also referred *Cercospora sii* E. & E. on Sium which is certainly very similar. He further suggested that it might be merely a short-spored form of *Passalora depressa* (B. & Br.) Hoehn. In the same publication *Scolecotrichum graminis* Fckl. is also referred to Passalora while *Scolecotrichum maculicola* Ell. & Kell. is referred to Cladosporium with the suggestion that it may be *C. phragmitis* Opiz. For the much named *Passalora fasciculata* (C. & E.) Earle the genus Cercosporidium Earle (*Muhlenbergia* **1**: 16) which had been abandoned by its author (*Torreya* **2**: 160), is revived and the binomial *Cercosporidium fasciculatum* (C. & E.) Hoehn. added to its generous nomenclature.

Comparison of American specimens of *Cercospora subsanguinea* E. & E. with European specimens of *Ramularia rubicunda* Bres. indicates that they are conspecific. As stated in "Notes" I, p. 83, the plant is referable to Ramularia rather than to Cercospora. *Cercospora subsanguinea* E. & E. was published in 1887, *Ramularia rubicunda* Bres. in 1896. If the older specific name is preserved a new binomial is necessary. *Ramularia rubicunda* Bres. is in general use in Europe. All references to the plant in Europe are under that name and all European specimens are so labeled. As it is necessary to change the designation of the species as it occurs in America it seems to me best to adopt the name used in Europe. I have therefore labeled the Wisconsin specimens *Ramularia rubicunda* Bres. This obviates any change in Europe and reduces to synonymy but one name instead of two. This may be taken as an illustration of the fact that rigid adherence to the rule of priority may cause more trouble than it cures.

Gloeosporium equiseti E. & E. was considered by Bubak to be identical with *Septoria detospora* Sacc. and was made the type of new genus becoming *Titaeospora detospora* (Sacc.) Bubak. (*Ann. Mycol.* **14**: 345 (1916).

Through the kindness of Dr. House I have had opportunity to examine authentic material of *Vermicularia Violae-rotundifoliae* (Sacc.) House. As a result I conclude that the parasite on *Viola scabriuscula* recorded in "Notes" XI, p. 297, under

the name *Colletotrichum violarum* n. sp. is conspecific therewith. They seem to be referable to Colletotrichum.

Colletotrichum salmonicolor O'Gara is united with *Gloeosporium fusarioides* Ell. & Kell. by Dearness who proposes the combination *Colletotrichum fusarioides* (E. & K.) O'Gara (*Mycologia* **16**: 169) with the suggestion that it is a conidial state of *Glomerella cingulata* (Stonem.) Sp. & V. Schr. If that proves to be the case of course the combination will fall into synonymy.

With the record of *Cylindrosporium vermiforme* Davis as occurring on *Alnus crispa* in Wisconsin was the statement that the sporules in the collection on that species of host were but about 3 μ in diameter. Material on *A. crispa* collected at Hayward by Gilbert & Davis has normally developed sporules.

For the microconidial state of *Cylindrosporium betulae* Davis the name *Gloeosporium betulae-papyriferae* Dearness & Overholts has been proposed (*Mycologia* **16**: 167).

Entyloma linariae Schroet. var. *gratiolae* Davis was collected in 1923 at Haugen on the same host. In neither of the localities was Entyloma found on Veronica.

Peridermium coloradense (Diet.) Arth. & Kern was recorded in the 4th supplementary list as occurring on *Picea mariana* in Wisconsin but it was not included in the provisional list. This is now thought to be *Peridermium elatinum* A. & S. the aecial stage of *Melampsorella caryophyllacearum* Schroet, the further stages of which have not been collected in Wisconsin. The aecial stage on Picea has been observed at but one station in the state the usual host being *Abies balsamea.*

Additional Hosts

Plasmopara geranii (Pk.) Berl. & De Toni. On *Geranium Bicknellii.* Spooner.

Peronospora sordida B. & Br. On *Scrophularia leporella.* Blue River.

