

INDIANA FUNGI—X.

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The fungi discussed in the present paper are, for the most part, those collected in 1926 and 1927, and all have been obtained within our state. We are now including a very limited number obtained from our local markets, since a record of their occurrence may be of future value, as our local flora has been and will continue to be enlarged by the escaping of many such species.

It has been interesting to note the appearance, this fall, of some early spring fungi as *Sarcoscypha coccinea*. The conditions which have brought about an unusual amount of fall blooming of spring flowers and shrubs, have affected some fungi in a similar manner.

The present paper, like all the former of this series, is entirely independent of any other published lists of Indiana fungi. Our plan is to revise or enlarge descriptions and in many cases, to redescribe rather than to present a long list or to seek new species.

For the sake of brevity, we have observed the following: When the county is omitted, it is Monroe; when the name of the collector is not given, it is that of the writer; the host is living, unless otherwise stated; the locality within the county is mentioned only when it is thought to be of considerable importance.

Since our primary interest concerns the so-called Imperfect group, comments are confined chiefly to those fungi.

PHYCOMYCETES.

Bremia Lactucae E. Regel. On leaves of *Sonchus oleraceus* L., Campus, May 25, 1927. I. U. Herbarium No. 4747.

Peronospora effusa Rabenh. On leaves of *Spinacea oleracea* Mill. From local grocery. Very common. Possibly brought in from outside the state. Jan. 4, 1926.

BASIDIOMYCETES.

USTILAGINALES.

Tilletia corona Scrib. In ovaries of *Homalocenchrus oryzoides* (L.) Poll. Collected one mile north of Bloomington, October 23, 1926, by P. Weatherwax. 4162.

UREDINALES.

Aecidium hydnoides Berk. & Curt. On leaves of *Dirca palustris* L., Turkey Run State Park, Parke County, June 26, 1926. Very common in ravines. 4138.

Coleosporium Vernoniae B. & C. *Vernonia noveboracensis* Willd.,
Edinburg, Aug. 27, 1925. Stacy Hawkins. 4108. Common
in Monroe County.

Dicaeoma Fraxini (Schw.) Arth. [*Puccinia fraxinata* (Lk.) Arth.]
On leaves of *Fraxinus viridis* Michx., Clay County, Aug. 1, 1927.
Otho Shaw. 4801.

CLAVARIACEAE.

Clavaria amethystina Bull. "Base of limestone beech slope about
five miles south of Milltown, Crawford County, June 17, 1927.
C. C. Deam. No. 44583." 4829.

POLYPORACEAE.

Fomes igniarius L. On body of living *Juglans nigra* L., some ten
feet from the ground, Matlock's Woods, 1917. 4164.

Polyporus cuticularis Bull [*Innotus perplexus* (Pk.) Murr.] On
Fagus grandifolia Ehrh., near the campus, autumn of 1926.
Hugh Ramsey. Odor very strong; spores bright brown. These
specimens were filled with budding cells of a species of yeast.
4165.

AGARICACEAE.

Ananita abrupta Pk. Campus, July 15, 1925. 4074.

Panus rudis Fr. On dead area of the body of live *Sorbus Aucuparia*
L., campus, June and July, 1925. The pilei extended from
the ground to a distance of six feet up the tree. They ap-
peared again in both 1926 and 1927, apparently producing an
ever increasing canker-like area. 4072.

GASTEROMYCETES.

Geaster hygrometricus Pers. On ground, Nov. 27, 1926. Robinson.
4166.

Geaster minimus Schw. Moore's Creek, Oct., 1907. W. L. Wood-
burn. 2348.

ASCOMYCETES.

Claviceps purpurea (Fr.) Tul. On *Dactylis glomerata* L., near
state park, Steuben County, Aug. 10, 1927. Weatherwax. 4809.
Didymellina Iridis (Desm.) v. Hohn. [See *Heterosporium gracile*
(Wallr.) Sacc.] 4754.

Diplocarpon Rosae Wolf. [See *Actinonema Rosae* (Lib.) Fr.] 4200.

