NOTES ON WISCONSIN PARASITIC FUNGI. I.

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These notes are a continuation of the series of "Notes on Parasitic Fungi in Wisconsin" issued periodically by the late Dr. J. J. Davis, formerly Curator of the Herbarium at the University of Wisconsin. Unless otherwise noted, all collections cited were made during the 1938 season.

**Plasmopara pygmaea** (Ung.) Schroet. var fusca (Pk.) Davis on *Hepatica americana* (triloba). Dane Co., near Mazomanie, July 10. Apparently not uncommon on *H. acutiloba*, but seemingly rarely found on *H. americana*, the only previous collection being one by Davis from Laona, Forest Co.

**Phyllosticta apocyni** Trel. on *Apocynum cannabinum*. Dane Co., near Madison, July 3. Reported from LaCrosse Co. in 1882 by Trelease, but not collected since in Wisconsin on *A. cannabinum*. Trelease's specimen is not in the Herbarium. The conidia are slightly larger than the 3-4 x 5-7μ specified by Trelease.

**Phyllostica podophylli** (Curt.) Wint. on *Podophyllum peltatum*. Dane Co., near Pine Bluff, June 3; Mt. Vernon, June 13. The only earlier Wisconsin collection was made by Davis in 1930 at Big Bend, Waukesha Co.

**Septoria silenicola** Ell. & Mart. on *Silene stellata*. Columbia Co., Gibraltar Rock, June 28. Collected once by Davis at Racine, Racine Co. in 1889.

**Septoria** sp. on *Linaria canadensis*. Iowa Co., near Arena, June 17. Davis, Notes XVIII, p. 260 (1931) states, "On July 10, 1929 a collection of *Peronospora linariae* Fckl. on *Linaria canadensis* was made at Arena. On the dead stems are pale spots in which are pycnidia with black, rather firm thick walls and broadly conical ostioles. These pycnidia contain hyaline, lax, filiform scolecospores 30-50 x 1/2-1μ. The appearance suggests that the death of the host interfered with the normal develop-

77
ment of the sporules. Perhaps this bears relation to *Septoria cymbalariae* Sacc. & Speg." In 1938 similar material was collected in great abundance. The pycnidia appear well developed and there is nothing about the spores that suggests abnormality. If such were the case it would hardly be expected that identical correspondence with those originally found would occur. Furthermore, there is a high percentage of germination of the scolecospores in tap water, likewise an indication of normality. The Saccardian description of *S. cymbalariae*: "Spots subcircular, dark brown; pycnidia gregarious, punctiform, lenticular, broadly ostiolate, sooty, texture rather firm, parenchymatous; sporules piliform, subflexuose, 20-35 x 2.5-3 µ rather obtuse at the ends, pluriguttulate, septations obscure, hyaline. . . . In the French form pycnidia 50-60 µ diam.; sporules 15-20 x 1-2 µ". Plainly the spores of the form in question are not those of *S. cymbalariae*.

**Diophosphora geranii** Schroet. on *Geranium maculatum*. Dane Co., Madison, June 9. Collected at Madison in June 1888 by Trelease and at Viroqua, Vernon Co. in May 1930 by Davis. The spores are borne in definite pycnidia and are very distinctive. The fungus was formerly wrongly referred to *Pestalozziella subsessilis* Sacc. & Ell. (Davis’ Notes XX, p. 5, 1937).

**Piggotia fraxini** B.&C. on *Fraxinus americana*. Dane Co., near Blue Mounds, August 11. (A. E. Jenkins & Greene). The fungus is here amphibogenous and localized on large, isolated circular, dull purplish-green spots which are up to 1 cm. diam.

**Colletotrichum** sp. on *Sanguinaria canadensis*. Dane Co., near Blue Mounds, August 11. Doubtfully parasitic. No. report in Seymour’s Host Index of *Colletotrichum* on *S. canadensis*.

**Botrytis** sp. on *Ranunculus abortivus*. Sauk Co., Peewit’s Nest, May 21. Seemingly parasitic on young leaves, producing immarginate spots with a water-soaked appearance. The spots tend to be wedge-shaped, tapering inward from the leaf margin. Conidiophores hypophyllous, arising from the leaf parenchyma, sordid yellowish, 2-3 septate, granular, up to 550 x 15 µ, several times branched near the summit; branches up to 30 x 8 µ; at the end of each principal branch several wrinkled knob-like inflations, each with numerous minute sterigmata; conidia broadly
ellipsoidal, smooth, yellowish, 14-21 x 10-14μ, wall about 1μ thick, densely clustered, capitate on each fertile knob. This should perhaps be referred to Botrytis cinerea Pers.

