

NOTES ON WISCONSIN PARASITIC FUNGI. XXVII

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The collections referred to in this series of notes were, unless indicated otherwise, made during the season of 1960.

Undetermined powdery mildews in the OIDIUM stage have been collected on 1) *Cornus rugosa*. Columbia Co., Gibraltar Rock County Park, June 20; 2) on the inflorescence of *Cornus femina*, with various collections in the Madison area from 1946 to the present, a very striking early season manifestation which it seems quite certain cannot be *Phyllactinia corylea* (Pers.) Karst., the only determined species reported on this host from Wisconsin; 3) on *Valeriana edulis*. Jefferson Co., near Waterloo, July 28; 4) on *Aronia melanocarpa* and 5) on *Amelanchier laevis*. Sauk Co., Devils Lake State Park, September 15; and 6) on *Chrysanthemum coccineum* (cult.), Dane Co., near Cross Plains, August 26. In general, the development of powdery mildews was very limited in southern Wisconsin in 1960.

PERISPORIUM WRIGHTII B. & C. collected on *Opuntia macrorhiza* near Pine Bluff, Dane Co., by D. Ugent, July 17, is immature, as are most specimens I have seen of this fungus, but the perithecia here contain large numbers of hyaline, rod-shaped microconidia.

LEPTOSPHAERIA sp., on the dead tips of otherwise green and vigorously growing leaves of *Carex vulpinoidea*, was collected at Madison, July 6. The falcate, olivaceous, triseptate ascospores, 22–25 x 5–6 μ , have, as is often the case in this genus, one of the central cells slightly enlarged. This would seem close *L. caricicola* Fautr. (ascospores triseptate, 18–21 x 4 μ) or to *L. caricina* Schroet. (ascospores triseptate, 20 x 5 μ) which for their part would seem to be probably identical.

LEPTOSPHAERULINA sp. appears parasitic on dark brown lesions on leaves of *Lactuca biennis*, collected at Madison, June 28. The thin-walled, pale brown perithecia are gregarious, subglobose, about 150 μ diam. The asci are broadly ovoid to almost subglobose, approx. 40–45 x 50 μ . There is no evidence of paraphyses or paraphysoids. Ascospores are subhyaline to yellowish, broadly clavate, 28–30 x 9.5–11 μ , indistinctly muriform, perhaps slightly immature. This might almost as well be referred to the hyaline-spored *Pleospaerulina* Pass. which, according to v. Hoehnel, should be replaced by *Pringsheimia* Schulzer.

ASTERINA RUBICOLA Ell. & Ev. is fairly common on leaves of *Rubus strigosus* in the fall in southern Wisconsin. As a general thing, the small shining-black ascomata, usually clustered in groups on small but well-defined spots, contain no spores of any sort at this season, but in a collection made near Verona, Dane Co., September 28, a small percentage of the fruiting bodies contain numerous *Coniothyrium*-type conidia which are brownish-olivaceous, globoid, subgloboid, or broadly ellipsoid, 2-3 x 2.5-3.5 μ . The ascomata with the spores differ in no external respect from their sterile neighbors, so their detection is a hit or miss affair.

PHYLLACHORA GRAMINIS (P.) Fckl. fruiting bodies (presumptive) on *Elymus canadensis*, collected at Madison, October 12, contain very large numbers of laxly curved, slender, hyaline scolecospores, about 12-17 x .8-1 μ . There is some evidence of an accompanying incipient ascigerous stage.

CHRYSOMYXA PIROLATA Wint. (*C. pyrolae* (DC.) Rostr.) is represented by a number of uredial specimens in the University of Wisconsin Herbarium, but telia have been unreported until now. Re-examination of duplicate material of a specimen on *Pyrola elliptica*, collected near Verona, Dane Co., May 3, 1948, shows germinated telia in some abundance, which were, inexplicably, overlooked at the time.

MELAMPSORA ABIETIS-CANADENSIS (Farl.) Ludw. I on *Tsuga canadensis*, so far as Wisconsin material is concerned, has been represented up to now by three scanty specimens on leaves, all from the far northern part of the state. In June at a station near La-Valle, Sauk Co., there was observed a massive infection of large, old trees with the rust strictly confined to the cones, so far as noted. Perhaps as many as a fifth of the large crop of young cones were a bright orange-yellow hue from the exposed caeomoid spore masses, a most striking sight.

UROMYCES sp., on a phanerogamic specimen of *Carex richardsoni* in the University of Wisconsin Herbarium, was submitted to G. B. Cummins who states that he is unable to identify it and that it is not the usual sort of rust encountered on North American Carices. Since the specimen was collected in 1879 in the environs of Green Bay, Wis. it seems quite certain the habitat has long since been destroyed. The urediospores are light cinnamon-brown, globoid, broadly ellipsoid, or obovoid, with wall about 1.5-2 μ thick, finely echinulate, pores 2-3(-4), approx. equatorial. (15-)18-20(-23) x 22-25(-28) μ . The pallid olivaceous teliospores are ellipsoid to broadly ellipsoid, with wall about 3-5 μ thick above by 1.5 μ at sides, 17-20 x 22-26(-30) μ , pedicel very short. Many of the teliospores

had germinated and Cummins thinks it probable that they are of the current season and thus germinated without dormancy.

PHYLLOSTICTA MINUTISSIMA Ell. & Ev., common on leaves of *Acer saccharum* in Wisconsin, is not ordinarily very destructive, being prominent usually only toward season's end. However, in early August, sizeable planted specimens of sugar maple in the University of Wisconsin Arboretum at Madison suffered near total defoliation, following a massive infection with *P. minutissima*. The attack proceeded from the leaf tips inward, causing reddish discoloration, drying, and very strong curling.

PHYLLOSTICA APOCYNI Trel. on *Apocynum androsaemifolium*, collected at Parfrey's Glen, Sauk Co., September 16, 1959, has some pycnidia, associated with the normal *Phyllostica*-type and macroscopically indistinguishable, which contain very large numbers of hyaline microspores, approx. 3-4 x 1-1.5 μ .

PHLLOSTICAE of uncertain affinities, and sometimes of questionable parasitism, are found in the course of every collecting season. It seems worthwhile to continue recording descriptive notes of these and to file them in the Wisconsin Cryptogamic Herbarium, in the hope that some if not all may eventually be identified. (In the past certain small and inadequate collections have ultimately served to supplement later large specimens on which descriptions of new species of *Phyllosticta* have been based.) Ten undetermined *Phyllostictae* are listed here:

1) On *Carex sartwellii* at Madison, October 10. Lesions are small, angled, and reddish-brown, the pycnidia blackish, small and flattened, about 75-100 μ diam. The conidia are slender, rod-shaped microspores. Associated with and perhaps connected with *Cercospora caricis* Oud.

2) On *Carex blanda* at Gov. Dodge State Park, Iowa Co., June 24. This appears parasitic on indeterminate brownish areas on the leafy bracts of the inflorescence. The small, blackish, thick-walled, sublenticular pycnidia are hypophyllous, multiseriate and substomatal, mostly about 35-40 μ in short diameter, but up to 50 μ or a little more. They are rather widely open, tending to conform with the stomatal aperture, and verge upon the melanconiaceous. The hyaline conidia are of the microtype, about 4-5 x 1-1.3 μ .

