

- MacDougal, Daniel T.** The plants of Putnam county. (Read, 1889.)
Paper in the hands of the survey; most of the plants it represents are in the herbarium of DePauw University.
- Meyncke, O. M.** Notes on the White-spored Agarics of Franklin county, Ind. (Read, 1887.)
Paper not accessible; plants represented by the notes not preserved.
- Mikels, Rosa Redding.** Preliminary paper on the flora of Henry county, Ind. (Read, 1891.)
Paper accessible; few plants to represent the flora preserved.
- Shannon, W. P.** The Occurrence of *Veratrum Woodii* in Decatur county, Ind. (Read, 1890.)
- Spillman, W. J.** Preliminary list of Knox county plants. (Read, 1890.)
Paper not accessible; a list of Knox county plants in the herbarium of the writer is in the hands of the survey.

APPENDIX B.

LIST OF CRYPTOGAMS AT PRESENT KNOWN TO INHABIT THE STATE OF INDIANA.

In the following list specimens collected by various persons are duly credited; where no collector is named, the collection was made by the Director of the Survey. The plants collected by Mr. Fisher are in the U. S. Nat. herbarium; a few of these have not been collected by any one else. Unless a special statement is made, all species are represented in the Underwood herbarium; reference is made in brackets for those species not in our possession. A considerable amount of material including some interesting algae has not been fully determined as yet, and some small collections have not been worked over.

MYXOMYCETES.

- ARCYRIA CINEREA* (Bull.) Schum. Vermillion, 7, 1889 (Arthur).
- ARCYRIA PUNICEA* Pers. Vermillion, 7, 1889 (Arthur); Putnam, 10, 1893.
- BADHAMIA UTRICULARIS* (Bull.) Berk. Putnam, 10, 1893.
- CERATIOMYXA MUCIDA* (Pers.) Schröt. (*Ceratium hydroides* Auct.) Vigo, 5, 1893.
- COMATRICHA LONGA* Pk. Putnam, 7, 1893.
- DICTYDIUM LONGIPES* Morg. Vermillion, 9, 1889 (Arthur).
- DIDYMIUM FARINACEUM* Schrad. Putnam, 5, 1892.

- DIDYMIUM MICROCARPUM (Fr.) Rost. Putnam, 3, 1894.
 FULIGO SEPTICA (Link.) Gmel. Vermillion, 7, 1889 (Arthur); Putnam, 7, 1893.
 HEMIARCYRIA CLAVATA (Pers.) Rost. Putnam, 10, 1892.
 HEMIARCYRIA PLUMOSA Morg. Vermillion, 7, 1889 (Arthur).
 HEMIARCYRIA RUBIFORMIS (Pers.) Rost. Vermillion, 7, 1889 (Arthur); Putnam, 10, 1892.
 LAMPRODERMA VIOLACEUM (Fr.) Rost. Putnam, 10, 1893.
 LYCOGALA EPIDENDRUM Buxb. Putnam, 5, 1890 (Arthur); 10, 1891; 10, 1893.
 LYCOGALA FLAVO-FUSCUM (Ehrenb.) Rost. Putnam, 11, 1893.
 STEMONITIS FERRUGINEA Ehrh. Vermillion, 7, 1889 (Arthur). [Herb. Arthur.]
 STEMONITIS FUSCA Roth. Vermillion, 7, 1889 (Arthur).
 STEMONITIS NIGRESCENS Rex. Putnam, 10, 1893.
 TRICHIA SCABRA Rost. Tippecanoe, 2, 1892 (Arthur); Putnam, 10, 1892.
 TRICHIA VARIA Pers. Putnam, 10, 1891; 10, 1892; 10, 1893.
 TUBULINA CYLINDRICA (Bull.) D C. Vermillion, 7, 1889 (Arthur).

PHYCOMYCETES.

SYNCHITRIACEÆ

- SYNCHITRIUM DECIDIENS Farl.
 On *Amphicarpa monoica*, Putnam, 9, 1893; Johnson, 9, 1890, (Fisher).
 SYNCHITRIUM FULGENS Schröt.
 On *Enothera biennis*, Brown, 5, 1893.

MUCORACEÆ.

- MUCOR STOLONIFER Ehrh. enb.
 On bread, Putnam, 1891.

ENTOMOPHTHORACEÆ.

- EMPUSA MUSCÆ Cohn.
 On flies, Putnam, 10, 1893.

PERONOSPORACEÆ.

