

NOTES ON WISCONSIN PARASITIC FUNGI. XXI

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The collections on which this series of notes is based were, unless stated otherwise, made during the season of 1954.

PLASMOPARA HALSTEDII (Farl.) Berl. & DeToni, collected at Madison, July 19, 1953 on leaves of *Helianthus strumosus*, is overgrown by a species of *Cladosporium*. The hyphae of the latter appear to penetrate the sporangiophores of the *Plasmopara*, but the relationship is uncertain. The slender ultimate threads of the *Cladosporium* mycelium are subhyaline, and the overgrowth thus has somewhat the aspect of a mucedine.

Undetermined powdery mildews have been collected on the following hosts: *Grindelia squarrosa*, near Forward, Dane Co., August 5; *Aster shortii*, near Monticello, Green Co.; *Capsella bursa-pastoris*, Madison, September 2. Coll. E. A. Stowell.

GLOMERELLA PHOMOIDES Swank is described (Phytopath. 43: 285. 1953) as the perfect stage of *Colletotrichum phomoides* (Sacc.) Chester. *C. phomoides* has been collected in Wisconsin on tomato and pepper.

VENTURIA sp. (immature) on *Gaylussacia baccata* was collected at Hope Lake Bog, Jefferson Co., September 19 by M. S. Bergseng. Immature *Venturias* have been found on a number of Ericaceae in Wisconsin. It is assumed they require overwintering to mature.

PLEUROCERAS POPULI G. E. Thompson is described (Mycologia 46: 655. 1954) as the perfect stage of *Marssonina rhabdospora* (Ell. & Ev.) Magn. which occurs in Wisconsin on *Populus grandidentata* and *P. tremuloides*.

G. W. Fischer's "Manual of the North American Smut Fungi", which recently appeared, introduces a number of name changes affecting smuts which occur on Wisconsin hosts. *Entyloma gauraniticum* Speg. (on *Brauneria pallida*) is a synonym of *E. polysporum* (Pk.) Farl. *Entyloma irregulare* Johans. (on *Poa pratensis*) and *Entyloma crastophilum* Sacc. (on *Agrostis alba*, *Glyceria pallida*, *Phleum pratense*) are both considered as synonyms of *Entyloma dactylidis* (Pass.) Cif. *Entyloma saniculae* Peck (on *Sanicula gregaria*, *S. marilandica*) is a synonym of *Entyloma eryngii* (Cda.) DeBary. *Entyloma gratirolae* (Davis) Cif. is used instead of *E. linariae* var. *gratirolae* for the smut on

Gratiola neglecta, and *Entyloma linariae* Schröt. instead of *E. linariae* var. *veronicae* Wint. for the smut on *Veronica peregrina*. *Farysia olivacea* (DC.) Syd. replaces *Ustilago olivacea* (DC.) Tul. (on *Carex rostrata*). *Melanopsichium austro-americanum* (Speg.) Beck is said not to occur in North America and the Wisconsin smut (on *Polygonum lapathifolium*) is *Melanopsichium pennsylvanicum* Hirschh. *Sorosporium cenchri* Henn. replaces *S. syntherismae* (Pk.) Farl. for the smut on sand bur and some of the *Panicum capillare* group. *Tilletia caries* (DC.) Tul. replaces *T. tritici* (Bjerk.) Wint. and *T. foetida* (Wallr.) Liro, also on wheat, is used instead of *T. foetens* (B. & C.) Tul. *Urocystis colchici* (Schl.) Rabenh. is employed instead of *U. cepulae* Frost for the smut on cultivated onion. The smut of *Waldsteinia fragarioides* is removed from *Urocystis* to *Ustacystis* Zundel, as *U. waldsteiniae* (Pk.) Zundel. *Ustilago perennans* Rostr. (on *Arrhenatherum elatius*) is regarded as a synonym of *U. avenae* (Pers.) Rostr. For the smut on species of *Glyceria*, *Ustilago davisii* Liro replaces *U. longissima* var. *macrospora* Davis. *Ustilago maydis* (DC.) Cda. replaces *Ustilago zaeae* (Schw.) Ung., and *Ustilago nuda* (Jens.) Rostr. is substituted for *Ustilago tritici* (Pers.) Rostr. *Ustilago syntherismae* (Schw.) Pk. (on *Digitaria sanguinalis*) replaces *U. rabenhorstiana*, regarded as a synonym.

Puccinia simulans (Pk.) Barth. II on *Sporobolus cryptandrus* was reported by Davis (Trans. Wis. Acad. Sci. 30: 14. 1937). A collection made near Cambria, Columbia Co., in September 1954 has some teliospores as well, eliminating the possibility of confusion with the closely connected *Uromyces sporoboli* Ell. & Ev.