Colletotrichum graminicolum (Ces.) G. W. Wilson. On leaves of *Calamagrostis longifolia.* Port Wing.

Ascochyta pisi Lib. On *Lathyrus palustris.* Madison (Gilbert & Davis).

Rubus triflorus should be added to the hosts of *Septoria rubi* West. in Wisconsin.

Septoria psilostega Ell. & Mart. On *Galium boreale*. Hayward.

Ramularia reticulata Ell. & Evht. recorded in the provisional list as a parasite of *Osmorhiza Claytoni* occurs on *O. longistylis* as well, as one would expect.

Cercosporella nivea Ell. & Barth. On *Solidago uliginosa*. Brule. On *Solidago juncea scaberrima*. Lewis. The collections have been referred to this species in spite of the leaf spotting. The following notes were made from examination of the collection from Brule: Spots angular, white or yellowish white below becoming yellow then reddish brown above, 1–3 mm. in diameter; conidiophores more abundant below, fasciculate, 14–33 x 3 μ; conidia straight or curved, cylindrical to obclavate-cylindrical, 25–80 x 4 μ mostly 40–65 x 3 μ, becoming septate. On *Solidago juncea* the spots become purple above. On one leaf of *S. uliginosa* the coloring of the spots is reversed. In neither of the collections are the conidia abundant.

Cercospora viciae Ell. & Hol. On *Lathyrus ochroleucus*. Danbury.

Cercospora clavata (Ger.) Pk. On *Asclepias tuberosa*. Lewis.

The leaf parasite on *Carpinus caroliniana* recorded in "Notes" II, p. 106 under the name *Fusarium carpineum* n. sp. was collected on the same host at Balsam Lake in July 1924. The cellular base from which the conidia spring is usually simpler in this collection and many of them do not suggest a sporodochium. The spots are circular, about ½ cm. in diameter, scattered and not nervisequent. The spots are not brown until death of the leaf cells takes place when by confluence irregular brown areas may be formed. The conidia are not uniformly biseptate but develop 1–4 septa. This was found also, in small quantity, on *Carya cordiformis* growing with infected Carpinus.

Puccinia graminis Pers. Uredinia on *Poa annua* collected at Black Earth by McFarland & Davis are referred to this species. The uredospores are 17–24 x 13–17 μ. This appears to be the first collection that has been made on this species of Poa.

ADDITIONAL SPECIES

Mamiania fimbriata (Pers.) Ces. & DeNot. On *Carpinus caroliniana.* Danbury and Balsam Lake. The collections were made in September and are not mature.

Sclerotinia geranii Seaver & Horne. On *Geranium maculatum.* Madison.

Phyllosticta negundinis Sacc. & Speg. has been collected at several widely separated localities in Wisconsin. I see no morphological distinction between this and Ph. *minima* (B. & C.) E. & E.

Septoria flagellifera Ell. & Evht. On *Pisum sativum* (cult.). While this species appears to be common in Europe it has not been previously found in America. This raises the question as to whether it is indigenous or introduced. The clump of willows on which it was abundant were close to a highway but it was found later at Danbury on the same species of willow.

Septoria flagellifera Ell. & Evht. On *Pisum sativum* (cult.). Horicon (M. B. Linford). Apparently a species of northern range. The type was from North Dakota and it occurs in Manitoba.

While collecting at Bruce immature ascomata of *Rhytisma prini* Schw. were observed which appeared to have burst with protrusion of the white content which constrasted strongly with the black cortex. Going a little further ascomata of *Rhytisma salicinum* (Pers.) Fr. were found having the same appearance. On examination however it was found that the appearance was due to acervuli on the "tar spots" which had discharged snow white masses of sporules.