Epichloe typhina (Pers.) Tul. On *Sphenopholis pallens* (Spreng.)
Scrib., Brown County, July 18, 1926. Weatherwax. 4141.

Erysiphe cichoracearum D. C. On leaves of *Zinnia elegans* Jacq.,
Oct. 30, 1927. Terzo Amidei. 4825.

Erysiphe Polygoni D. C. On leaves of *Ranunculus abortivus* L.,
(young plants). Campus, Oct. 15, 1927. 4824.

Erysiphe Polygoni D. C. On *Trifolium pratense* L., June and July,
1927. 3922. Also occurring to a less degree on *T. hybridum* L.
and *T. repens* L. The writer first noted the severity of this

disease in Ohio in 1921. In 1922 it was common and destructive over much of Indiana. It developed rapidly early in the season, and began to cause comment about June 1. We find only the conidial stage. 3922.

Exoascus deformans (Berk.) Fckl. On leaves and ends of growing twigs of *Prunus Persica* Batsch., Johnson County, about May 1, 1927. This disease was unusually severe on unsprayed trees in 1927, causing almost complete defoliation in many cases. 4740.

Gibberella Saubinetii (Mont.) Sacc. On sheaths of *Zea mays* L., campus, Oct. 15, 1926. 4155.

Gnomonia veneta (Sacc. & Speg.) Kleb. [See *Gloeosporium nervisequum* (Fckl.) Sacc.] 4143.

Hypoxyylon atropunctatum Fr. On wood, Clay County, July 17, 1927. Shaw. 4771.

Microsphaera Alni (Wallr.) Wint. On leaflets of *Gleditsia triacanthos* L., in 1915. 4192.

Microsphaera Alni Vaccinii (Schw.) Salm. On leaves of *Catalpa Bungei* C. A. May, Oct., 1927. 4816.

Nummularia Bulliardii Tul. On wood, Clay County, July 17, 1927. Shaw. 4772.

Phyllachora graminis (Pers.) Fckl. On *Muehlenbergia Schreberi* J. F. Gmel., campus, Oct. 25, 1927. Amidei. 4819.

Pseudopeziza medicaginis (Lib.) Sacc. On leaves of *Medicago sativa* L., Clear Creek, June 1927. Lois Stump. 4762. This leaf-spot of alfalfa was unusually severe in the year 1927, causing early leaf defoliation. Crops were cut early to save the leaves. 4762.

Sarcoscypha coccinea (Jacq.) Fr. On buried stick, Nov. 13, 1927. Stump. 4835.

Sphaerotheca humuli (D. C.) Burr., var. *Fuliginea* Schlecht. On leaves and stems of *Sonchus asper* (L.) All., injuring the host late in the season. Our material has larger perithecia than is given by Salmon in his Monograph of the Erysiphaceae. They are larger, averaging about 100 microns, while other characters agree with the regular species, *S. humuli*. 4822. On leaves of *Prunella vulgaris* L., Oct. 30, 1927. Amidei. 4826.

Sphaerotheca pannosa (Wallr.) Lev. On leaves of cultivated rose, Jasper, Sept. 1, 1926. Wilson. 4207.

Uncinula circinata Cke. & Pk. Very common and abundant on living leaves of young *Acer saccharum* Marsh., campus, Oct. 15, 1927. Amidei. 4820.

Uncinula flexuosa Pk. On leaves of *Aesculus glabra* Willd., late in summer, 1926. 4189.

Uncinula necator (Schw.) Burr. On leaves of *Vitis cordifolia* Michx., University dam, Oct., 1927. Amidei. 4834. Same on *Ampelopsis quinquefolia* Michx., Biology Building, Oct. 19, 1927. Amidei. 4818. Both lots of material are very fine.

Xylaria polymorpha (Pers.) Grev. Clay County, July 17, 1927. Shaw. 4770.

FUNGI IMPERFECTI.

SPHAEROPSIDALES.