PHYLLOSTICTAE, undetermined as to species, have been found on various hosts. Descriptive notes on some of these follow: 1) On *Conocephalum conicum*. Sauk Co., Parfrey's Glen, May 19. Micro-conidial. Parasitism is dubious, although the dead portions of the gametophytes on which the fungus occurs are closely connected with fresh, green living portions. 2) On *Scirpus atrovirens*. Dane Co., Madison, August 9. The hyaline, bacilliform conidia are 4-6 x 1.5 μ , and are very likely connected with a subsequently produced ascomycetous stage. This organism was discussed at some length in my Notes XVI (Amer. Midl. Nat. 48: 747. 1952), but until the present collection no conidia of any sort had ever been noted by me. 3) On *Phaseolus vulgaris*. Dane Co., Madison, August 1952. In an uncertain relationship on dull brown lesions on leaves which also bear *Cercospora canescens* Ell. & Mart. The pycnidia are pale brown, thin-walled, subglo-

bose, about 160–175 μ diam., with conidia hyaline, short-cylindric, 5–7 x 2.5–3 μ . 4) On *Ilex verticillata* (cult.). Dane Co., Madison, August 28. The conidia are 5–6 x 2 μ , the pycnidia about 125 μ diam., of the dimensions of *P. haynaldi* Roum., but the spots are not as well defined as those in European specimens on *Ilex opaca*. 5) On *Amsonia tabernaemontana* (cult.). Dane Co., Madison, July 7. The lesions are tan and elongate, following the leaf midribs. The pycnidia are pale olivaceous by transmitted light, subglobose, about 125 μ diam. The conidia are hyaline, with a faint greenish cast, short-cylindric, 4–7 x 3–4 μ . 6) On *Solidago flexicaulis* (*latifolia*). Lafayette Co., near Fayette, August 25. This fungus is characterized by spores that approach those of a *Septoria*. The large, conspicuous spots are deep brown, faintly zonate, with a yellowish halo surrounding them, orbicular, 1–1.5 cm. diam. The scattered pycnidia are smoky-brown, subglobose, with those measured running from about 165–200 μ diam. The conidia are hyaline, rod-shaped, straight or very slightly curved, biguttulate with a tiny shining droplet at each end of the conidium, 7–10 x 1.5 μ .

ASTEROMELLA (?) sp. was destructively parasitic on leaves of *Toeplitzia glutinosa* at Madison, August 25. The small, non-ostiolate, shining-black, globose fruiting bodies (or sclerotia?) are about 35–55 μ diam., clustered, and connected by strands of dark, dendritically arranged mycelium, which permeates the leaf and resulted in total killing back from the tip. Conidia were not produced, so far as observed.

PHOMOPSIS (?) sp. on *Cannabis sativa*. Dane Co., near Mazomanie, August 25, and in Green Co. at Brodhead, September 1. Descriptive notes: Lesions very striking, conspicuous ashen areas on living leaflets, tending to run from margin to midrib, variable in length and width, but in general somewhat rounded or orbicular, with the pycnidia arranged in concentric rings easily visible to the naked eye. Pycnidia black, strongly developed above, less perfectly so in the leaf tissue below, flattened in the lower portion, sometimes confluent, ostiolate, 80–200 μ in long diam. Conidiophores very short and inconspicuous, lining the pycnidial cavity. Conidia hyaline, often guttulate, subcylindric to subfusoid, 5–8 x 2.5–3.5 μ . Scolecospores not observed.

It is difficult to see how this striking fungus, if it is at all common and widespread, has hitherto escaped mycologists' notice, but I find nothing reported on *Cannabis* which seems even suggestive. *Phyllosticta cannabis* (Kirchn.) Speg., already reported from Wisconsin and in addition represented in our herbarium by an authentic European specimen, is quite different and much less well marked.

I am, and always have been, uncertain as to the exact morphologic limits of *Phomopsis*, and my uncertainty has in no way been allayed by examination of the numerous specimens labeled as being of that genus in our herbarium. I have considered the presence of both alpha- and beta-type spores as being perhaps the most important feature. In addition, those species which occur on living tissue, of which I have listed several, tend to have large black pycnidia on prominent lesions and the alpha spores are subfusoid.

STAGONOSPORA sp. on *Equisetum hyemale*, collected at Madison, August 7, appears strongly parasitic on the upper portions of stems, which are killed back and have become whitened. This is perhaps *Stagonospora equiseti* Fautr. which is inadequately described, except for spore characters which are like those of the specimen in hand. The spores are said to be cylindrical or tapered at both ends, hyaline, 3-septate, 20–25 x 4–5 μ . No statement is made as to pycnidial characters. In the Wisconsin specimen they are approx. 250–300 μ diam., dark brown, subglobose, seriate, sometimes two or three very close together in a row.

STAGONOSPORA BRACHYELYTRI Greene (Trans. Wis. Acad. Sci. 38: 244. 1946) was first collected in midsummer. In 1954 the fungus was found again in the type locality in May, strongly infecting the first leaves of shoots of the host just pushing out of the ground, indicating a possible systematic condition.