3) On *Carya ovata* at Perrot State Park, Trempealeau Co., June 17, 1959. The lesions are broadly subfusoid or suborbicular, medium brown with a narrow darker border, about .3-.5 cm. diam., and usually oriented along the principal lateral veins of the leaflet. The epiphyllous pycnidia are sooty brown, gregarious to clustered

centrally on the spot, subglobose, imperfectly developed apically, about 50–80 μ diam. The hyaline conidia appear to fall into two classes, 1) 2.5–3 x .7–1 μ , short rod-shaped, and frequently biguttulate, very numerous, and 2) 5–6 x 1.5–1.7(–2) μ , subfusoid, and comparatively few. The larger conidia are quite similar to those of *Phyllosticta caryae* Peck, as represented in a specimen collected by Peck at Piffard, N. Y. and labeled “ex type”. *P. caryae* has been reported from Wisconsin, but there is no verifying specimen at present in the Wisconsin Herbarium.

4) On *Rubus occidentalis* at Madison, August 1. The conspicuous lesions are dull brown with yellowish halo, orbicular to variously elongate. The pallid-brownish pycnidia are scattered, subglobose, approx. 125–140 μ diam.; conidia hyaline, cylindrical, faintly biguttulate, (5–)7–10 x (2–)2.5–3 μ . These conidia are longer and larger than those of other species I find reported on *Rubus*. They appear well matured and show no evidence of incipient septation.

5) On *Cornus obliqua* near Jefferson, Jefferson Co., July 28. The hyaline, broadly ellipsoid conidia, 5–7 x 2.5–3 μ , are somewhat smaller than those of *Phyllosticta cornicola* (DC.) Rabh., and the subglobose, blackish pycnidia, approx. 60–75 μ diam., much smaller.

6) On *Asclepias phytolaccoides* near Verona, Dane Co., September 28. The spots are greenish-black and angled, approx. 2–7 mm. diam. The pycnidia are scattered to gregarious, globose, black, appearing non-ostiolate, small, about 50–65 μ diam. Hyaline microconidia, 3–4 x 1–1.3 μ are present in some profusion.

7) On *Solidago gigantea* in close association with *Ramularia serotina* Ell. & Ev., Gov. Dodge State Park, Iowa Co., July 21, 1959. The epiphyllous pycnidia occur usually near the margins of the small, rounded, brownish-ashen spots, which are assumed to have been produced primarily by action of the *Ramularia*. Pycnidia are dark grayish, subglobose, approx. 100–150 μ diam., while the conidia are hyaline, short-cylindric to broadly ellipsoid, or occasionally subfusoid, 4–6(–7) x 2–2.5 μ . The conidia are of about the same dimensions as those of *Phyllosticta madisonensis*, described on this host from Wisconsin, but the fungus does not seem similar in other respects.

8) On *Aster macrophyllus* at Wildcat Mt. State park, Vernon Co., September 9, 1959. Held out-of-doors in a wire cage at Madison until early May 1960. At the time of collection the pycnidia were scattered or clustered on large, conspicuous purple-brown spots. They were black, composed of dark, thick-walled pseudoparenchymatous cells, globose and somewhat erumpent, approx. 200–250 μ diam., with contents undifferentiated. Following the caging, and

produced presumably after overwintering, numerous hyaline, rod-shaped conidia, $4-7 \times 1.5-2 \mu$, were observed in the pycnidia. It seems possible that, in some instances, the caging of leaves may have influence in favoring the production of an imperfect as over a perfect stage, since the latter may sometimes depend on a very delicate balance of conditions, not realized in a cage, where the leaves tend to become appressed to one another.

9) On *Aster pilosus* at Madison, August 21. The pycnidia are closely clustered on dead upper stem leaves, or scattered singly on the adjacent stem. They are clear brown, subglobose, uniformly about 100μ diam. The conidia are hyaline, ellipsoid, $4-5 \times 2-2.5 \mu$.

10) On *Inula helenium*, Gov. Dodge State Park, Iowa Co., July 21, 1959. The lesions are brownish, orbicular, about 1 cm. diam. Pycnidia globose, thin-walled, brownish, about $75-100 \mu$ diam., the conidia hyaline, broadly ellipsoid, frequently biguttulate, $(2-)2.5-3 \times 4-6.5 \mu$. This may be identical with *Phyllosticta Inulae* Allesch., which has conidia of the same dimensions, but material for comparison is not available.

CONIOTHYRIUM (?) sp. parasitized thalli of the lichen *Dermatocarpon miniatum* (L.) Mann, collected by J. Looman at Nelson Dewey Memorial Park at Cassville, Grant Co., July 21, 1959. The brownish elevated mass of the parasite is deeply imbedded in the host medulla, and the algal layer has been forced aside, as is shown in sections. The imbedded, subrostrate, dark brown pycnidia are scattered in the uppermost layer of the elevated mycelial mass, but they are easily seen under a hand lens. They are subglobose, or somewhat flattened below and irregular in outline, approx. $60-75 \mu$ diam. The conidia are clear greenish-olivaceous, thin-walled, broadly ellipsoid, $3-4.3 \times 2.5-3.5 \mu$. Keissler's "Die Flechtenparasiten" was consulted, but no certain conclusion as to identity could be reached.

CONIOTHYRIUM sp. is epiphyllous on rounded ashen spots, approx. 2-4 mm. diam., on leaves of *Ribes missouriense*, collected in the New Glarus Woods Roadside Park, Green Co., September 21, 1959. The gregarious black pycnidia are subglobose to globose, approx. $150-175 \mu$ diam., the conidia smoky gray, ellipsoid or subfusoid, $4.5-6 \times 2.5-3 \mu$. Questionably parasitic.

CONIOTHYRIUM sp. occurs on leaves of two specimens *Ribes missouriense*, and on one of what appears to be *Ribes cynosbati*, the former from Cross Plains and Madison, Dane Co., respectively, collected in June and July, the latter from Ferry Bluff, Sauk Co., in June. The small, but conspicuous, ashen spots are rounded to elongate, mostly very irregular in outline. The pycnidia are epiphyllous, scattered to gregarious, blackish, subglobose, about $115-140 \mu$

diam. The numerous conidia are of a clear grayish shade, thin-walled, broadly ellipsoid or short-cylindric, approx. 4-6 x 2-3 μ . There is no evidence of insect action in connection with the spotting and it seems quite likely the fungus is parasitic. So far as appearance of spots is concerned, as well as in size of pycnidia, these specimens appear quite different from the 1959 collection on *R. missouriense* mentioned in the preceding note. Except for one obscure report which I have been unable to check adequately, all mention of *Coniothyrium* on *Ribes* appears to be based on specimens on stems and branches.

DARLUCA FILUM (Biv.) Cast. occurs on telia of *Puccinia asteris* Duby on *Aster pilosus*, collected at Madison, October 10. Development of this hyperparasite on a microcyclic rust is rare, although one earlier Wisconsin specimen on *P. asteris* is in the Wisconsin Herbarium.

STAGONOSPORA ATRIPLICIS (West.) Lind. on *Chenopodium album* from Madison, July 4, has some pycnidia which contain small, rod-shaped microconidia instead of the characteristic phragmospores.