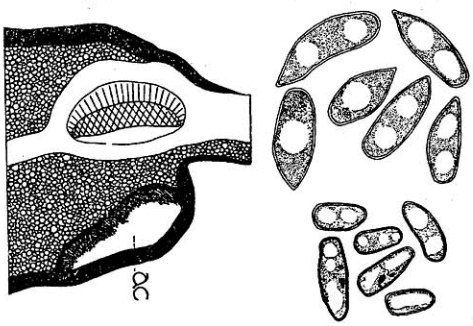
Gloeosporium niveum n. sp. Acervuli under the cortex of the Rhytisma stroma, plano-convex, varying in diameter up to ¾ mm.; conidia filling the acervulus, apparently produced by abstriction of erect hyphae springing from the base, hyaline, oblong with rounded ends to ovoid, continuous, 7–13 x 3μ. On immature ascomata of *Rhytisma prini* on leaves of *Ilex verticellata.* Bruce, Wisconsin, September 4, 1924.

Acervuli similar to the preceding, conidia oblong to subclavate, usually acute at one end, hyaline, continuous, 1–3 guttulate, 13–20 x 5–6 μ. On immature ascomata of *Rhytisma salicinum* on leaves of *Salix petiolaris.* Bruce, Wisconsin,

September 4, 1924. The disk of cytoplasm between the guttulae often resembles a septum, especially when stained. This appears to be distinct from *Melasmia salicina* Lev. which Tulasne considered to be a spermogonial state of *Rhytisma salicinum* and which he described and figured in *Carpologia* III, p. 119, tab. XV, fig. 15–17. The question as to whether these collections represent one species or two is left open for the present.

[In 1925 numerous collections were made on various species of Salix agreeing with the description given above the conidia being acute at one end suggesting a boat in their shape. No collection was made on Ilex in 1925. The appearance of ascomata of *Rhytisma nemopanthis* Pk. sometimes suggested this fungus but this was due to development of *Ramularia nemopanthis* Pk. at the periphery of the ascomata.

The collection on Salix petiolaris is taken as the type of the species. I am indebted to President Dearness for the information that this was issued in *Fungi Columbiani*, 2593 under the name *Tuberculina davisiana* Sacc. & Trav. which belongs to a very different plant.



Gloeosporium niveum n. sp.

Left; Portion of a section of an immature ascoma of *Rhytisma prini* and of an acervulus, ac, from which the conidia have fallen. Upper right; 6 Conidia from *Rhytisma salicinum*. Lower right; 6 Conidia from *Rhytisma prini*.

Drawn with the aid of camera lucida by Lenette M. Rogers.

On leaves of *Betula alba* from Port Wing are large dead areas on the upper surface of which are acervuli bearing fuligenous sporules 9–10 x 6 μ on hyaline conidiophores. The fungus is probably saprophytic and has been referred to *Melanconium bicolor* Nees.

Cylindrosporium triostei Kell. & Swingle. On *Triosteum perfoliatum*. Haugen and Bruce. In the collection from Bruce the acervuli are nearly all epiphyllous.

In May and June 1924 collections of a Mucedine on leaves of *Cynoglossum officinale* were made at Madison and Cross Plains. The following notes were made from these collections: Spots dark brown, definite, circular to oval, 5–15 mm. in diameter; conidiophores mostly epiphyllous, fasciculate, hyaline, continuous or septate, 30–60 x about 3 μ; conidia hyaline, cylindrical to fusoid, mostly acute, straight, continuous or sometimes with a more or less distinct median septum, catenulate, 10–30 x 2½–3½μ. This is near *Ramularia cynoglossi* Lindr. from which it differs especially in the slender acute conidia. It appears to be conspecific with the parasite that occurs in Wisconsin on leaves of *Lappula virginiana* which was recorded in "Notes" I, p. 89 under the name *Ovularia asperifolii* Sacc. var. *Lappulae* Davis. It is perhaps better to consider the form that occurs in Wisconsin on Lappula and Cynoglossum as a species distinct from those that occur in Europe on related Boraginaceae and I have labeled these collections **Ramularia lappulae** (Davis) n. comb.