- ALBUGO AMARANTHI (Schw.) Kuntze. (*Cystopus bliti*).
 On *Amarantus* sp., Putnam, 10, 1892; Tippecanoe, 7, 1890 (Bolley).
 On *Amarantus chlorostachys hybridus*, Johnson, 7, 1890 (Fisher).
 On *Amarantus retroflexus*, Johnson, 7, 1890 (Fisher).
 On *Amarantus spinosus*? Montgomery, 1893 (Olive).
 ALBUGO CANDIDUS (Pers.) Kuntze. (*Cystopus candidus*).
 On *Sisymbrium officinale*, Brown, 5, 1893; Putnam, 7, 1893.

On *Capsella bursa-pastoris*, Putnam, 4, 1892; Montgomery, 1893 (Olive).

On Radish. Putnam, 9, 1891; Johnson, 8, 1890 (Fisher).

On *Sisymbrium canescens*, Putnam, 5, 1893.

On *Brassica nigra*, Johnson, 7, 1890 (Fisher); Tippecanoe, 8, 1891 (Arthur).

On *Brassica alba*, Johnson, 7, 1890 (Fisher).

On *Lepidium Virginicum*, Montgomery, 1893 (Olive); Putnam, 4, 1894.

On *Dentaria* sp., Montgomery, 1893 (Olive).

ALBUGO IPOMEÆ-PANDURANÆ (Schw.) Swingle.

On *Ipomœa hederacea*, Putnam, 9, 1893.

On *Ipomœa pandurata*, Johnson, 9, 1890 (Fisher).

ALBUGO PORTULACÆ (D C.) Kuntze.

On *Portulaca oleracea*, Putnam, 6, 1893; Johnson, 8, 1890 (Fisher);

Montgomery, 1893 (Olive); Tippecanoe 7, 1890 (Bolley).

PLASMOPARA AUSTRALIS (Speg.) Swingle.

On *Sicyos angulatus*, Johnson, 9, 1890 (Fisher). [Herb. U. S.]

PLASMOPARA GERANII (Pk.) Berl. et De Toni.

On *Geranium Carolinianum*, Putnam, 5, 1892; Vigo, 5, 1893.

PLASMOPARA HALSTEDII (Farl.) Berl. et De Toni.

On *Bidens connata*, Johnson, 9, 1890 (Fisher).

On *Bidens frondosa*, Johnson, 8, 1890 (Fisher).

On *Helianthus annuus*, Montgomery, 1893 (Olive).

PLASMOPARA OBDUCCENS Schröt.

On *Impatiens* sp., Putnam, 4, 1892.

On *Impatiens pallida*, Tippecanoe, 5, 1893 (Arthur).

PLASMOPARA VITICOLA (B. and C.) Berl. et De Toni.

On *Vitis cordifolia*, Johnson, 7, 1890 (Fisher).

On *Vitis* (sp. cult.), Johnson, 9, 1890 (Fisher); Montgomery, 1893 (Olive).

Putnam, 7, 1893; Crawford, 9, 1889 (Arthur).

PERONOSPORA ALTA Fckl.

On *Plantago major*, Johnson, 7, 1890 (Fisher); Putnam, 5, 1894.

PERONOSPORA CORYDALIS De Bary.

On *Dicentra Canadensis*, Putnam, 4, 1892; 4, 1893.

On *Dicentra cucullaria*, Montgomery, 1893 (Olive).

PERONOSPORA EFFUSA (Grev.) Rabenh.

On *Chenopodium* sp., Putnam, 9, 1891.

On *Chenopodium album*, Johnson, 9, 1890 (Fisher).

PERONOSPORA FICARIE Tul.

On *Ranunculus* sp., Putnam, 4, 1893.

On *Ranunculus recurvatus*, Montgomery, 1893 (Olive).

PERONOSPORA RUMICIS Corda.

On *Polygonum dumetorum scandens*, Johnson, 7, 1890 (Fisher). [Herb. U. S.]

ASCOMYCETES.

DISCOMYCETES.

CHLOROSPHELIUM AERUGINOSUM (Oeder.) De Not. Putnam, 12, 1893.

HELOTIUM CITRINUM (Hedw.) Fr. Putnam, 10, 1892; 7, 1893; 10, 1893.

PEZIZA COCCINEA Jacq. Putnam, 5, 1893.

PEZIZA OCCIDENTALIS Schw. Vigo, 5, 1893; Bown, 5, 1893.

PEZIZA SCUTELLATA L. Putnam, 5, 1893.

PSILOPEZIA NUMMULARIS Berk. Putnam, 10, 1893.

URNULA CRATERIUM (Schw.) Fr. Tippecanoe, 4, 1892; Montgomery, 4, 1892; Putnam, 5, 1892; 5, 1893; Vigo, 5, 1893.