STAGONOSPORA sp. is present in profusion on the leaves of a phanerogamic specimen of *Carex leptonevia* Fern., collected by J. J. Jones, August 16, 1954, near Winegar, Vilas Co. The blackish subglobose pycnidia are about 150 μ diam. The subhyaline spores are cylindrical to subcylindric, or subfusoid, straight or slightly curved, (25-)30-35(-40) x (4-)5-6 μ , 4-6 septate, often with slight constrictions at the septa.

STAGONOSPORA sp. heavily infected *Carex pennsylvanica* near Cross Plains, Dane Co., September 7. The elongate, indeterminate spots are yellowish- to reddish-brown, usually involving the narrow leaves from margin to margin. The affected areas are not necessarily distal, but often occur within the still green areas of the leaves. The pycnidia are scattered, mostly pallid brownish, occasionally somewhat darker, rather thin-walled and translucent, subglobose, approx. 90-150 μ diam. The conidia are hyaline, often guttulate or granulose, obtuse and cylindric, straight or slightly curved, 2-3 septate, 23-30(-33) x 7-8(8.5) μ . Where 3 septate, it sometimes appears as though division had occurred in a terminal cell without accompanying divisions in the other two. This fungus appears truly parasitic, in contrast to the sometimes doubtful specimens where pycnidia are confined to dead leaf tips.

STAGONOSPORA sp. occurs on tiny, white, translucent spots about 1 mm. diam. on *Circaea latifolia*, collected June 27 near Pine Bluff, Dane Co. The thin-walled, pale brown, subglobose pycnidia are epiphyllous, two or three per spot, approx. 75 μ diam. The spores

are cylindrical or subfusoid, straight or slightly curved, 13–18 x 2.5–3.5 μ , 1–3 septate. There seem to be no reports of any Sphaeropsidales on *Circaea*, other than an undetermined species of *Septoria* mentioned in my Notes XXVI.

STAGONOSPORA sp. collected on *Fraxinus pennsylvanica* var. *lanceolata* at Gov. Dodge State Park, Iowa Co., June 24, seems distinct from any other sphaeropsidaceous species with phragmospores or scolecospores reported on *Fraxinus* from Wisconsin. The conspicuous spots are tan colored, one or two per infected leaflet, suborbicular, with narrow, irregular, darker margins, about .5–1 cm. diam. The pycnidia are epiphyllous, light brown, subglobose, tending to collapse, deeply seated in the host tissue, approx. 75–125 μ diam., scattered to gregarious. The conidia are hyaline, straight to lax, or slightly sinuous, often more obtuse at one end than at the other, 23–32 x 3–3.5 μ , (2–)3 septate. Admittedly, this might be classed as a *Septoria*, various species of which have been reported on *Fraxinus*, but it is certainly not *S. besseyi* Peck, of which there are numerous specimens in the Wisconsin Herbarium.

SEPTORIA sp. on dead leaves of *Agrostis alba* at Devils Lake State Park, Sauk Co., September 15, has spores which in their dimensions seem to correspond fairly closely to the macrospores of *S. passerinii* Sacc., as described and figured by Sprague. This species, however, has been reported only on Hordeae. In the specimen on *A. alba* the scattered brown pycnidia are somewhat flattened, thin-walled and translucent, mostly about 125 μ diam. The spores are from almost straight to lax or strongly curved, approx. 23–28 x 2–2.5 μ , appearing obscurely 2 septate.

SEPTORIA sp. on dead areas on leaves of *Calamagrostis canadensis*, collected at Gibraltar Rock County Park, Columbia Co., June 20, in microscopic characters corresponds quite closely with *Septoria secalis* Prill & Delacr., as described and figured by Sprague in his "Diseases of Cereals and Grasses in North America", p. 253. For conclusive determination, however, more and better material would be desirable.

SEPTORIA sp. (or RHABDOSPORA?) occurs on flowering stems of *Zigadenus elegans*, collected near Eagle, Waukesha Co., July 22, 1959. The black, globose pycnidia are approx. 65–100 μ diam., scattered on elongate, light-colored areas on the stem. The conidia are hyaline, flexuous, tapering at one, or sometimes both apices, rather obscurely 1–3 septate, 20–33 x 1–1.5 μ . A *Septoria* was collected on leaves of this host at the same station in 1951, and reported on in my Notes XVII. It had continuous spores which were definitely thicker in relation to length, and pycnidia which averaged about 100 μ diam.

SEPTORIA sp. developed on leaves of *Viburnum acerifolium*, collected at Devils Lake State Park, Sauk Co., October 10, 1959, and held out-of-doors over winter in a wire cage at Madison until May 1960. The freshly collected leaves were still green, with conspicuous, angled, sordid-brownish spots. The pycnidia were inconspicuous, scattered to gregarious, deeply sunk in the host tissue, but with rather thin, translucent walls and with contents undifferentiated. The overwintered pycnidia showed a surprising further development of the wall which had become black and is composed of dark, thick-walled mostly isodiametric cells. These mature pycnidia are subglobose, approx. 125–160 μ diam., with a prominent ostiole, and with spores which are hyaline, slender and acicular, straight or slightly curved, 23–38 x 1–1.3 μ , appearing continuous. This is not *Septoria viburni* West., reported on *Viburnum opulus* (cult.) in Wisconsin, as that species has cylindrical guttulate spores. I have found no record of other *Septorias* on *Viburnum*. It seems possible that the October collection constituted an overwintering stage of a *Septoria* which had developed normally earlier in the season.

SEPTORIA sp. occurs on dead tips of leaves of *Chrysanthemum coccineum* (cult.), collected near Cross Plains, Dane Co., August 28. The tiny pycnidia, approx. 60–75 μ diam., are thin-walled and fragile and closely crowded. The hyaline spores appear continuous, are slightly curved, and are about 15–20 x 1.2–1.7 μ . Most of the species reported on *Chrysanthemum* and allied hosts have spores which are much longer than these.

LEPTOTHYRIUM (?) sp. occurs on leaves of *Viburnum acerifolium* (cult.), collected at Madison, September 26. The fruiting structures are subcuticular in origin, lifting the cuticle as they develop under it. The spots are orbicular, reddish-brown with narrow purplish borders, approx. .5–1 cm. diam. The fruiting bodies are convex above and flattened below, non-ostiolate, black, approx. 100–125 μ diam., and scattered on the spots. Conidiophores are hyaline, basal and rudimentary, about 6–7 x 2 μ , the conidia pallid greenish, broadly ellipsoid, 5–6 x 3–3.5 μ . Perhaps parasitic.

GLOEOSPORIUM CANADENSE Ell. & Ev. (*Discula quercina* (West.) v. Arx) is common on *Quercus alba* and *Q. macrocarpa* in Wisconsin, and has spores about as described by Ellis and Everhart, 10–14 x 3.5–4.5 μ , narrowly ellipsoid or fusoid. In a specimen on *Q. macrocarpa*, collected August 26 near Cross Plains, Dane Co., the conidia are 12–14 x 7–8.5 μ , broadly oval in outline. Fruiting is essentially hypophyllous and is confined to segments of the principal veins, producing yellowing on the upper leaf surface along the infected veins, but without the reddish-brown and extensive dead areas commonly seen in *G. canadense* infections. At the time of collection the leaves

affected were being prematurely shed. It seems doubtful that the Cross Plains specimen represents merely a variant manifestation in view of the much greater spore width and the quite different lesions produced.