STAGONOSPORA sp. on *Abutilon theophrasti* was collected August 17 near Black Earth, Dane Co. I find no report of *Stagonospora* on this host. The lesions are sharply defined, and the fungus appears strongly parasitic, but the specimen is too small for use as a type. The spots are small, rounded, 2–4 mm. diam., with pale brown centers and a darker brown border. Pycnidia are subglobose, about 125 μ diam., thin-walled, yellow-brown, with a well-marked ostiole surrounded by a ring of darker cells. The spores are hyaline, cylindrical, 18–22 x 3–4 μ , and when mature seem to be uniformly 3-septate.

PHAEOSEPTORIA FESTUCAE var. ANDROPOGONIS R. Sprague was described in these notes (Amer. Midl. Nat. 41: 722. 1949) as having pycnospores 60–85 μ long, but in a specimen collected near Lodi, Columbia Co., in August, many of the spores are up to 115 μ long. In essential morphology, however, they do not differ from those of the type.

GLOEOSPORIUM sp. occurs on leaflets of cultivated rose, collected at Madison, July 1926, by R. Sprague. Descriptive notes are as follows: Spots none; acervuli hypophyllous, subepidermal, scattered or gregarious, brownish, elevated, approx. 100–150 μ

diam.; conidia hyaline, ovoid to subfusoid, 7–10 x 2.5–3.5 μ . According to Jenkins (*Mycologia* 23: 223. 1932) *Gloeosporium rosae* Halsted is a nomen nudum.

COLLETOTRICHUM sp. occurs associated with and in questionable relationship to *Septoria saccharina* Ell. & Ev. on leaves of seedlings of *Acer saccharum*, collected near Albany, Green Co., August 25. The *Colletotrichum* is epiphyllous on small, angled, grayish spots which are usually, but not always, adjacent to those bearing the *Septoria*, and it appeared consistently on large numbers of leaves. The small, rounded acervuli have dark brown, straight, evenly tapered setae, 100–175 x 4.5–6 μ , 2–4-septate. The conidia range from the typical boat shape to straight-fusoid, and are 17–20 x 3.5–4 μ . There seem to be no reports of *Colletotrichum* on *Acer saccharum* and related maples.

OIDIUM PIRINUM Ell. & Ev., the type of which is in the University of Wisconsin Herbarium, was collected at Racine, Wis. in June 1888 by J. J. Davis on a host identified as *Pyrus coronaria*. The host appears instead to be *Crataegus* sp. bearing *Monilia crataegi* Died. (*Annal. Mycol.* 2: 529. 1904). Diedicke's description and that of Ellis and Everhart (*Jour. Mycol.* 5: 68. 1889) correspond closely. As is pointed out by Cash in her valuable contribution entitled "A Record of the Fungi Named by J. B. Ellis", Sumstine (*Mycologia* 5: 58. 1913) transferred, arbitrarily and mechanically it would seem from an examination of his article, *O. pirinum* to *Acrosporium*, as *A. pirinum* (E. & E.) Sumstine.

BOTRYTIS sp. occurred on large lesions, up to 5 cm. diam., on leaflets of *Arisaema atrorubens* (*triphillum*) in the New Glarus Woods, Green Co., June 14. This is one of a considerable series of the more succulent woodland plants observed over the years as being attacked by a large, coarse species (or more than one species?) of *Botrytis*. All have appeared as at least possibly parasitic, despite the reputation of *Botrytis* species as saprophytes.

DIDYMARIA PUNCTA J. J. Davis (*Trans. Wis. Acad. Sci.* 24: 290. 1929) was described as parasitizing *Sisyrhincium campestre* at a station near New Glarus, Green Co., and a second collection has recently been made at Madison. This surely verges on *Cercospora*, but in several mounts no conidia with more than one septum were seen. The host is tentatively identified as *S. campestre*, but the treatments of the genus *Sisyrhincium* in the standard manuals are inadequate.

PASSALORA FASCICULATA (C. & E.) Earle has been reported from Wisconsin on four species of *Euphorbia*—*E. corollata*, *E.*

glyptosperma, *E. preslii*, *E. serpyllifolia*—largely on the authority of the late J. J. Davis. Comparison of the Wisconsin material with Fungi Columbiani No. 380 (on *E. preslii*) and No. 3234 (on *E. nutans*) has convinced me that probably only the Fungi Columbiani specimens really represent *P. fasciculata*, and this with wide latitude for spore size variation from the original description. The large (20–30 x 8–10 μ), hyaline, uniseptate, subfusoid conidia show but a single spore scar, indicating they are non-catenulate. The conidiophores are pale brown, somewhat flexuous, noticeably and strongly fascicled, the fascicles being evenly distributed over the leaf surface. In all the Wisconsin specimens, on the other hand, the conidiophores, although densely aggregated, are not fascicled and are almost confined to the stems, or in the case of *E. corollata* to the leaf midribs. They are in general darker and are often more strongly angled, but with length variable, the longer tending to be angled. The conidia are those of typical *Cladosporium*, pale olivaceous or olivaceous with two spore scars, indicating catenulation. On *E. corollata* they are mostly uniseptate, with a slight constriction at the septum, subcylindric, 15–20 x 6–7 μ . On the other species of Wisconsin *Euphorbia* mentioned the conidia are almost uniformly continuous and limoniform, 10–16 x 4.5–6.5 μ . In my Notes VI (Trans. Wis. Acad. Sci. 36: 252. 1944), while still tentatively adhering to the *Passalora* conception, I remarked that the Wisconsin collections would be better assigned to *Cladosporium* spp. Which species is a question. *Cladosporium solutum* Link is reported as occurring on stems of *Euphorbia marginata*, but I have been unable to find a description.