Ramularia gracilipes n. sp. Spots orbicular to subquadrangular, dark purple above, lighter below, 5–10 mm. in diameter with a sharply delimited white central portion 1–3 mm. in diameter; conidiophores hypophyllous on the central white portion, fasciculate from a prominent tubercular base, hyaline, slender, usually straight, often septate, sometimes denticulate below the apex, 40–75 x 2–3 μ; conidia hyaline, straight, cylindrical to fusoid-cylindrical, often more or less acute at one or both ends, frequently with a median septum, 20–40 x 3½ μ. On leaves of *Cornus alternifolia*. Bruce, Wisconsin, September 4th, 1924.

Ramularia artemisiae n. sp. Spots brown, of the width of the leaf lobe and 3–5 mm. long the entire lobe usually becoming dead and brown; conidiophores on either surface, densely fasciculate from a more or less prominent light brown base, hyaline, erect or assurgent, lax, 35–80 x 1½–3 μ; conidia hyaline, straight, cylindrical to fusoid, usually more or less acute, 0–3 septate, 12–30 x 2–4 μ. On leaves of *Artemisia caudata* or related species. Lewis, Wisconsin, August 2, 1924.

Cercoseptoria minuta n. sp. Spots pale, extending to the midrib, immarginate, ½–2 cm. in length; fasciculi hypophyllous, scattered, penicillate, composed of condia arising from a small, apparently substomatal, tubercle or plexus, hyaline, straight or somewhat curved, 50–60 x 1 μ. On leaves of *Campanula aparinoides,* Wyeville, Wisconsin, July 7, 1923. The generic name is used in the sense suggested in "Notes" VII, p. 401. A very delicate species. Possibly a state of the parasite occurring on this host that develops pycnidia and that was recorded in the provisional list under the name *Septoria campanulae* (Lev.) Sacc.

Because of a prior use of Septoriopsis as a generic name by Fragoso and Paul, Petrak has proposed Cercoseptoria to replace Septoriopsis Stevens & Dalbey. (*Ann. Mycol. 23:* 69).

Notes on Distribution and Abundance.

Ustilaginales

Ustilago osmundae Pk. Not frequent or abundant. Collections have been made in 5 localities. Two of them are in the central portion of the state, the others in the northwestern portion where it develops more abundantly.

Ustilago Zeae (Beckm.) Unger. Common and often abundant in corn fields.

Ustilago rabenhorstiana Kuehn. This appears to be rare in Wisconsin but may be abundant where it occurs.

Ustilago sphaerogena Burr. This has been collected at Millville and Madison only, in the southern part of the state. It probably does not maintain itself in Wisconsin but is occasionally introduced.

Ustilago Neglecta Niessl. Usually common and abundant.

Ustilago striaeformis (West.) Niessl. Sometimes abundant in meadows on *Phleum pratense,* less so on *Agrostis alba.* There are two collections on *Poa pratensis.* All are from the southern portion of the state. *Elymus canadensis* was given as a host in the provisional list but I find no specimen on that plant.

USTILAGO CALAMAGROSTIDIS (Fckl.) Clint. But a single specimen collected by A. B. Stout in southern Wisconsin.

USTILAGO AVENAE (Pers.) Jensen.

USTILAGO LEVIS (Kell. & Sw.) Magn. The oat smuts are found more or less abundantly throughout the state.

USTILAGO PERRENNANS Rostr. There is but one Wisconsin specimen in the herbaria.

USTILAGO LONGISSIMA (Sow.) Tul. Rather common on *Glyceria grandis* throughout the state.

USTILAGO LONGISSIMA MACROSPORA Davis. The variety occurred abundantly at the type station on *Glyceria septentrionalis* (then known as *G. fluitans*) which was long since destroyed because of the needs of agriculture. It is not known to be present in the state at the present time. It has been collected in Canada by Dearness and is reported to be distributed through central Europe. Bauch has reported interesting differences in the germination of the spores of the variety and of the type. (*Zeitschr. f. Bot.* 15: 241–279 [1923]).