DISCULA sp. (following the treatment of von Arx in his revision of *Gloeosporium*) is present in small amount on leaves of *Quercus bicolor*, collected near Avon, Rock Co., September 3, 1959. The lesions are pale reddish, rounded, about .5 cm. diam. The acervuli are gregarious, subepidermal, epiphyllous but deeply sunken to a point about midway between upper and lower epidermis, and hemispherical in outline, approx. 100–125 μ diam. Conidiophores are subcylindric, appearing somewhat grayish in mass, very closely ranked over the entire surface of the acervulus, 10–12 μ long. The conidia are hyaline, continuous, fusoid or occasionally narrowly subcylindric, 5–8 x (1–)1.5(–2) μ . Quite similar to *Discula quercina* (West.) v. Arx (*Gloeosporium quercinum* West.) in general characteristics. The latter, however, is hypophyllous and has conidia which are longer and somewhat wider than those of the specimen under consideration.

DISCULA sp. occurred on reddish-brown, wedge-shaped apical portions of leaves of *Ribes diacantha* (cult.) at Madison, August 22. The fruiting body superficially resembles a pycnidium, but in section is seen to be a somewhat elevated acervulus, approx. 150 μ wide by 60 μ high, subepidermal with a well-developed blackish mycelial covering above, but with a wide central aperture. The base and sides of the acervulus are lined with closely ranked, slender, hyaline conidiophores about 12–15 x 2 μ , while the conidia are hyaline, broadly ellipsoid, subfusoid, or fusoid, about 5–7 x 2–3 μ .

PHLYCTAENA (?) sp. occurs on leaves of *Desmodium nudiflorum*, collected near Browntown, Green Co., July 19. The acervuli appear subepidermal in origin and in fact verge upon a pycnidial structure. The conspicuous, orbicular, dull reddish-brown spots are mostly about .5 cm. diam. In accommodation to the very thin leaf the acervuli are noticeably flattened, and are mostly about 60–75 μ in broad diameter, pallid brownish, very inconspicuous and few and scattered on the spots. The conidiophores are more or less bottle-shaped, approx. 9–12 x 2 μ , rather loosely ranked. The conidia are hyaline, from almost straight to mostly curved and falcate, usually broadest in the middle and tapering toward the ends, appearing continuous, 22–25 x 1.5–2 μ . Certainly not far from *Septoria*. The tentative assignment to *Phlyctaena* attempts to follow the treatment of von Arx in his revision of *Gloeosporium*.

PHLEOSPORA ANEMONES Ell. & Kell. has been found several times on *Anemone cylindrica* in Wisconsin. That the large, black, closely

grouped fruiting structures are close to *Septoria* cannot be denied and the fungus has in fact been so designated by some workers. In the fall host plants are sometimes found bearing black fruiting structures which externally correspond closely to those of *Phleospora anemones*, but whose contents are not differentiated and do not become so prior to the onset of winter. Host leaves bearing these structures were collected near Cross Plains, Dane Co., in September 1959, placed in a wire cage, and overwintered out-of-doors at Madison until early May 1960. It had been thought that a perfect stage might develop, but examination showed profuse production of typical *Phleospora* spores, indicating that this fungus, like a number of others observed by the writer, may live from year to year without production of a perfect stage.

INULA HELENIUM, collected at Gov. Dodge State Park, Iowa Co., July 21, 1959, bears an unidentified monilaceous fungus which seems perhaps to fall within the range of what has been called *Ovularia*. The tufted fascicles are epiphyllous on more or less extensive, sordid brownish areas. The hyaline, clustered conidiophores, more or less widely divergent from a small, brownish, elevated stroma, are approx. $15-20 \times 2.5-3 \mu$, simple, with a single scar at the narrowed tip, or subgeniculate and denticulate at the tip. The conidia appear to have been catenulate and are hyaline, fusoid, or sometimes narrowly subcylindric in the longer conidia, which may be narrowed at one end and irregularly obtuse at the other, $8-22 \times 2-3 \mu$ and continuous so far as observed.

BOTRYTIS sp. appears parasitic on upper portions of leaves—not necessarily the tips—of *Hemerocallis fulva*, the common day-lily, collected at Madison, July 6. The fungus is amphigenous, the conidia smooth, thin-walled, subhyaline, broadly oval, $12-16 \times 9-10 \mu$, produced in clusters from very short, stubby branches in the apical region of the medium-long, sparingly septate, grayish-olivaceous conidiophores. The hardy host plant is extensively naturalized in Wisconsin, but the present instance is the first in many years of collecting where an apparent parasite has been noted on it. There seem to be no literature references recording *Botrytis* on *Hemerocallis*.

CLADOSPORIUM sp., possibly parasitic, occurs in minute gregarious tufts on long, narrow, brownish lesions on the adaxial sides of leaves of *Bromus purgans*, collected at the New Glarus Woods Roadside Park, Green Co., October 4. The conidiophores are closely fascicled in small groups, clear brown, multiseptate, sparingly geniculate and somewhat paler toward tip, approx. $60-75 \times 3-3.5 \mu$. The few conidia observed ran about $10-12 \times 4.5-5 \mu$, short-cylindric,

rather deep brown with wall minutely roughened. The leaves also bear *Puccinia recondita* Rob. ex Desm.

CERCOSPORELLA (?) sp. occurs on leaves of *Dioscorea villosa*, collected at Gov. Dodge State Park, Iowa Co., July 21, 1959. The fungus is amphigenous on small, translucent, orbicular or angled, brownish, darker bordered spots approx. 1–3 mm. diam. The hyaline, multigeniculate conidiophores are scattered, mostly singly or in pairs, on the spots, but many of them appear to be compound, being considerably enlarged and somewhat amorphous in aspect basally. They are about 3 μ wide in the narrower upper portion and approx. 15–40 μ long, very inconspicuous and revealed only in sections. The conidia are hyaline, subacicular, straight or slightly curved, base narrowly obconic, 2–3 septate, approx. 30–45 x (1.5–) 2–2.5 μ .

CERCOSPORELLA CELTIDIS (E. & K.) J. J. Davis (*Ramularia celtidis* Ell. & Kell.) was collected on *Celtis occidentalis* by Davis in Crawford Co., Wis. in 1921. In his specimen most of the spores are lax and filiform, about 50 x 2.5 μ , or longer, but there are a considerable number which are not more than 20–25 x 2.5 μ . At a station near Cross Plains, Dane Co., October 7, on leaves of the same host, a fungus was found which it seems likely may be a reduced late-season development of *Cercospora celtidis*. The spots are grayish and less sharply defined than in the 1921 specimen. The conidia are hyaline, slender-cylindric, about 12–14 x 2.5 μ , and there is considerable production of superficial, creeping, slender thread-like mycelium on the surface of the spots.

CERCOSPORA FILIFORMIS (Davis) Chupp is fairly common on *Anemone patens* var. *wolfgangiana* in Wisconsin. After the *Cercospora* has passed its peak, small pycnidium-like bodies are regularly produced on the old lesions. In past years these have been examined from time to time, but no spores have been found in them. In a collection made near Cross Plains, Dane Co., July 14, however, these structures are filled with hyaline, rod-shaped microconidia, possibly indicative of a perfect stage to be developed, although when similar leaves were overwintered out-of-doors in 1954–55, the "pycnidia" produced only *Cercospora* conidia from their surfaces and no perfect stage ensued.