CERCOSPORA sp., occurring in small amount on leaves of *Hypericum ascyron* at Madison, August 28, does not in any particular resemble *C. hyperici* Tehon & Daniels, the only species on *Hypericum* mentioned in Chupp's monograph. The fungus is hypophyllous on small, rounded, reddish spots. The conidiophores in lax fascicles, are 50–200 x 4.5–5.5 μ , multiseptate, several times geniculate, clear brown, with paler, abruptly conic tips, while the conidia are from 60–140 x 3–4 μ , multiseptate, acicular, hyaline, with truncate base.

ALTERNARIA sp. on *Panicum virgatum*, collected at Sylvania, Racine Co., August 19, 1953, appears parasitic and is on narrowly elongate white lesions with a reddish border. There are many lesions per leaf, causing very noticeable discoloration. Insofar as the spots are concerned, this seems quite similar to *Macrosporium panici* Ell. & Ev., as described, (*Erythea* 4: 28. 1896), but the fungus itself is a larger, coarser form.

ALTERNARIA sp., seemingly parasitic, occurred on living leaves of *Polanisia graveolens* in Iowa Co., near Arena, August 10. The pale brown spots are faintly zonate, rounded, 1.5–4 mm. diam., sharply defined. The fungus is amphigenous, but mostly epiphyllous. The conidia are pale brownish-gray, rapidly tapering from the base, multiseptate horizontally, with only rarely a vertical septation, 80–165 x 11–14 μ . The conidiophores are the same shade as the conidia, relatively short, about 30–40 x 4–5 μ , straight, simple, sometimes denticulate, 1–2-septate. There is no indication that this fungus is secondary after another or follows insect attack.

CILICPODIUM AURIFILUM (Ger.) Sacc. has been collected on *Daedalea unicolor* at Madison, October 1953. The status of this interesting fungus is uncertain, but as the *Daedalea* sporophores do not look particularly fresh, it seems probable that the *Cilicipodium* developed saprophytically. The same remark applies to SEPEDONIUM CHRYSOSPERMUM (Bull.) Fr. on an undetermined polypore, also collected at Madison, July 1953.

FUSARIUM sp. occurs on dark-margined, brownish, subzonate, orbicular spots about .7–1 cm. diam. on living leaves of *Abutilon theophrasti* collected near Black Earth, Dane Co., August 17. If any other agent was responsible for the spotting it is not apparent. "*Fusarium roseum* Lk." has been reported on leaves of *Abutilon*.

Panicum leibergii, collected near Albany, Green Co., on September 1, bears black sclerotia on the green leaves and on mottled areas on languishing and dead basal leaves. On the dead leaves the sclerotia are less perfectly formed, perhaps indicating they did not start growth until after death of the leaf, and that it proved a less favorable substrate than the living leaves. In any event the matter of parasitism seems open to question. This is evidently the same organism found in 1949 on the closely related *Panicum scribnerianum* (Amer. Midl. Nat. 44: 633. 1950). Another specimen was collected on dead leaves of *Stipa spartea* at a station near Avoca, Iowa Co., September 27.

ADDITIONAL HOSTS

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

PLASMOPARA GERANII (Peck) Berl. & DeToni on *Geranium sibiricum*. Dane Co., near Dane, August 17.

ELSINOE VENETA (Burkh.) Jenkins on *Rubus strigosus*. Dane Co., Madison, September 5. On leaves and canes, only sparingly on the latter.

ERYSIPHE GALEOPSISIDIS DC. on *Heliopsis scabra*. Green Co., near Attica, September 1. The rather extensive remarks in my Notes XI (*Amer. Midl. Nat.* 41: 717. 1949) concerning the occurrence of *E. galeopsisidis* on *Eupatorium rugosum* seem to apply in this case as well, characterized as the specimen is by a profuse development of cottony superficial mycelium, exceptionally large perithecia with golden-yellow contents, and with asci which show no spores, so far as observed.

ERYSIPHE CICHORACEARUM DC. on *Solidago graminifolia*. Dane Co., Madison, September 22, 1953. On *Solidago flexicaulis (latifolia)*. Waukesha Co., Nashotah, October 22, 1953.

SPHAERELLA (MYCOSPHAERELLA) SICYICOLA Ell. & Ev. on *Echinocystis lobata*. Dane Co., Madison, August 28. On well-defined spots and appearing parasitic.