Cercospora dulcamaeae (Pk.) Ell. & Ev. on Solanum dulcamara. Dane Co., near Mazomanie, July 10. Ellis and Everhart state: The hyphae form indefinite, subolivaceous, or greenish-lead-colored patches on the lower surface of the leaf, and also more sparingly so above but without any distinct spots'. In reference to a collection made by Davis at Ellison Bay, Door Co., August 1929, he states 'the spots are dark blue on both surfaces reminding one of a wood stain'. In the Mazomanie collection the conidiophores are borne on definitely delimited, arid white spots with a wide blackish-brown border. On the basis of microscopic characters the specimen is referred to C. dulcamaeae.

Cercospora leptandraceae J. J. Davis on Veronica virginica. Dane Co., Madison, July 23. This distinctive species is based on a single collection made at Blue River, Grant Co. in 1923. The occurrence of the identical form in some abundance at Madison confirms the validity of the species.

Cercospora ziziae Ell. & Ev. on Zizia aurea. Dane Co., Madison, July 3. The only earlier collections made by Davis at Racine, Racine Co. some forty years ago.

Additional Hosts

Synchytrium cellulare Davis on Pycnanthemum virginianum. Dane Co., near Mazomanie, July 10. Summer sporangia scarce in this material; resting spores abundant. Galls of considerable size are produced, a fact perhaps correlated with the moderately thick leaves of P. virginianum. With heavy infestation there is much distortion of the host. Seymour does not list Synchytrium as occurring on Pycnanthemum.

Erysiphe Polygoni DC. on Thalictrum revolutum. Collected at Racine, Racine Co., September 1, 1886 by J. J. Davis. This record is based on a specimen in Davis' personal herbarium labelled 'Erysiphe communis (Wall.) on Thalictrum cornuti, Racine, Wis. 9/1/86.' T. cornuti is a synonym for T. polygamum which does not occur in Wisconsin. The leaves comprising the specimen definitely show the glandular-puberulent character of
T. revolutum. In Davis’ Provisional List Thalictrum dasycarpum is cited as a host for E. POLYGONI. No specimen of E. POLYGONI on T. dasycarpum was to be found in either the Davis or the University Herbarium and it seems probable that the record is based on the above-mentioned specimen on T. revolutum. However, T. dasycarpum abundantly infested with E. POLYGONI was collected by R. I. Evans at Pine Hollow, Sauk Co., June 26, 1938.

Elsinoe veneta (Speg.) Jenkins on Rubus occidentalis. Dane Co., near Blue Mounds, August 11. (A.E. Jenkins & Greene. Det. by Jenkins). Gloeosporium venetum Speg. is reported by Davis on Rubus spp. but there seems to be no specimens on R. occidentalis in the Herbarium.

Eocronartium muscicola (P. ex Fr) Fitzp. on Climacium americanum. Iowa Co., near Ridgeway, R. I. Evans, July 3. Nothing is reported on this host in Seymour’s Host Index, and there is apparently no published record of Eocronartium in Wisconsin.

Phyllosticta trillii Ell. & Ev. on Trillium grandiflorum. Dane Co., near Blue Mounds, June 3.

Septoria convolvuli Desm. on Convolvulus arvensis. Dane Co., Madison, June 30.

Septoria verbenae Rob. on Verbena stricta. Dane Co., two miles east of Blue Mounds, July 5.

Septoria violae Westd. on Viola eriocarpa. Dane Co., near Mt. Vernon, June 13.

Colletotrichum trillii Tehon on Trillium declinatum. Dane Co., near Mt. Vernon, July 5. Somewhat dubiously referred to Tehon's form. Davis in Notes XX, p.2 (1937), cites a possible collection of this species on T. recurvatum. The fungus on T. declinatum seems to be truly parasitic.

Ramularia subrufa Ell. & Holw. on Smilax herbacea var. pulverulenta. Columbia Co., Gibraltar Rock, June 28. Davis made collections of R. subrufa on this host, but failed to report them.