CERCOSPORA sp. is hypophyllous on sordid brownish areas on leaves of *Callistephus chinensis* (cult.), collected September 7 near Cross Plains, Dane Co. The conidiophores are from almost straight to slightly curved or angled, widely and loosely 1–3 geniculate, clear pale brown below, pallid and slightly wider at the truncate tips, basally 2–3 septate, approx. 125–135 x 4.5–6 μ , fascicled from a

more or less well-developed blackish stroma. The conidia are hyaline, slightly curved, narrowly obclavate, multiseptate, truncate at base, approx. 100–140 x 3.5–4.5 μ . Chupp, in his monograph, does not list any species of *Cercospora* on *Callistephus*.

CERCOSPORA sp. on *Centaurea macrocephala* (cult.), collected near Cross Plains, Dane Co., September 7, does not correspond to *Cercospora centaureae* Died., the only species mentioned by Chupp as on *Centaurea*. In the Wisconsin specimen the spots are small, rounded, and sharply defined, about 2–5 mm. diam., with wide dark brown borders and cinereous centers. The conidiophores are epiphyllous, clear gray brown, multiseptate, mildly geniculate, with widely spaced but nevertheless rather prominent geniculations, obtuse and truncate at tip, with prominent scar, approx. 225–275 x 4–6 μ in small, loose fascicles of about 3–10 phores, from a small stroma. The conidia are hyaline, obscurely multiseptate, more or less curved, essentially acicular, truncate at base, with prominent scar, approx. 90–120 x 3–3.5(–4) μ .

SCLEROTIOMYCES COLCHICUS Woronichin occurs on leaves of *Acer saccharinum*, collected September 9, 1959 and of *Zanthoxylum americanum*, September 13, 1960, both at Wildcat Mt. State Park, Vernon Co. Epiphyllous, as in the case of all other specimens of this photosynthesis-reducing fungus collected so far in Wisconsin. This seems not to be a typical "honey-dew" organism, since there is, so far as I have observed, no evidence that it develops on insect excretions.

ADDITIONAL HOSTS

The following hosts have not been previously recorded as bearing the fungi mentioned in Wisconsin.

SYNCHYTRIUM FULGENS Schroet. on *Oenothera rhombipetala*. Sauk Co., near Spring Green, September 11, 1959. Karling (*Mycologia* 50:373. 1958) discusses American collections of this species.

ALBUGO CANDIDA (Pers.) O. Ktze. on *Erysimum cheiranthoides*. Dodge Co., near Horicon, July 12.

ALBUGO TRAGOPOGONIS (Pers.) S. F. Gray on *Antennaria plantaginifolia*. Iowa Co., Blue Mounds State Park, August 11.

PLASMOPARA HALSTEDII (Farl.) Berl. & DeToni on *Silphium terebinthinaceum* x *laciniatum*. Dane Co., Madison, September 20. In my notes XXII I stated that *P. halstedii* had not been found on *Silphium laciniatum* in Wisconsin, which remains true, but I speculated that, since at that time the fungus had not yet been found on the hybrid either, the hybrid might have resistance imparted by *S. laciniatum*, which is evidently not the case.

CRYPTOSPORELLA ANOMALA (Peck) Sacc. on *Corylus americana* x *avellana*. Pierce Co., River Falls, November 12, 1959. Coll. & det. A. H. Epstein. This species, only very occasionally seen on native hazelnut, was causing serious and extensive damage in a commercial plantation of the European filbert crossed with the American species. It is reported as occurring on filbert in Europe, along with two other species of *Cryptosporella*.

VENTURIA INAEQUALIS Wint. *Fusicladium dendriticum* stage on leaves and young fruit of *Pyrus arnoldiana* (cult.). Dane Co., Madison, June 6.

TICHOETHECIUM sp. occurred as an obvious parasite on the lichen *Caloplaca flavovirescens*, collected by K. G. Foote near Ridgeway, Iowa Co., April 19. The many-spored asci of the parasite are broadly clavate, about $35 \times 12 \mu$, the uniseptate, dark brown, broadly spindle-shaped ascospores are approx. $5-7 \times 3-3.5 \mu$. These spore dimensions do not fit those of either of the two species listed by Keissler in his monograph on lichen parasites, although they are not far from those of *Tichothecium nanellum* Arn.

OPHIODOTHIS HAYDENI (B. & C.) Sacc. on *Aster pilosus*. Dane Co., Madison, August 21. This growth, although usually sterile in my experience, is characteristic and obviously parasitic, causing much distortion of the host.

ELSINOE VENETA (Burkh.) Jenkins. *Sphaceloma* stage on *Rubus parviflorus* (cult.). Dane Co., Madison, July 20.

MELAMPSORA ABIETI-CAPREARUM Tub. ii, III on *Salix glaucophylloides* Fern. Columbia Co., near Swan Lake, Pacific Twp., September 18, 1959.

PUCCINIA DIOICAE P. Magn. II, III on *Carex normalis*. Dane Co., near Verona, June 29. On *C. brevior*. Dane Co., near Pine Bluff, August 4.

PUCCINIA DIOICAE P. Magn. on *Carex concinna*. Door Co., Ridges Sanctuary at Bailey's Harbor, June 12, 1954. Coll. J. H. Zimmerman. On *C. disperma*. Winnebago Co., Menasha, May 18, 1889. Collector unknown. On *C. foenea*. Dane Co., Madison, June 23, 1950. Coll. J. H. Zimmerman. On *C. houghtonii*. Ashland Co., Ironwood Island, June 27, 1956. Coll. F. C. Lane (2682). On *C. pauciflora*. Oneida Co., near Minocqua, August 11, 1953. Coll. J. J. Jones. On *C. projecta*, Green Co., near Albany, August 3, 1956. Coll. H. H. Iltis (6726). On *C. sterilis*. Dane Co., Madison, June 14, 1950. Coll. J. H. Zimmerman. These were all noted on phanerogamic specimens in the University of Wisconsin Herbarium.

Puccinia caricina DC. on *Carex atherodes*. Sauk Co., Devils Lake State Park, July 24, 1947. Coll. J. H. Zimmerman. On *C. pedunculata*. Sauk Co., Parfrey's Glen, June 14, 1937. Coll. F. J. Hermann (8764). On *C. pseudocyperus*. Lincoln Co., Tomahawk, September 16, 1952. Coll. F. C. Seymour. All on phanerogamic specimens in the University of Wisconsin Herbarium.

Puccinia caricina DC. var. limosae (Magn.) Jorstad II, III on *Carex limosa*. Vilas Co., Sayner, July 27, 1902. Coll. S. C. Wadmond. On a phanerogamic specimen in the University of Wisconsin Herbarium. The urediospore pores are scattered, which would seem to throw the specimen into what was formerly designated *Puccinia karelica* Tranz., rather than into *P. limosae* Magn., both of which are placed by Jorstad in *P. caricina* var. *limosae*.

Puccinia asteris Duby on *Aster pilosus*. Dane Co., Madison, October 10.

Gymnosporangium globosum Farl. I on *Sorbus americana* (cult.). Dane Co., Madison, August 13.