- Actinonema Rosae* (Lib.) Fr. (*Diplocarpon Rosae* Wolf.) On cultivated rose leaves, Clark County, 1926. 4200. The black spot of rose leaves is very common late in the season each year.
- Ascochyta althaeina* Sacc. & Bizz. On leaves of *Althaea rosea* Cav., six miles west of Bloomington, July 1, 1925. 4097. This species was associated with *Cercospora Kellermani* Bubak. (A thorough study of this species is being made.)
- Ascochyta Aquilegiae* (Roum. & Pat.) Sacc. On leaves of *Aquilegia canadensis* L., in D. M. Mottier's yard, July 1, 1927. 4760. So far as the writer is aware, this fungus has not heretofore been reported from America. Our description follows: Spots circular or oval, $\frac{1}{2}$ to $1\frac{1}{2}$ cm. in diameter, or sometimes spreading over a large area of the leaf, especially at its edge, dark brown, and bounded by yellow concentric, elevated rings, gray beneath; pycnidia large, 125 to 150 microns in diameter, located near the center of the spots, their pores being 25 to 30 microns across and ragged; spores hyaline, oblong, elliptical, straight or curved, mostly with two small guttulae, becoming two-celled and four-guttulate, and a few two-septate. The two-celled ones are often constricted at the septum or the cells may be of unequal size. The descriptions in Saccardo, vol. III, p. 396, and vol. XXII, p. 1013, taken together, correspond fairly well with our plants.
- Ascochyta Plantaginis* Sacc. & Speg. On leaves of *Plantago Rugelii* Dene., July 25, 1920. 4105. Also collected by G. Blaydes, June 17, 1924. 4013. It agrees well with the description except that most spores have two guttulae in each cell. Number 4105 is associated with *Septoria inconspicua* B. & C. and a *Diplodia*.
- Ascochyta Rhei* E. & E. On leaves of *Rheum Rhaponticum* L., Clay County, Aug. 1, 1927. Shaw. 4806. The pycnidia measure 70 to 150 microns in diameter.
- Discosia artocreas* (Tode.) Fr. On spots on leaves of *Sassafras variifolium* (Salisb.) Ktze., Sept. 1, 1926. Wilson. Du Bois County. 4205.
- Dothiorella Asiminae* E. & E. On dead twigs of *Asimina triloba* Dunal., campus, Oct. 15, 1927. Our material has pycnidia $\frac{1}{4}$ to 1 mm. in diameter and spores 2 by 7 microns and mostly allantoid.
- Entomosporium Thuemenii* (Cke.) Sacc. On leaves of *Crataegus oxyacanthae* L., campus, Thomas. 4115.
- Phleospora maculans* (Bereng.) Allesch. [*Fusarium maculans* Bereng. *Phleospora Mori* (Lev.) Sacc. *Septoria Mori* Lev. *Fusisporium cingulatum* Mont. *Fusisporium Mori* Mont. *Septigloeum Mori* (Lev.) Brios & Cavar. *Cheilaria Mori* Deem.] On living leaves of *Morus rubra* L., Griffey Creek, July 2, 1927. G. A. Loughridge. 4764. Spores are 3 to 5 by 25 to 80 microns, hyaline, variously curved or bent, guttulate, and mostly three-

septate. (The septa are difficult to observe on account of the guttulae.)

Phoma uvicola B. & C. (See *Phyllosticta Labruscae* Thuem.) Common on cultivated grape berries every year.

Phyllosticta ambrosioides Thuem. On leaves of *Chenopodium ambrosioides* var. *anthelminticum* (L.) Gray., Clay County, Aug. 1, 1927. Shaw. 4805. Agrees most excellently, except that our spores are $1\frac{1}{2}$ by 4 to 7. They are given as $1\frac{1}{2}$ by 4 to 5 microns.

Phyllosticta Asiminae Ell. & Kell. On leaves of *Asimina triloba* Dunal., campus, Oct. 14, 1927. 4813. Pycnidia abundant over the entire spot, 75 to 125 microns with definite spores about 12 microns in diameter. Spores granular, numerous. This species is very common throughout the range of its host in the state. The leaves are often beset with spots of various sizes, many of which coalesce and often destroy most of the leaf. The spots fall away particularly during rainy weather.

