

THE UREDINALES OF INDIANA II.¹

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The following records of Indiana rusts are presented at this time as the first supplement to the article by the writer on "The Uredinales of Indiana," which was published in the Proceedings of the Academy for 1915. All the unrecorded species which have come to hand since the publication of that list are included, together with a few forms which for one reason or another were omitted at that time.

A large number of collections have been examined which add many new localities and a number of new hosts for previously recorded species. These are not included in the present list but will be recorded at another time. The previous list contained records of 141 species exclusive of unconnected species of *Aecidium*. The latter are included in the present list and taken together with other accessions brings the number of species known from the State to a total of 155.

In order to avoid making new combinations the older and more familiar nomenclature is used.

The writer is under great obligation to all those who have been kind enough to furnish specimens for study, especially to Dr. J. C. Arthur, Prof. G. N. Hoffer, Mr. C. C. Deam and Mr. J. B. Demaree, who have placed their collections at his disposal.

UREDINACEAE.

142. MELAMPSORA EUPHORBIAE-GERARDIANA W. Müller, Centr. Bakt. 17²:210. 1906.

ON EUPHORBIACEAE:

Tithymalus commutatus (Engelm.) K. and Garcke, West of High Lake, Noble County, June 11, 1916, C. C. Deam 20083A; Wea Creek, S. W. Lafayette, Tippecanoe County, April 22, 1917, E. J. Petry.

The above are the only collections of this species from North America (Mains, Phytopath. 7:102. 1917).

¹ Contribution from the Botanical Department of the Purdue University Agricultural Experiment Station.

The second collection also bore some *Aecidium Tithymali*. Both species develop the sori on a diffused mycelium.

143. UREDINOPSIS ATKINSONII Magn. Hedwigia 43:123. 1904.

ON POLYPODIACEAE:

Dryopteris thelypetris (L.) A. Gray, Winona Lake, Kosciusko County, August 31, 1916, H. S. Jackson and G. N. Hoffer.

144. UREDINOPSIS MIRABILIS (Pk.) Magn. Hedwigia 43:121. 1904.

Septoria mirabilis Pk. Ann. Rep. N. Y. State Mus. 25:87. 1873.

ON POLYPODIACEAE:

Onoclea sensibilis L., Winona Lake, Kosciusko County, August 31, 1916, H. S. Jackson and G. N. Hoffer.

PUCCINIACEAE.

145. PUCCINIA ACETOSAE (Schum.) Körn. Hedwigia 15:184. 1876.

Uredo Acetosae Schum. Enum. Pl. Saell. 2:231. 1803.

ON POLYGONACEAE:

Rumex acetosella L., North Madison, Jefferson County, May 14, 1916, J. B. Demaree.

This is the first collection which we have seen of this species from any inland state. It is known otherwise only from Atlantic coast states and from near the Pacific coast in Oregon.

146. PUCCINIA LYSIMACHIATA (Lk.) Kern, Mycologia 9:215. 1917.

Aecidium Lysimachiae Schw. Schrift. Nat. Ges. Leipzig 1:67. 1822.

Puccinia Limosae Magn. Amtl. Ber. Vers. Deutsch. Naturf. u. Aerzte 1877:200. 1877.

ON PRIMULACEAE: *

Naumburgia thyrsiflora (L.) Duby, Ligonier, Noble County, June 18, 1917, C. C. Deam 23665.

Aecia only have been collected in Indiana. Uredinia and telia are recorded from the eastern and middle western States on various species of *Carex*. No successful culture work has been conducted in America, the connection having been established by European authors.

147. *UROMYCES HOUSTONIATUS* (Schw.) Sheldon, *Torreyia* 9:55. 1909.
Caeoma (Aecidium) houstoniatum Schw. Trans. Am. Phil. Soc.
 II. 4:293. 1832.

ON RUBIACEAE:

Houstonia caerulea L., Bennettsville, Clarke County, May 30, 1917,
 C. C. Deam 23260.

This species has uredinia and telia on *Sisyrinchium* sp., culture work having been conducted first by Sheldon (l. c.) and later confirmed by Arthur (Mycol. 1:237. 1909). The telia have not yet been collected in Indiana.