Gymnosporangium juvenescens Kern I on *Amelanchier interior* Nielsen. Columbia Co., Gibraltar Rock County Park, June 20.

Schizonella melanogramma (DC.) Schroet. on *Carex blanda*. Sauk Co., Devils Lake State Park, June 20, 1946. Coll. J. H. Zimmerman. On a phanerogamic specimen in the University of Wisconsin Herbarium. This is the first broad-leaved species of *Carex* on which this smut has been noted in Wisconsin.

Entyloma compositarum Farl. on *Aster pilosus*. Dane Co., Madison, October 10.

Ceratobasidium anceps (Bres. & Syd.) Jacks. (*Sclerotium deciduum* J. J. Davis) appears strongly parasitic, but not at all specific, as one observes it on various hosts in the field. At a single station in Wildcat Mt. State Park, Vernon Co., June 9, this fungus was collected on eight hosts not previously recorded for Wisconsin, as follows: *Cryptotaenia canadensis*, *Monarda fistulosa*, *Veronicastrum virginicum*, *Triosteum perfoliatum*, *Aster paniculatus*, *Aster prenanthoides*, *Rudbeckia laciniata*, and *Senecio aureus*. In addition, it occurred on *Sanguinaria canadensis*, *Verbena urticifolia*, and *Solidago gigantea*, previously reported as hosts. Near La-Valle, Sauk Co., June 15, the fungus was collected on *Urtica dioica*, and on young shoots of *Rumex* (probably *R. britannica*).

Pellicularia filamentosa (Pat.) Rogers on *Plantago lanceolata*. Dane Co., Madison, July 20.

Phyllosticta dearnessii Sacc. on *Rubus* sp. (dewberry). Dane Co., near Pine Bluff, August 30. Although it is scarcely possible to

state the host species, it is obviously neither *R. strigosus* nor *R. parviflorus*, the only previously reported hosts for this fungus in Wisconsin.

PHYLLOSTICTA FRAGARICOLA Desm. & Rob. on *Potentilla norvegica* var. *hirsuta*. Jefferson Co., near Waterloo, July 28. This specimen corresponds closely to like-named collections on *Potentilla arguta* and *P. recta*.

PHYLLOSTICTA ANTENNARIAE Ell. & Ev. on *Antennaria plantaginifolia*. Iowa Co., Blue Mounds State Park, August 11. The conidia are slightly longer, up to 10 μ , than in other specimens on *Antennaria fallax*, but are of the same general type.

NEOTTIOSPORA ARENARIA Syd. on *Carex grayii*. Outagamie Co., near Stephenville, June 19, 1951. Coll. R. T. Brown and R. Bray. On *C. scoparia*. Burnett Co., near Webster, September 6, 1929. Coll. W. T. McLaughlin (1846). On phanerogamic specimens in the University of Wisconsin Herbarium.

ASCOCHYTA GRAMINICOLA Sacc. on *Oryzopsis asperifolia*. Price Co., Camp Merrill near Phillips, September 13, 1911. Coll. J. J. Davis. On a leaf bearing *Puccinia pygmaea* Erikss., for which the specimen was originally collected. On *Muhlenbergia racemosa*. Sauk Co., Ferry Bluff, Town of Prairie du Sac, June 24.

ASCOCHYTA AQUILEGIAE (Rabh.) Hoehn. on *Aquilegia buergeriana* Sieb. & Zucc. (cult.). Dane Co., Madison, July 4, 1959.

ASCOCHYTA PISI Lib. on *Lathyrus ochroleucus*. Iowa Co., Blue Mounds State Park, August 11.

ASCOCHYTA CUCUMIS Fautr. & Roum. on *Cucurbita maxima* (cult.). Dane Co., Madison, September 26.

ASCOCHYTA COMPOSITARUM J. J. Davis on *Senecio aureus*. Vernon Co., Wildcat Mt. State Park, June 9. This is the small-spored variety, originally designated by Davis as var. *parva*, but later considered as better included with the species. In the present specimen most of the spores are about 8–10 x 3 μ , and are possibly somewhat immature, as only a minority show a septum.

DARLUCA FILUM (Biv.) Cast. on *Pucciniastrum pyrolae* (Pers.) Schroet. II on *Pyrola elliptica*. Dane Co., near Verona, September 28. The first Wisconsin collection on a species of *Pucciniastrum*. On *Melampsora abietis-canadensis* (Farl.) Ludw. II on *Populus grandidentata*. Vernon Co., Wildcat Mt. State Park, September 13. On *Tranzschelia pruni-spinosae* (Pers.) Diet. III on *Prunus nigra*. Chippewa Co., near Cadott, September 20, 1922. Coll. J. J. Davis. The first Wisconsin report of *Darluca* on *Tranzschelia*. On *Puccinia*

puritanica Cumm. II on *Carex pennsylvanica*. Dane Co., near Cross Plains, August 17.

STAGONOSPORA ARENARIA Sacc. on *Lolium multiflorum*. Dane Co., Madison, October 12. The straight to laxly curved spores are mostly about 35–40 x 3–3.5 (–4) μ and mostly 3, but occasionally 4 septate.

STAGONOSPORA CARICINELLA Brun. on *Carex normalis*. Dane Co., near Cross Plains, July 14. On *C. brevior*. Dane Co., Madison, July 6.

STAGONOSPORA ALBESCENS J. J. Davis on *Carex conoidea*. Dane Co., Madison, June 20. Mostly on the upper leaves (or bracts) subtending the pistillate spikes, but also on the scales of the staminate inflorescence.

STAGONOSPORA CYPERICOLA H. C. Greene on *Cyperus schweinitzii*. Iowa Co., near Arena, August 11. The spores in this specimen are mostly about 22–25 x 5–6.5 μ , slightly smaller than in the type. The leaves also bear *Puccinia cyperi* Arth.

SEPTORIA NODORUM Berk. on *Alopecurus aequalis*. Waukesha Co., Big Bend, June 26, 1930. Coll. J. J. Davis. Associated with *Uromyces dactylidis* Oth (*U. alopecuri* Seym.).

SEPTORIA RIBIS Desm. on *Ribes alpinum* (cult.). Jefferson Co., McKay Nursery at Waterloo, October 10. Comm. E. K. Wade.

SEPTORIA CORNICOLA Desm. var. AMPLA H. C. Greene on *Cornus obliqua*. Dane Co., Madison, September 26.

SEPTORIA ASTERICOLA Ell. & Ev. on *Aster sericeus*. Sauk Co., near Spring Green, May 26. That *S. astericola* and *Septoria fumosa* Peck, the latter commonly reported on species of *Solidago*, are really distinct may be doubted.

SEPTORIA ATROPURPUREA Peck on *Aster junciformis*. Dane Co., near Deerfield, July 28.

SEPTORIA LANARIA Fairman on *Antennaria petaloidea* Fern. (host det. E. W. Beals). St. Croix Co., near New Richmond, May 29. Coll. H. H. Iltis. Although the fungus is on the previous year's leaves it seems certain it was parasitic.

HAINESIA LYTHRI (Desm.) Hoehn. on *Rubus allegheniensis*. Vernon Co., Wildcat Mt. State Park, September 13. The *Sclerotiopsis* stage is also present in this specimen. At the same station, September 9, 1959, a specimen with *Sclerotiopsis* only was collected on *Carya cordiformis*. Both are stages of *Pezizella lythri* (Desm.) Shear & Dodge.