VENTURIA SPOROBOLI H. C. Greene on *Sporobolus heterolepis*. Columbia Co., near Swan Lake, Sect. 2, Pacific Twp., September 11, 1953.

CLAVICEPS PURPUREA (Fr.) Tul. Sclerotia on *Calamagrostis inexpansa* var. *brevior* (host det. N. C. Fassett). Noted on two phanerogamic specimens, one collected by J. R. Heddle at Madison, August 1909, the other by J. J. Davis at Fish Creek, Door Co., September 3, 1929.

OPHIOTHIS HAYDENI (B. & C.) Sacc. on *Aster azureus*. Rock Co., Magnolia Station, July 8, 1953. This uncertain organism, which seems nevertheless to be an entity, is discussed in my Notes IX (*Trans. Wis. Acad. Sci.* 38: 236. 1946).

PHYLLACHORA GRAMINIS (Pers.) Fckl. on *Calamagrostis neglecta*. Door Co., Fish Creek, September 27, 1919. Coll. J. J. Davis. On a phanerogamic specimen in the University of Wisconsin Herbarium. Davis filed the specimen as doubtful *Calamagrostis hyperborea* and did not report the fungus. Fassett later determined the host in connection with his critical revision of the species of grasses occurring in Wisconsin.

PELLICULARIA FILAMENTOSA (Pat.) Rogers on *Erigeron pulchellus*. Grant Co., Nelson Dewey Memorial Park near Cassville, August 3. Basidia present.

UROCYSTIS ANEMONES (Pers.) Schroet. on *Anemone patens* var. *wolfgangiana*. Columbia Co., Pacific Twp., near Swan Lake, June 9.

ENTYLOMA AUSTRALE Speg. on *Physalis subglabrata*. Dane Co., Primrose, August 16, 1953.

COLEOSPORIUM SOLIDAGINIS (Schw.) Thum. II, III on *Aster ptarmicoides*. Dane Co., Madison, August 26.

Puccinia graminis Pers. II on *Trisetum melicoides*. Milwaukee Co., Cudahy, August 9, 1939. Coll. L. H. Shinnars. On a phanerogamic specimen in the University of Wisconsin Herbarium. Not reported on this host in Arthur's Manual. On *Poa pratensis* (Merion bluegrass). Milwaukee Co., Milwaukee, September 9. Comm. E. K. Wade.

Puccinia graminis Pers. II, III on *Hierochloa odorata*. Columbia Co., near Swan Lake, Pacific Twp., July 27. In small pustules near the leaf midrib. The flowering stalks of *Hierochloa* are produced in the early spring and disappear before midsummer. The long, semidecumbent summer leaves spring in tufts from a growing point near the ground and there is no well-defined stem on which characteristic lesions of *P. graminis* might be produced.

Puccinia sporoboli Arth. II, III on *Sporobolus asper*. Grant Co., Nelson Dewey Memorial Park, near Cassville, August 14, 1953.

Uromyces amphidymus Syd. II, III on *Glyceria borealis*. Dane Co., Madison, September 6. Occurring in massive profusion on the bottom of a recently dried-up pond where the host formed a covering mat. The only earlier collections were made in the 1890's by J. J. Davis on *Glyceria septentrionalis*, in Racine Co.

Puccinia extensicola Plowr. I on *Oenothera pilosella* Raf. The host is an escape from cultivation. Dane Co., Madison. June 24. II, III on *Carex sartwellii*. Rock Co., Evansville, October 4, 1953. Coll. R. W. Curtis. On *Carex haydenii*. Dane Co., Madison, August 7.

Puccinia silphii Schw. on *Silphium integrifolium* X *perfoliatum*. Green Co., Brodhead, July 20.

Phyllosticta rosae Desm. on *Rosa setigera* (cult.). Dane Co., Madison, July 8.

Phyllosticta cacaliae H. C. Greene on *Cirsium discolor*. Dane Co., Madison. August 18. On *Cacalia atriplicifolia*. Madison, August 26. This species is analogous to the more aptly named *Ascochyta compositarum* J. J. Davis in that both occur on a wide range of hosts within the Compositae.

Ascochyta compositarum J. J. Davis on *Aster umbellatus*. Dane Co., Madison, August 9. On *Prenanthes racemosa*. Madison, September 3.

Darlucalium filum (Biv.) Cast. on *Uromyces sporoboli* Ell. & Ev. III on *Sporobolus asper*. Lafayette Co., Ipswich, October 6.

Septoria andropogonis f. sporobolicola R. Sprague on *Sporobolus asper*. Grant Co., Nelson Dewey Memorial Park near Cassville, August 14, 1953.

SEPTORIA OENOTHERAE West. on *Oenothera parviflora*. Dunn Co., Elk Mound, September 5, 1953. Coll. D. E. Meyer.

SEPTORIA SONCHIFOLIA Cke. on *Sonchus oleraceus*. Columbia Co., near Lodi, August 17.

SEPTORIA HELIANTHI Ell. & Kell. on *Helianthus petiolaris*. Sauk Co., near Lone Rock, August 14, 1953.