USTILAGO SPERMOPHORA B. & C. This has been seen in the southern part of the state only where it is rare.

USTILAGO MACROSPORA Desm. Reported by Clinton as occurring in Wisconsin but it has not been seen by the writer nor are there Wisconsin specimens at Madison.

USTILAGO TRITICI (Pers.) Rostr.

USTILAGO HORDEI (Pers.) Swingle.

USTILAGO NUDA (Jensen) Kell. & Sw. are more or less common in grain fields in Wisconsin as elsewhere.

USTILAGO LORENTZIANA Thuems. This has been collected at Madison but is rare.

USTILAGO OLIVACEA (Dc.) Tul. This was collected in 1902 at the outlet of Lost lake in Vilas county which abuts on the northern peninsula of Michigan. It has not been seen in the state since.

USTILAGO UTRICULOSA (Nees) Tul. Not a rare species in Wisconsin and not restricted in range.

USTILAGO OXALIDIS Ell. & Tracy. The collection by Tracy in southwestern Wisconsin in the only one known to have been made in the state.

SPHACELOTHECA CRUENTA (Kuehn) Potter. This was collected at Madison by Trelease according to Potter.

SPHACELOTHECA SORGHI (Lk.) Clint. This is sometimes abundant in sorghum fields.

SPHACELOTHECA HYDROPIPERIS (Schum.) DBy. Not uncommon. Most frequently seen in the northern half of the state.

CINTRACTIA CARICIS (Pers.) Magn. Throughout the state. Like most smuts this varies much in abundance. Some years it is frequently observed and abundant while in other seasons it may not be seen at all.

CINTRACTIA SUBINCLUSA (Koern.) Magn. Observed at but one station which was in southeastern Wisconsin and where it was fairly abundant.

CINTRACTIA JUNCI (Schw.) Trel. Usually abundant where it occurs but in some years it is not seen. The collections are from the southern portion of the state.

SCHIZONELLA MELANOGRAMMA (Dc.) Schroet. A common and abundant species in southern Wisconsin. There are no specimens from the northern part.

SOROSPORIUM PANICI-MILIACEI (Pers.). Takahashi. This was collected at Madison in 1911 and 1912 and at Baraboo in 1918. It was referred to the following species in the Provisional List.

SOROSPORIUM SYNTHERISMAE (Pk.) Earl. Common and abundant where the host occurs on sandy lands in southern Wisconsin.

TILLETIA FOETENS (B. & C.) Trel.

TILLETIA TRITICI (Bjerk.) Wint.

With the revival of wheat growing in Wisconsin during the world war bunt became common, usually the latter species.

TUBURCINIA CLINTONIAE Kom. Rare. The three localities where it has been seen are in the southeastern, southern and northwestern parts of Wisconsin. In each case the host is *Streptopus roseus* the citation of *Smilacina stellata* being erroneous.

UROCYSTIS OCCULTA (Rabh.) Wallr. This occurs occasionally in rye fields but does little damage.

UROCYSTIS AGROPYRI (Preuss) Schroet. This occurs in southern Wisconsin on Elymus. A collection on *Hordeum jubatum* was made by Toole and Bennet in northeastern Wisconsin.

UROCYSTIS CEPULAE Frost. Occurs in onion fields in the southeastern part of the state.

UROCYSTIS ANEMONES (Pers.) Schroet. Common in the southern portion of the state.

UROCYSTIS WALDSTEINIAE Pk. Collected in two localities in northern Wisconsin in 1893. It has not been seen since.

ENTYLOMA LINEATUM (Cke.) Davis. Common and abundant in the southern half of the state.

ENTYLOMA CRASTOPHILUM Sacc. This has been collected in southern Wisconsin only except for the collection on *Glyceria pallida* in the northern portion.