LEPTOTHYRIUM SIMILISPORUM (Ell. & Davis) Davis on *Aster macrophyllus*. Sauk Co., Devil's Lake State Park, September 15. All previous collections in Wisconsin have been on species of *Solidago*.

MELASMA ULMICOLA B. & C. on *Zelkova carpinifolia* (cult.). Dane Co., Madison, August 6. Referred here with some doubt. There are many slender rod-shaped or slender-ellipsoid conidia, about $5 \times 1.5 \mu$, which are very similar to those on specimens on *Ulmus* but there is also a second class of subfusoid conidia, about $7 \times 2.5-3 \mu$, which seem to be a constant feature.

COLLETOTRICHUM GRAMINICOLA (Ces.) Wils. on *Avena sativa* (var State Pride). Dane Co., Madison, June 11, 1958. Coll. D. C. Arny. Also on *Poa annua* at Madison, August 14.

ELLISIELLA CAUDATA (Peck) Sacc. on *Koeleria cristata*. Dane Co., Madison, July 17, 1959.

CYLINDROSPORUM BETULAE J. J. Davis on *Betula populifolia* (cult.). Dane Co., Madison, October 12. The lesions, although entirely characteristic, are somewhat old and only a few typical *Cylindrosporium* conidia were observed. There are present, however, many hyaline, bacilliform microspores, approx. $4-6 \times 1 \mu$.

CYLINDROSPORIUM FILIPENDULAE Thum. on *Spiraea "rosebella"* (cult. and said to be a hybrid of *S. alba* DuRoi and *S. salicifolia* L.). Dane Co., Madison, August 22.

CERCOSPORELLA DEARNESSII Bub. & Sacc. on *Solidago hispida*. Vilas Co., Trout Lake, September 7, 1959. Coll. J. D. Sauer. The conidiophores are from $60-85 \mu$ long in this specimen.

CERCOSPORA FUSIMACULANS Atk. on *Panicum wilcoxianum*. Dane Co., near Cross Plains, September 1, 1959.

CERCOSPORA CARICIS Oud. on *Carex normalis*. Dane Co., near Verona, June 29, and near Cross Plains, July 14.

ADDITIONAL SPECIES

The fungi mentioned have not been previously reported as occurring in the State of Wisconsin.

SYNCHYTRIUM DAVIS II Karling on *Rubus hispida* and *R. triflorus* (*R. pubescens*). Jackson Co., near Millston, September 26, 1912. Davis originally labeled these collections (and others) as *Synchytrium aureum* Schroet., but Karling (*Mycologia* 49:744. 1957), after critical study, has erected this species, with the specimen on *R. hispida* designated as the type. Certain other Wisconsin specimens on these hosts remain under *S. aureum*.

PSEUDOPERONOSPORA CELTIDIS (Waite) G. W. Wils. on *Celtis occidentalis*. Vernon Co., Wildcat Mt. State Park, September 13. On the

basis of inoculation experiments, it has been suggested that this species may be identical with *Pseudoperonospora humuli* (Miyabe & Takah.) Wils.

CERATOSTOMA PARASITICUM Ell. & Ev. on *Fomes applanatus*. Dane Co., Madison, June 15. Coll. & det. D. J. Rossouw.

OPHILOBOLUS GNAPHALII (Sacc. & Br.) Fairm. var. *lanaria* Fairm. on *Antennaria petaloides* Fern. (host det. E. W. Beals). St. Croix Co., near New Richmond, May 29. Coll. H. H. Iltis. This very interesting fungus, developing on the hairy under surface of the previous year's more or less evergreen leaves, seems possibly, although not certainly parasitic. Described by Fairman (Ann. Mycol. 9:149. 1911) on *Antennaria plantaginifolia* from Lyndonville, New York.

SCUTULA TUBERCULOSA Rehm on *Peltigera canina* var. *spuria*. Marinette Co., Dunbar, April 27, 1945. Coll. J. W. Thomson. On a specimen in the University of Wisconsin Herbarium.

PUCINIA POLYSORA Underw. II, III on *Zea mays* (cult.). Dane Co., near Madison, September 1959. Coll. & det. M. S. Pavgi. It is believed that this rust, although undetected until recently, has long been present in Wisconsin and neighboring states.

PUCINIA PURITANICA Cummins II, III on *Carex pennsylvanica*. Dane Co., near Cross Plains, August 17. Det. G. B. Cummins. The second collection of this species. The type was collected on the same host at Waltham, Mass. in 1910. The teliospores are pallid-olivaceous and germinate in the current season without dormancy.

PHYLLOSTICTA CELTIDIS Ell. & Kell. on *Celtis occidentalis*. Grant Co., Wyalusing State Park, September 24, 1959.

PHYLLOSTICTA ARMERIAE Allesch. on *Limonium* sp. (cult.). Outagamie Co., Kaukauna, July 18. Coll. N. Esler. Comm. E. K. Wade.

Phyllosticta heliopsisidis sp. nov.

Maculis orbicularibus, centris albidis, marginibus fusco-purpureis, 2-5 mm. diam.; pycnidiis epiphyllis, paucis et sparsis, fumoso-olivaceis, subglobosis, ca. 150-200 μ diam., ostiolis prominentibus cum marginibus nigris; conidiis numerosis, hyalinis, rectis, tenuo-cylindraceis vel raro curvis leniter et subfusoides, 5-7.5 x 1.5-2 μ .

Spots orbicular with whitish centers and rather wide dark purplish margins, 2-5 mm. diam.; pycnidia epiphyllous, few and scattered, smoky-olivaceous, subglobose, approx. 150-200 μ diam., ostiole outlined by prominent band of blackish cells; conidia numerous, hyaline, straight, slender-cylindric, or rarely slightly curved and subfusoid, 5-7.5 x 1.5-2 μ .

On living leaves of *Heliopsis helianthoides* (L.) Sweet, along the Milwaukee Railroad right-of-way, Iowa County, 1½ miles east of

Arena, Wisconsin, U. S. A., September 9, 1959. The host has often been referred to previously as *Heliopsis scabra* Dunal.

Many of the spots have only a single pycnidium, and most not more than two or three, scattered and more or less remote from one another.

PHOMA POLYGRAMMA (Fr.) Sacc. var. PLANTAGINIS Sacc. on scapes of *Plantago lanceolata*. Dane Co., Madison, August 22. There is reason to believe that this is really a species of *Phomopsis*. A specimen in the University of Wisconsin Herbarium collected by L. R. Jones in 1920 at Winchester, Va. has both alpha and beta type spores in abundance, but other specimens from Maryland, New Jersey, New York and Wisconsin have only the fusoid *Phoma*-type conidia. However, the development and general appearance of the fungus also suggests *Phomopsis* as I have seen it in other representatives of the genus.

***Ascochyta lonicerae-canadensis* sp. nov.**

Maculis conspicuis, orbicularibus vel irregularibus, sordido-brunneis, marginibus obscuro-purpureis, angustis, ca. (1-)1.5-2 (-2.5) cm. diam.; pycnidiis epiphyllis, sparsis, flavido-brunneis, subglobosis, ca. 100-125 μ diam.; conidiis hyalinis, cylindratis vel late subfusoidis, granulosis aliquanto, septis mediis, (13-)15-17 (-18) x 6-7.5 μ .