SEPTORIA PSILOSTEGA Ell. & Mart. on *Galium trifidum*. Dane Co., Madison, September 4. The differentiation between *Galium tinctorium* and *G. trifidum* in the latest manuals is scarcely satisfactory and the above determination is made because the specimen in question seems to have a predominance of the characteristics ascribed to the latter.

HAINESIA LYTHRI (Desm.) Hoehn. on *Oenothera pilosella* Raf. Dane Co., Madison, June 24. On *Potentilla simplex (canadensis)*. Waukesha Co., Nashotah, July 13.

GLOEOSPORIUM BRUNNEO-MACULATUM H. C. Greene on *Trillium recurvatum*. Green Co., Oakly, July 9.

COLLETOTRICHUM GRAMINICOLA (Ces.) Wils. on *Agrostis alba*. Dane Co., Madison, August 19. Sprague in his "Diseases of Cereals and Grasses in North America" indicates Wisconsin as a host locality, but there is no earlier specimen in our herbarium and Davis did not report this fungus on red top.

ELLISIELLA CAUDATA (Pk.) Sacc. on *Sporobolus asper*. Grant Co., Nelson Dewey Memorial Park near Cassville, August 14, 1953.

OVULARIA PUSILLA (Ung.) Sacc. & D. Sacc. (*O. pulchella* (Ces.) Sacc.) on *Hierochloa odorata*. Columbia Co., Pacific Twp. near Swan Lake. July 27. The closely related *Phalaris arundinacea* commonly bears *Ovularia hordei* (Cav.) Sprague, but this specimen does not have the serpentine conidiophores which characterize the latter.

RAMULARIA CANADENSIS Ell. & Ev. on *Carex sartwellii*. Dane Co., Madison, August 1. On *Carex trichocarpa*. Lafayette Co., Yellowstone Lake near Fayette, August 25. On the basis of the material that I have examined, it would seem that this would be better referred to *Didymaria*.

RAMULARIA MINAX J. J. Davis on *Solidago altissima*. Grant Co., Nelson Dewey Memorial Park near Cassville, August 3.

SCOLECOTRICHUM GRAMINIS Fckl. on *Alopecurus pratensis*. Monroe Co., Melvina, June 20, 1940. Coll. L. H. Shinners.

HELMINTHOSPORIUM GIGANTEUM Heald & Wolf on *Phalaris arundinacea*, Iowa Co., 3 miles west of Mazomanie, August 10. On *Leersia oryzoides*. Dane Co., Madison, August 29. In the latter specimen some of the conidia measured as much as 350 x

27 μ . Drechsler, in his treatment of graminicolous species of *Helminthosporium* (Jour. Agr. Res. 24: 676. 1923), states "The conidia, which are produced in relatively small numbers, are easily the most massive of any species of *Helminthosporium* hitherto described, and are probably among the very largest produced by any group of fungi. . . . The volume of a spore of such dimensions is several hundred times greater than the volume of spores of molds that are not by any means regarded as minute fungi, while on comparison with some of the smallest types, like species of *Actinomyces*, ratios of approximately 1 to 300,000 may be obtained."

HELMINTHOSPORIUM SATIVUM Pamm., King & Bakke on *Stipa spartea*. Iowa Co., near Avoca, September 27.

CERCOSPORA CARICIS Oud. (*C. caricina* Ell. & Dearn.) on *Carex tenera*, *C. vulpinoidea*. Dane Co., Madison, July 17. On *Carex pennsylvanica*. Madison, August 24.

CERCOSPORA SILPHII Ell. & Ev. on *Silphium integrifolium*. Green Co., near Monticello, August 5.

ADDITIONAL SPECIES

The fungi mentioned have not been recorded before as occurring in Wisconsin.

MYCOSPHAERELLA SPLENIATA (C. & P.) House on *Quercus bicolor*. Iowa Co., Arena, April 15. On fallen, overwintered leaves, which developed the fully matured stage after five days in a moist chamber at room temperature. There can be little doubt that the microconidial form on *Quercus bicolor* and *Q. macrocarpa* in Wisconsin, which has been listed as *Phyllosticta livida* Ell. & Ev., is but the immature stage of *M. spleniata*. The type of *P. livida*, collected on *Quercus douglasii* in Amador Co., Calif., has been examined and shows close correspondence to Wisconsin specimens.

MELANNOMA POROTHELIA (B. & C.) Sacc. on *Stereum* sp. on *Cornus femina*. Dane Co., Madison, January 8, 1954. Coll. J. R. Jacobson. Perhaps only doubtfully parasitic. The *Stereum* had girdled the host trunks at ground line and, probably due to favorable moisture conditions, had in its older portions developed a much thicker layer of fungus tissue than is usually seen in *Stereum*.

TRANZSCHELIA SUFFUSCA (Holw.) Arth. on *Anemone patens* var. *wolfgangiana*. Columbia Co., Pacific Twp., near Swan Lake, June 9. Many large, old plants showed very heavy infection. An eastward extension of the Manual range.