RHYTISMA ACERINUM (Pers.) Fr.

On *Acer saccharinum* (*A. dasycarpum*) Putnam, 10, 1891; 10, 1893; Marshall, 10, 1893.

RHYTISMA ANDROMEDE (Pers.) Fr.

On *Andromeda polifolia*, Fulton, 10, 1893.

RHYTISMA PRINI (Schw.) Fr.

On *Ilex verticillata*, Marshall, 10, 1893; Vigo, 10, 1893.

GYROMITRA BRUNNEA n. sp. A stout, fleshy, stipitate plant, 8-13 cm. high, bearing a broad, much contorted, brown ascoma; stem 2-5 cm. thick, more or less enlarged and spongy-solid at the base, hollow below, rarely slightly fluted, clear white; receptacle 5-12 cm. across in the widest direction, the two diameters usually considerably unequal, irregularly lobed and plicate, in places faintly marked into areas by indistinct anastomosing ridges, closely cohering with the stem in various parts, rich chocolate brown or somewhat lighter if much covered with the leaves among which it grows, whitish underneath; asci 8-spored; spores oval, 28-30 mic. long by about 14 wide, hyaline, somewhat roughened-tuberculate, usually nucleate, the highly refractive nucleus spherical or oval, 11 mic. or if oval 14 by 11 mic. in diameter; paraphyses slender, enlarged at the apex, faintly septate. In rich woods, mostly in beech leaf mould; Putnam county, May 1892, 1893 and 1894, first found by Dr. W. V. Brown. The plant is esculent, tender and* possesses a fine flavor. Often as many as 8 or 10 plants would be found in one small area but the plant appears to be local

and never very abundant. Some single plants would weigh nearly half a pound.

MORCHELLA ESCULENTA (L.) Pers. Putnam, 4, 1892; 5, 1893.

MORCHELLA RIMOSIPES D C. Putnam, 4, 1892.

MORCHELLA HYBRIDA (Sow.) Pers. (*M. semilibera* D C.) Putnam, 4, 1892.

MORCHELLA CONICA Pers. Putnam, 5, 1893.

GYMNOASCÆE.

EXOASCUS DEFORMANS (Berk.) Fckl.

On peach leaves, Putnam, 5, 1892; Vigo, 5, 1893; Monroe, 5, 1893; Montgomery, 1893 (Olive); Tippecanoe 6, 1890 (Bolley).

EXOASCUS POTENTILLE Parl.

On *Potentilla Canadensis*, Vigo 5, 1893; Putnam, 5, 1893.

EXOASCUS PRUNI (Tul.) Fckl.

On *Prunus Americana*, Monroe, 5, 1893.

EXOASCUS sp.

On *Ostrya Virginica*, Putnam, 5, 1893; Vigo, 5, 1893.

LICHENES.

ARTHONIA SPECTABILIS Fl. Putnam, 5, 1893.

BUELLIA PARASINA (Ach.) Th. Fr. Putnam, 5, 1893.

CLADONIA CESPITICIA (Pers.) Fl. Putnam, 5, 1893.

CLADONIA FIMBRIATA (L.) Fr. Putnam, 5, 1893.

CLADONIA FURCATA (Hud.) Fr. Putnam, 5, 1893.

CLADONIA MITRULA Tuck. Putnam, 5, 1893.

CLADONIA PYNIDATA (L.) Fr. Putnam, 4, 1893.

CLADONIA SYMPHYCARPA Fr. Putnam, 4, 1893.

ENDOCARPON MINIATUM Fr. Owen, 5, 1893; 10, 1893.

GRAPHIS SCRIPTA Fr. Putnam, 10, 1891.

LECANORA PALLIDA (Schreb.) Schær. Putnam, 5, 1893.

LECANORA SUBFUSCA (L.) Ach. Putnam, 5, 1893.

LECANORA TARTAREA (L.) Ach. Putnam, 5, 1893.

LECIDEA ALBOCERULESCENS (Wulf.) Schoen. Putnam, 5, 1893.

NEPHROMA HELVETICUM Ach. Putnam, 5, 1893.

NEPHROMA LEVIGATUM Ach. Putnam, 5, 1893.

PARMELIA CAPERATA (L.) Ach. Putnam, 4, 1893.

PARMELIA COLPODES (Ach.) Nyl. Putnam, 5, 1893.

PARMELIA PERFORATA (Jacq.) Ach. Putnam, 5, 1893.

PARMELIA SAXATILIS (L.) Fr. Putnam, 4, 1893.

PARMELIA TILIACEA (Hoffm.) Floerk. Putnam, 5, 1893.