148. *UROMYCES MAGNATUS* Arth. *Mycologia* 9:311. 1917.
Aecidium magnatum Arth. Bull. Torrey Club 28:664. 1901.

ON CONVALLARIACEAE:

Polygonatum biflorum (Walt.) Ell., Ontario, Lagrange County,
 June 17, 1917, C. C. Deam 23642.

This aecidium has not before been reported from Indiana. It has recently been shown by Arthur (l. c.) to be connected with uredinia and telia on *Spartina* formerly included with *Uromyces acuminatus* Arth. (*Nigredo Polemonii* (Pk.) Arth.). The telia are indistinguishable from the collective species which has aecia also on various members of the Caryophyllaceae, Primulaceae and Polemoniaceae. This form is here listed under the distinctive name as the aeciospores are considerably larger than the forms on other aecial hosts belonging to the families mentioned above.

Telia have been collected in Indiana on *Spartina Michauxiana* and reported in previous lists under the collective name. Aecia are also known on *Polemonium reptans*.

149. *UROMYCES SEDITIOSUS* Kern, *Torreyia* 11:212. 1911.

ON POACEAE:

Aristida ramosissima Engelm., Washington, Daviess Co., September 29, 1910, C. C. Deam 7618; Elberfeld, Warrick County, October 4, 1916, H. S. Jackson.

Aecia occur on various species of *Plantago* but have not yet been collected in Indiana.

UNCONNECTED FORMS.

150. *AECIDIUM BOEHMERIAE* Arth. Bull. Torrey Club 34:590. 1907.

ON URTICACEAE:

Boehmeria cylindrica (L.) Willd., Shades, Montgomery County, May 26, 1899, J. C. Arthur.

An unconnected *Aecidium* the relationship of which is uncertain. It has been collected otherwise only in Tacoma Park, District of Columbia.

151. *AECIDIUM DICENTRAE* Trel. Trans. Wis. Acad. Sci. 6:136. Nov. 1884.

ON FUMARIACEAE:

Bicuculla Cucullaria (L.) Millsp., Crawfordsville, Montgomery County, June 1893, E. W. Olive.

No clue to the relationship of this interesting *aecidium* is available.

152. *AECIDIUM TITHYMALI* Arth. Bull. Torrey Club 45:151. 1918.

ON EUPHORBIACEAE:

Tithymalus commutatus (Engelm.) Kl. & Garcke, Lafayette, Tippecanoe County, June 7, 1901, H. B. Dörner, 1905, G. W. Wilson, May 13, 1910, F. D. Kern and T. Billings, April 27, 1917, E. J. Petry; Crawfordsville, Montgomery County, May 17, 1913, F. D. Kern.

While many attempts have been made to culture this presumably heteroecious form, no success has been met with and its relationship is still in doubt. It has formerly been commonly reported as *A. Euphorbiae* Pers., now interpreted as a European species not occurring in America.

153. *AECIDIUM HYDNOIDEUM* B. & C. Grevillea 3:61. 1874.

ON THYMELIACEAE:

Dirca palustris L., Crawfordsville, Montgomery County, 1893, E. W. Olive; Everton, Fayette County, June 24, 1913, May 14, 1915, C. A. Ludwig (Barth. N. A. Ured. 901; Fungi Columb. 4501); West Lafayette, Tippecanoe County, June 5, 1911, G. N. Hoffer; Urmeysville, Johnson County, 1890, E. M. Fisher 929.

A very distinct and quite common heteroecious form which has not been successfully connected, though many attempts at culture have been made.

154. *AECIDIUM PHYSALIDIS* Burrill, Bot. Gaz. 9:190. 1884.

ON SOLANACEAE:

Physalis heterophylla Nees, Wea Creek, below Elston, Tippecanoe County, June 27, 1900, Wm. Stuart.

A distinct form developing from a diffused mycelium. Only pycnia are present in the specimen listed above though the species has frequently been observed in this locality. Another collection is reported by Underwood.

155. *AECIDIUM TRILLII* Burrill, Bot. Gaz. 9:190. 1884.

ON TRILLIACEAE:

Trillium sp., Lafayette, Tippecanoe County, June 1894, K. Golden.

Reported by Miss Lillian Snyder in the Proceedings for 1896, p. 218. No specimens have been seen. A rather rare species whose relationship is unknown.