Phyllosticta Labruscae Thuem. [*Guignardia Bidwellii* (Ell.) Viala & Ravaz. See also *Phoma uvicola* B. & C.] On living leaves of *Cissus Ampelopsidis* Pers. (*Ampelopsis quinquefolia* Michx.), campus, June 27, 1927. Stump. 4761. Common every year.

Phyllosticta minima (B. & C.) E. & E. On leaves of *Acer saccharum* Marsh., in woods, Scott County. Hawkins, August 29, 1925. 4107.

Phyllosticta minutissima E. & E. On leaves of *Acer Negundo* L., campus, Oct. 12, 1926. 4172. Agrees well except spots are as much as 1 cm. or more in size.

Phyllosticta phomiformis Sacc. On leaves of *Quercus* sp., campus, Aug. 4, 1926. Wilson. 4150.

Phyllosticta Platani Sacc. & Speg. On leaves of *Platanus orientalis* L., campus, Oct. 22, 1926. H. L. Eaton. 4169.

Phyllosticta verbascicola Ell. & Kell. On leaves of *Verbascum Thapsus* L., Clear Creek, July 18, 1927. Stump. 4769. This material is exactly typical of original description.

Septoria Apii Rostr. On leaflets and leaf stalks of *Apium graveolens* L. Common in market, October and November, 1924, no. 4125. Oct. 30, 1927, 4823.

Septoria inconspicua B. & C. On leaves of *Plantago Rugelii* Dene., July 25, 1920. 4103. Associated with *Ascochyta Plantaginis* Sacc., *Ramularia Plantaginis* Pk., and a *Diplodia*. Spots chiefly along edges of leaf, indefinite; pycnidia about 50 to 75 microns with pore definite and 12 to 15 in diameter; spores very slender, $\frac{1}{2}$ to 1 by 15 to 25 microns, straight or curved, hyaline.

Septoria Nolitantangere Thuem. On leaves of *Impatiens pallida* Nutt., Griffey Creek, July 20, 1927. 4787. Corresponds well with published descriptions. Our material shows pycnidia 50 to 100 microns in diam., most of them being about 50. The spores are $1\frac{1}{2}$ by 15 to 25, and often one or sometimes several septate. So far as we are aware, this species has not heretofore been reported from the United States.

Septoria Oenotherae West. On leaves of *Oenothera biennis* L., Aug. 7, 1915. 3633. Varies in having spores $1\frac{1}{2}$ to 2 by 25 to 82 microns.

MELANCONIALES.

Gloeosporium affine Ell. & Kell. On leaves of *Sassafras variifolium* (Salisb.) Kitz., Griffey Creek, July 2, 1927. Loughridge. 4767. Common.

Gloeosporium Coryli (Desm.) Sacc. On leaves of *Corylus americana* Walt., campus, Oct., 1921, 4109; Oct. 12, 1923, 4001; July 20, 1926, 4140. Pycnidium covered by membranaceous tissue, flat, circular or oval, 50 to 100 microns, opening by a slit; spores mostly oblong but occasionally narrowed at one end, 5 to $7\frac{1}{2}$ by 12 to 17 (average about 7 by 13.). [Syn. *Cheilaria Coryli* Desm. & Rob., *Labrella Coryli* (Desm. & Rob.) Sacc., *Phyllosticta corylina* Ell. & Mart.] This species has proved to be puzzling on account of the nature of the covering of the fruit body. The writer has hesitated to place it elsewhere than *Labrella Coruli* (Desm. & Rob.) Sacc., as this genus seems to have been erected to suit such fruiting forms.