- PELTIGERA CANINA (L.) Hoffm. Putnam, 5, 1893.
 PERTUSARIA COMMUNE D C. Putnam, 5, 1893.
 PERTUSARIA VELATA (Turn.) Nyl. Putnam, 5, 1893.
 PHYSCIA STELLARIS (L.) Tuck. Putnam, 10, 1891.
 RAMALINA CALICARIS (L.) Fr. Putnam, 4, 1892.
 STICTA AMPLISSIMA (Scop.) Mass. Putnam, 5, 1893.
 STICTA PULMONARIA (L.) Ach. Putnam, 10, 1891; Owen, 10, 1893.
 THELOSCHISTES CONCOLOR (Dicks.) Tuck. Putnam 10, 1891.
 USNEA BARBATA (L.) Fr. Putnam, 5, 1893; Brown, 5, 1893; Owen, 5, 1893;
 Marshall, 10, 1893.

PERISPORIACEÆ.

ERYSIPIÆ CICHORACEARUM D C.

- On *Actinomeris squarrosa*, Johnson, 10, 1890 (Fisher).
 On *Ambrosia artemisiæifolia*, Johnson, 8, 1890 (Fisher); Marshall, 10,
 1893; Montgomery, 1893 (Olive).
 On *Ambrosia trifida*, Johnson, 8, 1890 (Fisher); Montgomery (Brannon,
 Olive); Putnam, 10, 1891.
 On *Aster cordifolius*, Johnson, 10, 1890 (Fisher).
 On *Aster Novæ-Angliæ*, Johnson, 9, 1890 (Fisher).
 On *Aster paniculatus*, Johnson, 10, 1890 (Fisher); Montgomery, 1893
 (Olive).
 On *Aster puniceus*, Johnson, 11, 1890 (Fisher).
 On *Aster Tradescanti*, Johnson, 10, 1890 (Fisher).
 On *Aster ericoides*, Montgomery, 1893 (Olive).
 On *Aster azureus*, Montgomery, 1893 (Olive).
 On *Aster* (sp.), Montgomery (Brannon).
 On *Cnicus altissimus*, Montgomery, 10, 1890 (Fisher).
 On *Eupatorium perfoliatum*, Fulton, 10, 1893; Johnson, 10, 1890 (Fisher);
 Montgomery, 1893 (Olive).
 On *Eupatorium purpureum*, Johnson, 8, 1890 (Fisher).
 On *Helianthus annuus*, Putnam, 11, 1892.
 On *Helianthus decapetalus*, Montgomery, 10, 1890 (Fisher).
 On *Helianthus parviflorus*, Tippecanoe, 10, 1892 (Arthur).
 On *Helianthus tuberosus*, Montgomery, 10, 1890 (Fisher).
 On *Hydrophyllum appendiculatum*, Montgomery, 10, 1890 (Fisher);
 1893 (Olive).
 On *Hydrophyllum Virginicum*, Montgomery, 10, 1893; 1893 (Olive).

- On *Hydrophyllum macrophyllum*, Putnam, 7, 1893; Montgomery, 1893 (Olive).
- On *Parietaria Canadensis*, Montgomery, 7, 1890 (Fisher).
- On *Phlox paniculata*, Montgomery 10, 1890 (Fisher).
- On *Solidago Canadensis*, Montgomery, 10, 1890 (Fisher); 1893 (Olive); Johnson, 9, 1890 (Fisher).
- On *Solidago serotina*, Johnson, 10, 1890 (Fisher).
- On *Solidago latifolia*, Montgomery, 1893 (Olive).
- On *Verbena hastata*, Marshall, 10, 1893.
- On *Verbena stricta*, Johnson, 7, 1890 (Fisher); Montgomery, 10, 1893 (Tippecanoe, 9, 1888 (Bolley).
- On *Verbena urtica-folia*, Johnson, 11, 1890 (Fisher); Putnam, 10, 1891 (Montgomery, 1893 (Olive).
- On *Vernonia fasciculata*, Putnam, 10, 1891; Montgomery 10, 1893.
- On *Vernonia noveboracensis*, Johnson, 8, 1890 (Fisher).
- On *Xanthium strumarium*, Johnson, 10, 1890 (Fisher); Putnam, 9, 1891; Montgomery 1893 (Olive).
- On *Zinnia elegans*, Putnam, 10, 1891.
- On *Pilea pumila*, Montgomery, 1893 (Olive).
- ERYSIPHE COMMUNIS* (Wallr.) Fr.
- On *Amphicarpaea monoica*, Johnson, 9, 1890 (Fisher); Putnam, 9, 1893; Vigo, 10, 1893.
- On *Apios tuberosa*? Johnson, 9, 1890 (Fisher).
- On *Aquilegia Canadensis*, Owen, 10, 1893.
- On *Clematis Virginiana*, Putnam, 10, 1891; Johnson, 9, 1890 (Fisher); Montgomery, 9, 1889 (Brannon).
- On *Geranium maculatum*, Johnson, 8, 1890 (Fisher).
- On *Heuchera Americana*, Putnam, 10, 1891.
- On *Ranunculus abortivus*, Johnson, 7, 1890 (Fisher); Putnam, 7, 1893 (10, 1891; Montgomery, 1893 (Olive).
- On *Lathyrus palustris*, Marshall, 10, 1893.
- On *Thalictrum polygamum*, Johnson 10, 1890 (Fisher).
- On *Ranunculus recurvatus*, Montgomery, 1893 (Olive).
- ERYSIPHE GALEOPSISIS*, D C.
- On *Chelone glabra*, Johnson, 10, 1890 (Fisher).
- On *Scutellaria lateriflora*, Johnson, 10, 1890 (Fisher); Marshall, 10, 1893 (Putnam, 10, 1891; Montgomery, 1893 (Olive).
- On *Scutellaria pilosa*, Johnson, 10, 1890 (Fisher).