PUCCINIA GRINDELIAE Peck on *Solidago nemoralis*. Columbia Co., near Lodi, September 24.

UROMYCES SPOROBOLI Ell. & Ev. II, III on *Sporobolus asper*. Lafayette Co., Ipswich, September 10. A decided eastward extension of the previously known range.

EXOBASIDIUM MYCETOPHILUM (Pk.) Burt. on *Collybia dryophila*. Dane Co., Madison, July 13. Coll. J. H. Grosklags. A very curious and interesting form, described and figured in Peck's 28th Report as *Tremella mycetophila*. Burt (Bull. Torr. Bot. Club 28: 285. 1901), from a study of stained sections, assigns the organism to *Exobasidium*. The host was growing under planted pines in the University of Wisconsin Arboretum.

PHYLLOSTICTA AMARANTHI Ell. & Kell. on *Amaranthus powellii*. Dane Co.; Madison, August 19.

Camarosporium parasiticum sp. nov.

Maculis orbicularibus, marginibus latis fuscis, centris pallidioribus, 2-5 (plerumque 2-3) mm. diam.; pycnidiis amphigenis, nigris, muris crassis supra, tenuioribus infra, subrostratis, subglobosis, 150-180 μ diam. ca.; conidiis fumosis, cylindraceutis, subcylindraceutis, subglobosis vel ovoideis, levibus, septatis varie, 13-20 x 10-13 μ .

Spots orbicular, with relatively wide dark brown border and paler center, 2-5 (mostly 2-3) mm. diam.; pycnidia amphigenous, black, thick-walled above, somewhat thinner below, subrostrate with a short thick black beak, subglobose, approx. 150-185 μ diam.; conidia smoky, cylindric, subcylindric, subglobose or ovoid, smooth, variously septate, 13-20 x 10-13 μ .

On living leaves of *Grindelia squarrosa*. Sect. 24, Township of Perry near the village of Forward, Dane County, Wisconsin, U. S. A., August 5, 1954.

The pycnidia are usually, but not always, arranged in a ring toward the margin of the spot. There is much diversity in the arrangement of the cross-septa in the conidia, many running at acute angles.

The only other species of *Camarosporium* which seems parasitic on living leaves with which I am familiar is *C. roume-guerei* Sacc. on Chenopodiaceae. Of a considerable number of species described on North American Compositae this is the only one on living tissue that I have noted.

Gloeosporium eragrostidis sp. nov.

Maculis nullis; acervulis carnosis, amphigenis, elongatis, 200-1200 μ longis x 90-135 μ latis; conidiophoris hyalinis, gracilibus,

ampulliformibus, 25–30 x 3μ ca.; conidiis hyalinis, brevo-cylindraceis vel cylindraceis, 5–10 x 3–4 μ .

Spots none, acervuli flesh-colored, amphigenous, more or less elongate, 200–1200 μ long x 90–135 μ wide; conidiophores hyaline, slender-flask-shaped, 25–30 x 3μ approx.; conidia hyaline, short-cylindric or cylindric, 5–10 x 3–4 μ .

On living leaves of *Eragrostis spectabilis* (Pursh) Steud. Two miles east of Arena, Iowa County, Wisconsin, U. S. A., August 10, 1954.

E. spectabilis is a xerophyte with very strongly ribbed, in-rolling leaves. The acervuli evidently originate in the mesophyll below the stomatal chambers, which are large and deep-set in this host. The acervuli develop within these chambers, filling them, and eventually breaking through to the leaf surface on one or both sides of the leaf. The conidiophores arise from a mass of pseudoparenchymatous tissue, are closely ranked, and appear to be simple and unbranched. The elongate shape of the acervuli is probably due to the xylem ridges of the host which sharply limit lateral development.

Colletotrichum typhae sp. nov.

Maculis flavo- vel rufo-brunneis, elongatis, 1–7 cm. x .25–1 cm. latis; acervulis in cinereis orbicularibus vel subellipticis centris; acervulis gregariis vel confertis, diam. variis, plerumque 100–200 μ ca., amphigenis, depressis; conidiophoris hyalinis, confertis, brevibus, 10–15 x 3μ ; setis in marginibus, saepe numerosis, muris crassis, laxis, subgeniculatis, fusco-brunneis, apicibus pallidioribus, subobtusis vel acutis, longitudinibus variis, interdum 150 x 4–5.5 μ ; conidiis hyalinis, granulosis, rectis, subcylindraceis vel subfusoides, 17–23 x 3–5 μ .

Lesions yellow- or reddish-brown, elongate, 1–7 cm. x .25–1 cm. wide, with the acervuli on an orbicular to subelliptic cinereous central portion; acervuli gregarious or crowded, diameter variable, mostly about 100–200 μ , amphigenous, sunken; conidiophores hyaline, crowded, short, about 10–15 x 3μ ; setae marginal, often numerous, thick-walled, rather lax, subgeniculate, dark brown with paler, subobtuse to pointed tips, length variable, up to 150 x 4–5.5 μ ; conidia hyaline, granular, straight, subcylindric or subfusoid, 17–23 x 3–5 μ .