Gloeosporium nervisequum (Fckl.) Sacc. [*Gnomonia veneta* (Sacc. & Speg.) Kleb.] On leaves and young twigs of *Platanus occidentalis* L., Parke County, June 26, 1926. 4143. Abundant on veins but not occurring to any extent on twigs in 1926. The disease of sycamore caused by this fungus had been increasing in severity for a number of years, some old trees finally succumbing from its effects; but in 1925, it was almost wholly absent, probably due to the very unusually dry weather at the time of spring infection. In both 1925 and 1926 its injurious effects were slight in Monroe County.

Gloeosporium Ribis (Lib.) Mont. & Desm. (*Pseudopeziza Ribis* Kleb.) On leaves of *Ribes Grossularia* L., garden, June 13, 1927. Stump. 4752. Severe this year.

HYPHOMYCETES.

Alternaria olivaceum (E. & E.) (*Macrosporium olivaceum* E. & E. Proc. Acad. Phil., 1894, p. 383.) On *Phyllosticta Asiminae* Ell. & Kell., which, in turn, is on *Asiminae triloba* Dunal. The conidiophores arise particularly from the pycnida of its host, very many coming through the pore in tufts. The conidiophores are 4 to 6 by a maximum of 100 microns. The spores are in chains, measure 7 to 15 by 20 to 37 microns, and are three to 5-septate, many being muriform. On account of its very close resemblance to *Macrosporium olivaceum* E. & E., we feel justified in placing it as *Alternaria olivaceum* (E. & E.). It was reported originally by Ellis and Everhart on *Sphaeropsis Asiminae* E. & E. which occurred on *Asimina triloba*. The spores hang together unusually well, remaining in chains in water mounts made from the leaves.

- Botrytis cinerea* Auct. On leaves and young growing canes of *Ribes odoratum* Wendl., July 12, 1926. 4142. Collected each year since 1918. It produces a disease known as "Die Back." [See Proc. Ind. Acad. Sci., vol. 36, 1926 (1927).]
- Cercospora beticola* Sacc. On leaves of *Beta vulgaris* L., Jay County, Sept. 2, 1926. Wilson. 4838.
- Cercospora mississippiensis* Tracy & Earle. On *Smilax lanceolata* L., shipped from the south, Dec. 15, 1925. Included here, as such material is usually cast out and might easily have become the source of infection of our native species, as *S. rotundifolia* L.
- Fusicladium dendriticum* (Wallr.) Fckl. [*Venturia inequalis* (Cke.) Wint.] On leaves of *Pyrus coronaria* L., field, Griffey Creek, July 20, 1927. 4800.
- Graphium Hamamelidis* Van Hook. Ind. Acad. Sci., vol. 35, p. 231, 1925 (1926). On living leaves of *Hamamelis virginiana* L., in Brown, Clark and Monroe counties; also in New York and Ohio. 3852. 4082.
- Heterosporium gracile* (Wallr.) Sacc. [*Didymellina Iridis* (Desm.) v. Hoehn.] On leaves of *Iris* varieties, June 10, 1927. Several collections made in Bloomington by Hudelson who also contributed material from Brown County. 4742. 4754. By far the worst in the observation of the writer, causing serious destruction of leaves.
- Ramularia lactea* (Desm.) Sacc. On small leaves of seedlings of *Viola sororia* Willd., campus, Oct. 15, 1927. 4821. Agrees except spots brown with olive to yellowish margins; spores 2 to 3 (occasionally 4) by 18 to 25 microns, sometimes hanging together in chains of a few. So far as is known to the writer, this species has not been previously reported from the United States. However a *Ramularia* sp. on a species of *Viola* reported from Washington state, may be this one. While our specimens do not agree fully with published descriptions, the variation of the species, together with the fact that they occurred on seedlings late in the season, may account for the difference shown by our fungus.

MYCELIA-STERILIA.

- Sclerotium Rolfsii* Sacc. On cultivated *Iris* in gardens, causing much destruction from rotting at the ground, July, 1926. 4153. Also on *Funkia ovata* Spreng., yard in Bloomington, Oct. 15, 1926. 4154. This caused all the leaves of the rosette to rot off at ground, the surface of the ground being covered with sclerotia.