On *Stachys aspera*, Johnson, 10, 1890 (Fisher); Fulton, 10, 1893.

ERYSIPHE GRAMINIS D C.

On *Poa pratensis*, Johnson, 11, 1890 (Fisher); Montgomery, 1893 (Olive).

On lawn grass, Putnam, 9, 1891; 11, 1891.

ERYSIPHE LIRIODENDRI Schw.

On *Liriodendron tulipifera*, Putnam, 10, 1891; 10, 1893; Montgomery, 10, 1893; Wabash, 10, 1891 (Miller).

MICROSPILERA ALNI (D C.) Wint.

On *Betula pumila*, Fulton, 10, 1893 (Fisher).

On *Carpinus Caroliniana*, Johnson, 9, 1890 (Fisher); Montgomery (Bran- non).

On *Fagus ferruginea*, Johnson, 9, 1890 (Fisher).

On *Ilex verticillata*, Marshall, 10, 1893.

On *Hicoria sulcata*, Johnson, 9, 1890 (Fisher); Marshall, 10, 1893.

On *Euonymus atropurpureus*, Johnson, 10, 1890 (Fisher).

On *Juglans nigra*, Johnson, 9, 1890 (Fisher); Putnam, 10, 1893.

On *Platanus occidentalis*, Johnson, 9, 1890 (Fisher); Putnam, 10, 1891; Montgomery, 1893 (Olive).

On *Syringa vulgaris*, Johnson, 10, 1890 (Fisher); Putnam, 7, 1893; Tip- pecanoe, 10, 1893 (Arthur); Montgomery, 1893 (Olive).

On *Ostrya Virginiana*, Johnson, 10, 1890 (Fisher).

On *Tecoma radicans*, Putnam, 10, 1893.

On *Viburnum acerifolium*, Putnam, 10, 1891.

On *Viburnum dentatum*, Johnson, 10, 1891 (Fisher).

On *Viburnum prunifolium*, Johnson, 9, 1890 (Fisher).

On *Viburnum pubescens*, Putnam, 10, 1891.

MICROSPILERA DIFFUSA C. and P.

On *Lespedeza* sp., Marshall, 10, 1893.

MICROSPILERA ELEVATA Burrill.

On *Catalpa*, Putnam, 10, 1891; 10, 1893; Owen, 10, 1893; Tippecanoe, 9, 1890 (Bolley).

MICROSPILERA ERINEOPHILA Pk.

On *Erineum* of *Fagus ferruginea*, Marion, 8, 1890 (Tracy); Putnam, 10, 1891; 10, 1893.

MICROSPILERA EUPHORBIE (Pk.) B. and C.

On *Euphorbia corollata*, Steuben, 1892 (Martin Canse); Tippecanoe, 9, 1888 (Bolley).

MICROSPILERA GROSSULARIE (Wallr.) Lev.

On *Sambucus Canadensis*. Johnson, 9, 1890 (Fisher); Montgomery, 10, 1893.

MICROSPILERA QUERCINA (Schw.) Burrill.

On *Quercus alba*, Putnam, 16, 1891.

On *Quercus bicolor*, Johnson, 9, 1890 (Fisher); Vigo, 10, 1893.

On *Quercus lyrata*, Johnson, 9, 1890 (Fisher).

On *Quercus macrocarpa*, Johnson, 9, 1890 (Fisher).