ENTYLOMA PARVUM Davis. This inconspicuous species probably occurs throughout the state.

ENTYLOMA NYMPHAEAE (Cunn.) Setch. Throughout the state. Sometimes abnudant, sometimes scarce.

ENTYLOMA MICROSPORUM (Ung.) Schroet. Frequent in southern Wisconsin on *Ranunculus septentrionalis* only.

ENTYLOMA RANUNCULI (Bon.) Schroet. Frequent and abundant in northern Wisconsin on *Ranunculus pennslyvanicus* only.

ENTYLOMA THALICTRI Schroet. Generally distributed and sometimes abundant.

ENTYLOMA MENISPERMI Farl. & Trel. Common in the southern half of the state.

ENTYLOMA FLOERKEAE Holw. This has been seen in southeastern Wisconsin only where it was locally abundant.

ENTYLOMA SANICULAE Pk. A rare species in Wisconsin. Collections have been made at Racine (1892 & '94) and Madison (1924) only, the latter on *Sanicula gregaria.*

ENTYLOMA AUSTRALE Speg. Common and abundant throughout.

ENTYLOMA LINARIAE VERONICAE Wint. Usually common and abundant at least in the southern portion.

ENTYLOMA LINARIAE GRATIOLAE Davis. This has been found in two localities in northern Wisconsin. As it has been but recently recognized it may be that it will be found to have a wider distribution.

ENTYLOMA LOBELIAE Farl. Variable in frequency and abundance from year to year.

ENTYLOMA COMPOSITARUM Farl. A common and abundant species but some of the host adapted races of which it appears to be composed are rather rare. It is most common on Lepachys and Ambrosia, least so on Senecio. It is sometimes

very abundant locally on *Eupatorium urticaefolium* while in other years it is not seen on that host.

ENTYLOMA POLYSPORUM (Pk.) Farl. Not uncommon on *Ambrosia artemisiaefolia* and *Rudbeckia hirta,* rare on other hosts. hosts.

BURRILLIA PUSTULATA Setch. Not frequent but usually abundant where it occurs.

DOASSANSIA ZIZANIAE Davis. This has been collected at Racine and Madison only. As the spore balls are formed in the central cavity of the lower internodes without external manifestation it is recognized only by splitting open the culms. It appears late in the season and has not been looked for at that time in the northern part of the state.

DOASSANSIA MARTIANOFFIANA (Thuem.) Schroet. Infrequent. It has been collected only on plants emersed by the recession of the water.

DOASSANSIA SAGITTARIAE (West.) Fisch. Throughout the state.

DOASSANSIA SAGITTARIAE CONFLUENS Davis. Also throughout the state.

DOASSANSIA OPACA Setch. This has been seen in the southern part of the state only where it is rare.

DOASSANSIA INTERMEDIA Setch. This has been found in the northern half of the state only. It is not frequent.

DOASSANSIA DEFORMANS Setch. This is one of the commoner species of the genius in Wisconsin and occurs throughout.

DOASSANSIA FURVA Davis. This has been collected in several localities none of which are in the southern portion. It is usually fairly abundant where it occurs.

DOASSANSIA ALISMATIS (Nees) Cornu. This was formerly the species most often seen but of late years it has not been so frequent. A cycle of abundance will probably come again.

DOASSANSIA RANUNCULINA Davis. This was thought to have disappeared from the state but it was found in very small quantity, barely enough to show its presence, at Shiocton in eastern Wisconsin and at Blue River in the southwestern part of the state. It may therefore again become abundant when conditions are favorable for successive years.

TRACYA LEMAE (Setch.) Syd. This has been collected in three widely separated localities. As it is very inconspicuous it probably has not a restricted range in the state and occurs more frequently than the collections would indicate.

COLEOSPORIUM SONCHI-ARVENSIS (Pers.) Lev.

UNIVERSITY OF WISCONSIN HERBARIUM,
MADISON, WISCONSIN, MARCH, 1925