On living leaves of *Typha latifolia*. University of Wisconsin Arboretum, Madison. Dane County, Wisconsin, U. S. A., September 25, 1953. Additional material was collected at the type station on August 7, 1954.

Colletotrichum arisaematis sp. nov.

Maculis fumosis, diaphanis, marginibus fuscis, angustis, orbicularibus, 4–7 mm. diam.; acervulis gregariis, amphigenis, parvis, rudibus, planis vel elevatis leviter, cellis pallido-brunneis; setis unicis vel in parvis fasciis (5–6), fere rectis vel curvis vel sinuosis nonnihil, claro-brunneis, muris crassis, attentuatis, apicibus acutis pallidioribus, 45–120 (plerumque 60–80 ca.) x 3–4 μ , 1–2-septatis, cellis basibus amplioribus nonnihil; conidiophoris hyalinis, tenuibus, brevibus, fere obsolete; conidiis hyalinis, cylindraceutis, granulosis, 15–22 x 3–4.5 μ .

Spots smoky, diaphanous, with narrow dark border, orbicular, 4–7 mm. diam.; acervuli gregarious, amphigenous, small, rudimentary, plane or even slightly elevated, the cells pale brown; setae single, or in small tufts of not more than 5 or 6, almost straight, or somewhat curved or sinuous, clear brown, rather thick-walled, attenuate, the acute tips paler, 45–120 (mostly 60–80 ca.) x 3–4 μ , 1–2-septate, basal cell moderately enlarged; conidiophores hyaline, slender, short, almost obsolete; conidia hyaline, cylindric, granular, 15–22 x 3–4.5 μ .

On living leaves of *Arisaema atrorubens* (*triphylllum*). New Glarus Woods Roadside Park, Green County, Wisconsin, U. S. A., June 14, 1954.

Scarcely the usual *Colletotrichum* but, in my judgment, best assigned here. The most striking thing about this species is the large number of individual setae, not in tufts and seemingly not associated with the acervuli. The enlarged basal cell of the seta is usually about twice the diameter of the adjacent portion. Although the acervuli, instead of being concave, the plane or even slightly elevated they can hardly, in my opinion, be regarded as sporodochia.

On the fresh green leaflets the spots are rather dull, but following pressing and drying they become very striking, as the normal host tissue tends to become decolorized. In addition to the actual spots there remains a dull green halo approx. 2 mm. wide around them indicating, it would seem, that the green color has been fixed to the outer limits of fungus infection.

Rather poor material of this species was collected in 1947 (*Amer. Midl. Nat.* 39: 447. 1948), at which time the fungus was discussed as being possibly close to *Ramularia arisaematis* Ell. & Dearn.

RAMULARIA GRINDELIAE Ell. & Kell. on *Grindelia squarrosa*. Dane Co., near Forward, August 5. A small specimen, but on the living leaves and closely corresponding to the original description.

CERCOSPORA BRACHIATA Ell. & Ev. on *Amaranthus blitoides*. On *Amaranthus albus*. Dane Co., Madison, August 28. Also on *Amaranthus retroflexus*. Madison, September 20.

CERCOSPORA AVICENNAE Chupp on *Abutilon theophrasti*. Dane Co., Black Earth, August 17. Davis collected a specimen on this host in 1935 and assigned it to *C. althaeina* Sacc., but Chupp regards the fungus on *Abutilon* as distinct, and describes it as a new species in his "Monograph of Cercospora", p. 369.

CERCOSPORA HELENIAE Chupp & Bisby on *Halenia deflexa*. According to Chupp, in his "Monograph of Cercospora" p. 238, Wisconsin specimens on *Halenia*, determined by Davis as *C. gentianicola* Ell. & Ev., are separate and distinct.

ALTERNARIA TENUIS Nees on *Vigna sinensis* (cult.). Dane Co., Madison, September 12, 1953. Coll. J. B. Sinclair. This appears strongly parasitic. It is highly probable that *Alternaria atrans* Gibson, described as on cowpea in Arizona, is a synonym of *A. tenuis*.

BRIOSIA AMPELOPHAGA Cav. on leaves of *Vitis riparia* (*vulpina*). Dane Co., Madison, September 11. Det. by S. J. Hughes of the Canadian Science Service. A most striking and interesting stilbaceous fungus, figured in *Flora Ital. Crypt. Pt. 1* (Hyphales): 184. 1910. The original description, prepared from material on *Vitis vinifera*, states that the fungus occurred on the fruit, but Hughes points out that in a recent record from Texas (*Index Pl. Dis. in U. S.—Pl. Dis. Surv. 5: 1186. 1953*) *Briosia* is mentioned as causing "leaf blotch", a most apt designation for the effect produced on *Vitis riparia*. Unless this is a recent introduction to Wisconsin, it is difficult to understand how it has hitherto escaped detection, what with the large and conspicuous lesions that are produced.