On *Quercus Muhlenbergii*, Johnson, 9, 1890 (Fisher); Putnam, 10, 1893.

On *Quercus rubra*, Johnson, 9, 1890 (Fisher); Marshall, 10, 1893; Putnam, 10, 1893; Vigo, 10, 1893.

On *Quercus* sp., Montgomery (Brannon).

MICROSPILERA RAVENELII Berk.

On *Gleditschia triacanthos*, Johnson, 8, 1890 (Fisher); Vigo, 10, 1893; Montgomery (Brannon); Putnam, 10, 1893; Owen, 10, 1893.

MICROSPILERA RUSSELLII Clinton.

On *Oxalis stricta*, Johnson, 7, 1890 (Fisher); Putnam, 10, 1891; Montgomery, 10, 1893; 1893 (Olive).

MICROSPILERA SEMITOSTA B. and C.

On *Cephalanthus occidentalis*, Johnson, 9, 1890 (Fisher); Vigo, 10, 1893.

MICROSPILERA SYMPHORICARPI Howe.

On *Symphoricarpus vulgaris*, Putnam, 10, 1891; 11, 1892; 10, 1893.

MICROSPILERA VACCINII (Schw.) C. and P.

On *Vaccinium* sp., Marshall, 10, 1893.

PHYLLACTINIA SUFFULTA (Reb.) Sacc.

On *Carpinus Caroliniana*, Putnam, 10, 1891; Montgomery, 10, 1890 (Fisher).

On *Celastrus scandens*, Montgomery, 10, 1890 (Fisher).

On *Cornus florida*, Putnam, 10, 1891; 10, 1892.

On *Corylus Americana*, Montgomery, 10, 1890 (Fisher); Marshall, 10, 1893.

On *Fraxinus Americana*, Johnson, 9, 1890 (Fisher); Montgomery, 10, 1893; 1893 (Olive); Putnam, 10, 1893.

On *Fraxinus pubescens*, Johnson, 9, 1890 (Fisher).

On *Fraxinus quadrangulata*, Johnson, 10, 1890 (Fisher).

On *Fraxinus sambucifolia*, Johnson, 10, 1890 (Fisher).

On *Liriodendron tulipifera*, Johnson, 9, 1890 (Fisher); Montgomery, 1893 (Olive).

On *Ostrya Virginica*, Montgomery, 10, 1890 (Fisher); Putnam, 10, 1891; 10, 1893.

On *Quercus coccinea*, Johnson, 9, 1890 (Fisher); Montgomery, 10, 1890 (Fisher).

On *Quercus palustris*, Shelby, 11, 1890 (Fisher); Vigo, 10, 1893.

On *Quercus rubra*, Vigo, 10, 1893.

On *Catalpa bignoniodes*, Montgomery, 1893 (Olive).

On *Xanthoxylum Americana*, Montgomery, 1893 (Olive).

PODOSPHERA BIUNCINATA C. & P.

On *Hamamelis Virginiana*, Putnam, 9, 1893; 10, 1893.

PODOSPHERA OXYACANTHE (D C.) DeBary.

On *Cratægus crus-galli*, Johnson, 7, 1890 (Fisher).

On *Cratægus spathulata*, Johnson, 7, 1890 (Fisher).

On *Cratægus tomentosa*, Johnson, 7, 1890 (Fisher).

On *Cydonia vulgaris*, Johnson, 8, 1890 (Fisher).

On *Prunus Americana*, Johnson, 10, 1890 (Fisher).

On *Prunus cerasus*, Johnson, 7, 1890 (Fisher); Putnam, 10, 1891; 7, 1893; Tippecanoe, 8, 1890 (Bolley).

On *Spiræa tomentosa*, Marshall, 10, 1893.

On *Cratægus* sp., Owen, 10, 1893.

SPHEROTHECA CASTAGNEI Lev.

On *Bidens chrysanthemoides*, Johnson, 9, 1890 (Fisher); Montgomery, 1893 (Olive).

On *Bidens connata*, Johnson, 8, 1890 (Fisher); Montgomery, 10, 1893.

On *Bidens frondosa*, Johnson, 7, 1890 (Fisher); Putnam, 10, 1891; 7, 1893; Montgomery, 10, 1893.

On *Brunella vulgaris*, Johnson, 9, 1890 (Fisher); Marshall, 10, 1893.

On *Coreopsis trichosperma*, Johnson, 9, 1890 (Fisher).

On *Erechtites hieracifolia*, Johnson, 8, 1890 (Fisher); Marshall, 10, 1893; Montgomery, 1893 (Olive).