Cercospora filiformis J. J. Davis on Thalictrum dasycarpum. Dane Co., near Mazomanie, August 14. Davis described
C. FILIFORMIS from a collection on leaves of *Anemone patens* var. *Wolfgangiana* made at Millston, Jackson Co., in June 1914. Several subsequent collections were made on the same host. On *Anemone* the spots are linear, brown, immarginate, 1/2-4 cm. x 1-2 mm., with conidiophores amphigenous. On *Thalictrum* the conidiophores are, largely at least, hypophyllous on small (1-3 mm. diam.) circular to ovoid spots which are pale brown with a dark brown border and plainly visible on both leaf surfaces. The fungus is referred to C. FILIFORMIS on the basis of the distinctive conidia, the general microscopic habit and the admittedly none too close host relationship.

**CLADOSPORIUM NERVEALE** Ell. & Dearn. on *Euphorbia corollata*. Columbia Co., Highway J, five miles north of Lodi, July 8. This checks well with C. NERVEALE on *Rhus typhina*. The parasite is largely confined to the midrib region.

**CERCOSPORA BETICOLA** (Ces.) Sacc. on *Cycloloma atriplicifolium*. Sauk Co., near Spring Green, July 29, 1935. (J. J. Davis & Greene). Material was sent to Professor Chupp who made the determination. Davis' unpublished notes as follows: 'Spots definite, circular, pale brown with a narrow purplish border and often with a white center, 2-3 mm. in diameter; conidiophores tufted, fuscous, straight or geniculate, sometimes curved, 30-80 x 4μ; conidia hyaline, straight or somewhat curved, upwardly attenuate, septate, 65-120 x 3μ.'

**CERCOSPORA SMILACIS** Thüm. on *Smilax herbacea* var. *pulverulenta*. Dane Co., near Mt. Vernon, August 17. Determined by Professor Chupp.

**PHLEOSPORA MORI** (Lev.) Sacc. on *Morus rubra*. Dane Co., Madison, October 28.

**ADDITIONAL SPECIES**

**TAPHRINA SACCHARI** Jenkins on *Acer saccharinum*. Dane Co., Madison, June 1904 (collector?). This TAPHRINA (Jenkins, A. E., J. Wash. Acad. Sci. 28: 853-8 (1938)) was found by Jenkins on a specimen in the University of Wisconsin Herbarium labelled GLOEOSPORIUM SACCHARINUM E. & E.
Mycosphaerella thalictri (Ell. & Ev.) Lindau on Thalictrum dasycarpum. Dane Co., near Mazomanie, July 10. Seymour does not list T. dasycarpum as a host.


Vermicularia hysteriiformis Pk. on Caulophyllum thalictroides. Dane Co., near Blue Mounds, August 11. Peck, describing V. hysteriiformis, states in part "A species very distinct from all others by the shape of the perithecia which appear longer than broad through the epidermis, resembling in this respect some species of Hystereum". A fungus which is apparently Peck's species was found sparingly on stems and abundantly on leaves of living blue cohosh. On leaves the acervuli are small and do not show the hysteriform character, but in type of setae and conidia are identical with those on the stems. On leaves the acervuli are amphigenous, scattered, superficial, 40-120μ diam. on more or less wedge-shaped, dead, brown areas, the dead areas frequently with a yellowish margin next to the still living portions of the leaflet; setae numerous, blackish-brown, septate, tapering, acute, extremely variable in length, up to 260μ long by 7μ wide at the base; conidia 17-24 x 3-4.5μ, boat-shaped to falcate, guttulate; conidiophores very short, up to 10 x 3μ, inconspicuous among the numerous setae. The fungus seems to be definitely parasitic on stems and leaves. On leaflets the dead areas apparently originate at the margins, progressively involving larger areas until the entire leaflet is killed. Comparison of a specimen of Vermicularia podophylli Ell. & Dearn. on dead fruit of Podophyllum peltatum with V. hysteriiformis shows acervuli 100-200μ diam., with setae shorter, less acute and more uniform in length, 100-125μ. The conidia, however, are very similar and it seems probable that V. hysteriiformis and V. podophylli are closely allied if not identical.


Melanconium sphaeroideum Lk. on Alnus sp. Sawyer Co., near Hayward, E. M. Gilbert, April 20. On twigs; seemingly parasitic.
SEPTORIA PLANTAGINEA Pass. var. PLANTAGINIS-MAJORS Sacc. on Plantago purshii. Dane Co., near Mazomanie, July 10. Seymour does not report SEPTORIA on Plantago purshii. Comparison with a specimen on Plantago major, collected at Winnipeg, Manitoba shows similar spores (about 30-35 x 1) and pycnidia but slightly smaller. The pycnidia on P. purshii show a more pronouncedly rostrate character than do those on P. major.