Lesions conspicuous, orbicular or irregular, sordid brownish with narrow dull purplish border, approx. (1-)1.5-2(-2.5) cm. diam.; pycnidia epiphyllous, scattered, yellowish-brown, subglobose, approx. 100-125 μ diam.; conidia hyaline, cylindrical or broadly subfusoid, contents somewhat granular, septa median, (13-)15-17(-18) x 6-7.5 μ .

On living leaves of *Lonicera canadensis*. University of Wisconsin Arboretum, Madison, Dane County, Wisconsin, U. S. A., August 13, 1960. The host plant was transplanted from Bayfield Co., Wis. in 1958, so it seems possible the parasite was brought along with it.

The conidia here are decidedly wider than those of other species of *Ascochyta* which are reported as occurring on Caprifoliaceae. There is occasionally slight constriction at the septum, but usually none.

DIPLODINA CHENOPODII Karst. on *Coriospermum hyssopifolium*. Ozaukee Co., Lake Michigan beach 5 miles north of Port Washington, October 15. Coll. J. D. Sauer. This corresponds quite closely to Petrak's Fl. Bohem. et Morav. Exsicc. Ser. II, No. 1132, distributed as this species on *Chenopodium glaucum*. Hollos described *Diplodina coriospermi*, but the principal difference seems to be in slightly wider spores, so it seems likely that *D. coriospermi* is synonymous with *D. chenopodii*, although Petrak (Ann. Mycol. 23:57. 1925)

states *D. coriospermi* should be referred to *Ascochyella*, a genus most authorities seem to regard as of dubious standing.

***Stagonospora biseptata* sp. nov.**

Maculis variabilis, pallido-brunneis, in bracteis foliatis; pycnidiis amphigenis, nigro-fuscis, sparsis, subglobose, ca. 100–125 μ diam.; conidiis hyalinis, cylindraceutis, subcylindraceutis, vel subfusoides, rectis vel curvis leniter, granulosis et guttulatis, biseptatis, (8–) 10–11 (–13) x (35–) 40–50 (–55) μ .

Spots variable, brownish straw-colored with mottled darker areas, mostly on the leafy bracts subtending the inflorescence, and often, but not always, involving the entire bract; pycnidia amphigenous, blackish, scattered, subglobose, approx. 100–125 μ diam.; conidia hyaline, cylindric, subcylindric, or subfusoid, straight or slightly curved, granular and guttulate, biseptate, (2–) 10–11 (–13) x (35–) 40–50 (–55) μ .

On *Carex lanuginosa*. University of Wisconsin Arboretum, Madison, Dane County, Wisconsin, U. S. A., July 6, 1960.

In 1952 in the same general area a small specimen of this fungus was collected and commented on in my Notes XVIII.

***Stagonosporia astericola* (Davis) H. C. Greene comb. nov.**

(Davis, J. J.—Trans. Wis. Acad. Sci. Arts Lett. 21:281. 1924)

Davis described *Asteromella astericola* as occurring on *Aster lateriflorus* in Wisconsin and I have since found the same organism on *Aster ericoides* on several occasions. The elongate, subcylindric spores, including those in Davis' specimen, often have a median septum, and in a specimen on *A. ericoides*, collected June 18, 1959 in Perrot State Park, Trempealeau Co., the spores are frequently 2 septate.

SEPTORIA QUERCICOLA Sacc. on *Quercus macrocarpa*. Trempealeau Co., Whitehall, August 19. Coll. E. P. Jensen. The pycnidia occur individually, or only two or three together, on tiny, rounded, reddish-tan spots which are very numerous on the infected leaves. The spores are strongly curved, 3 septate, not constricted at the septa, hyaline and obtuse at both ends, mostly about 35–40 x 3.5–4.5 μ . Said to have been very prevalent on bur oak in Trempealeau Co. in 1960.

CHAETOSTICTA PERFORATA (Ell. & Ev.) Petr. & Syd. on *Cirsium discolor*. Dane Co., Madison, August 13, 1959. Det. S. J. Hughes. This fungus simulates *Acanthostigma occidentale* (Ell. & Ev.) Sacc. in macroscopic appearance, but is an imperfect form producing hyaline phragmospores. Also on *Cirsium muticum*, collected at Madison, September 3, 1951, and discussed in my Notes XVII, but without a determination at that time.

GLOEOSPORIDIELLA VARIABILE (Laub.) v. Arx (*Gloeosporium variabile* Laub.) on *Ribes alpinum* (cult.). Barron Co., Rice Lake, August 6. Coll. Mrs. J. Brecka. Comm. E. K. Wade. This seems quite distinct from *Gloeosporium ribis*, common on native currants in Wisconsin, as the conidia of *G. variabile* are narrower, longer, and mostly strongly curved than those of *G. ribis*.

Leptothyrium salicicola sp. nov.

Maculis orbicularibus, 2–8 mm. diam., saepe confluentibus, brunneis, zonatis plus minusve, marginibus angustis, fuscis; fructificationibus epiphyllis, sparsis, nigris, pseudoparenchymaticis, rotundatis supra, applanatis infra, fissilibus stellatis supra, subepidermidibus, erumpentibus, ca. 135–175 μ latis; conidiophoris subhyalinis, tenuibus, inconspicuis, basiliaribus plerumque; conidiis hyalinis, subfusoides vel fusoides, subcylindraces interdum, (9–)12–14 (–17) \times 3.5–4.5 μ .

Lesions orbicular, 2–8 mm. diam., often confluent, grayish-brown, more or less zonate with narrow darker margin; fruiting bodies epiphyllous, scattered, black, pseudoparenchymatous, rounded above, flattened below, the upper covering tending to split stellately, subepidermal in origin, but strongly erumpent, approx. 135–175 μ wide; conidiophores subhyaline, slender, inconspicuous, mostly basal; conidia hyaline, subfusoid to fusoid, or occasionally subcylindric, (9–)12–14 (–17) \times 3.5–4.5 μ .

On living leaves of *Salix petiolaris*. University of Wisconsin Arboretum, Madison, Dane County, Wisconsin, U. S. A., October 3, 1960.

The rounded fruiting bodies are about half as high as wide and not numerous, usually only one or two per lesion.

PIROSTOMA CIRCINANS Fr. on *Sorghastrum nutans*. Dane Co., Madison, September 28. Vast numbers of the shining-black, flattened, punctate, fruiting bodies, approx. 25–50 μ diam. are crowded on the abaxial surfaces of the still green basal leaves. Despite the crowding, the circinate nature of the arrangement is plainly to be seen. Sections show the fungus to be evidently parasitic within the epidermis, with some of the larger bodies appearing even more deeply seated. Although no conidia were observed, the fungus is identical in aspect with exsiccated specimens on *Phragmites communis* and is so characteristic and well-marked that a report seems fully justified. An undetermined fungus on *Danthonia spicata*, mentioned in my Notes XXIV (Trans. Wis. Acad. Sci. Arts Lett. 47: 108. 1958) obviously also is referable to *P. circinans*.

DIPLOCLADIUM MINUS Bon. on *Polyporus gilvus*. Dane Co., Madison, October 18. Coll. & det. D. J. Rossouw.