On *Erigeron Canadense*, Johnson, 10, 1890 (Fisher).

On *Erigeron* (Sp.), Montgomery (Brannon).

On *Pedicularis lanceolata*, Johnson, 8, 1890; 11, 1890 (Fisher).

On *Taraxacum officinale*, Montgomery (Brannon, Olive); Putnam, 10, 1891; Tippecanoe, 6, 1890 (Bolley).

SPHEROTHECA HUMULI (D C.) Burrill.

On *Agrimonia Eupatoria*, Montgomery, 10, 1890 (Fisher); Putnam, 11, 1891; 10, 1893; Marshall, 10, 1893.

On *Potentilla palustris*, Marshall, 10, 1893.

SPHEROTHECA MORS-CVÆ (Schw.) B. & C.

On *Ribes cynosbati*, Montgomery, 6, 1893 (Hughart).

SPILEROOTHECA PANNOSA (Wallr.)

On *Genm album*, Johnson, 8, 1890 (Fisher).

On *Rosa lucida*, Johnson, 8, 1890 (Fisher).

On *Rosa* (sp. cult.) Putnam, 9, 1893.

SPILEROOTHECA PHYTOPTOPHILA Kell. & Swingle.

On *Phytoptus fascicles* of *Celtis occidentalis*, Putnam, 5, 1890 (Arthur); 10, 1891; 11, 1893; Montgomery, 1893 (Olive); Tippecanoe, 12, 1893 (Arthur).

UNCINULA CIRCINATA C. & P.

On *Acer dasycarpum*, Montgomery (Brannon); Marshall, 10, 1893.

On *Acer rubrum*, Johnson, 1890 (Fisher).

On *Acer saccharum*, Johnson, 9, 1890 (Fisher); Putnam, 10, 1893; Montgomery, 1893 (Olive).

UNCINULA CLINTONII Pk.

On *Tilia Americana*, Montgomery, 10, 1890 (Fisher); Putnam, 10, 1893.

UNCINULA FLEXUOSA Pk.

On *Esculus glabra*, Johnson, 7, 1890 (Fisher); Montgomery (Brannon, Olive).

On *Esculus Hippocastanum*, Putnam, 10, 1893.

UNCINULA GENICULTA Gerard.

On *Morus rubra*, Johnson, 9, 1890 (Fisher); Montgomery, 10, 1890 (Fisher); 10, 1893.

UNCINULA MACROSPORA Pk.

On *Ulmus Americana*, Putnam, 10, 1891; 10, 1892; Owen, 10, 1893; Montgomery, 1893 (Olive); Wabash, 10, 1891 (Miller).

On *Ulmus fulva*, Johnson, 8, 1890 (Fisher); Montgomery, 1893 (Olive).

UNCINULA NECATOR (Schw.) Burrill.

On *Ampelopsis quinquefolia*, Johnson, 9, 1890 (Fisher); Montgomery (Brannon, Olive); Putnam, 10, 1891.

On *Vitis cordifolia*, Johnson, 9, 1890 (Fisher).

On *Vitis* (cult. sp.) Johnson, 9, 1890 (Fisher); Montgomery (Brannon, Olive); Putnam, 10, 1891; 10, 1893.

UNCINULA PARVULA C. & P.

On *Celtis occidentalis*, Johnson, 9, 1890 (Fisher); Marion, 1890 (Tracy); Putnam, 10, 1893.

UNCINULA SALICIS (D C.) Wint.

On *Salix nigra*, Johnson, 8, 1890 (Fisher).

On *Salix sericea*, Montgomery, 10, 1890 (Fisher).

On *Salix cordata*, Montgomery, 1893 (Olive).

On *Salix* sp. Montgomery (Brannon); Putnam, 9, 1891; Marshall, 10, 1893.

On *Populus tremuloides*, Marshall, 10, 1893.

HYPOCREACEÆ.

CLAVICEPS PURPUREA (Fr.) Tul.

Sclerotia on Rye, Putnam, 7, 1893; Tippecanoe (Arthur).

Sclerotia on *Elymus Virginicus*, Montgomery, 10, 1893.

CORDYCEPS OPHIOGLOSOIDES (Ehrh.) Sacc., Putnam, 11, 1891.

EPICHLÖE TYPHINA (Pers.) Tul.

On *Festuca nutans*, Tippecanoe, 7, 1890 (Arthur).

On grass (sp. ig.), Vigo, 5, 1893; Putnam, 6, 1894.

HYPOCREA CITRINA (Pers.) Fr., Putnam, 11, 1891; 10, 1893.

HYPOCREA GELATINOSA (Tode.) Fr., Putnam, 10, 1891.

HYPOCREA RUFA (Pers.) Fr. (*Trichoderma viride*.)

Conidial stage, Putnam, 11, 1893.

SPHERIACEÆ.

DALDINIA CONCENTRICA (Bolt.) Ces. and DeNot.

On *Acer* sp., Putnam, 10, 1891.

DIATRYPE ALBOPRUIOSA (Schw.) Cooke. Vigo, 10, 1893.

DIATRYPE VIRESCENS (Schw.) E. and E. Putnam, 9, 1893.

DICHENA FAGINEA (Pers.) Fr.

On *Fagus ferruginea*, Tippecanoe, 4, 1892 (Arthur); Putnam, 4, 1893.

EUTYPA SPINOSA (Pers.) Tul. Putnam, 11, 1892; 10, 1893.

GNOMONIA ULMEA (Schw.) Thüm.

On *Ulmus fulva*, Montgomery, 10, 1890 (Fisher); Johnson, 9, 1890 (Fisher). [Herb. U. S.]

HYPOXYLON ANNULATUM (Schw.) Mont. Putnam, 4, 1893.

HYPOXYLON ATROPUNCTATUM (Schw.) Cooke. Putnam, 4, 1893.

HYPOXYLON COCCINEUM Bull. Putnam, 12, 1891; 10, 1891.

HYPOXYLON COHERENS (Pers.) Fr.

On *Fagus ferruginea*, Putnam, 10, 1891.

HYPOXYLON MARGINATUM (Schw.) Berk., Putnam, 5, 1893.

HYPOXYLON PERFORATUM (Schw.) Sacc., Putnam, 10, 1891; 2, 1893.

HYPOXYLON RUBIGINOSUM (Pers.) Fr., Putnam, 10, 1891; 5, 1893.

LESTADIA BIDWELLII (Ell.) Viala et Rav.

On *Vitis cordifolia*, Johnson, 8, 1890 (Fisher); Putnam, 10, 1891.

On *Vitis* (cult.), Putnam, 7, 1893.

On *Ampelopsis quinquefolia*, Owen, 10, 1893.

MELANOMMA SPORADICUM E. & E., Putnam, 4, 1893.

NUMMULARIA BULLIARDI Tul., Putnam, 10, 1891.

OTTHIA MORBOSA (Schw.) E. & E.

On *Prunus* sp., Floyd, 6, 1890 (Arthur); Putnam, 4, 1894.

ROSELLINIA AQUILA (Fr.) DeNot, Putnam, 10, 1891.

SCORIAS SPONGIOSA (Schw.) Fr.

On honey-dew dropped by Aphidæ on and under beech twigs, Putnam, 10, 1891; 4, 1893; Owen, 5, 1893.

SPHERELLA FRAGARIE Tul. (*Ramularia fragariae*).

Conidia on *Fragaria vesca*, Putnam, 5, 1892.

Conidia on *Fragaria elatior*, Johnson, 8, 1890 (Fisher).

SPHERELLA FRAXINICOLA (Schw.) Cooke.

On *Fraxinus Americana*, Johnson, 9, 1890 (Fisher). [Herb. U. S.]

SPHERIA IRIDIS Schw.

On *Iris versicolor*, Montgomery, 1893 (Olive). [Herb. Wabash Coll.]

TRYBLIDIUM MINOR Cooke.

On *Salix* sp., Putnam, 5, 1892.

USTULINA VULGARIS Tul.

On *Quercus* sp., Montgomery, 4, 1892; Putnam, 10, 1891; 5, 1893.

VALSARIA ENASPERANS (Gier.) E. and E. Putnam, 12, 1891.

VALSARIA QUADRATA (Schw.) Sacc. (*Diatrype obesa* B. and C.)

On *Fagus ferruginea*, Putnam, 10, 1891.

XYLARIA POLYMORPHIA (Pers.) Grev. Putnam, 11, 1891; Tippecanoe, 1892 (Arthur).

XYLARIA CORNIFORMIS Fr. Putnam, 10, 1891; 10, 1892; 10, 1893.

XYLARIA HYPOXYLON (L.) Grev. Putnam, 11, 1893.

DOTHIDEACEÆ.

PHYLLOCHORA LESPEDEZE (Schw.) Cooke.

On *Lespedeza* sp., Marshall, 10, 1893.

DOTHIDIELLA ULMI (Duv.) Wint.

On *Ulmus Americana*, Montgomery, 1893 (Olive). [Herb. Wabash Coll.]

PHYLLACHORA GRAMINIS (Pers.) Fckl.

On *Panicum latifolium*, Tippecanoe, 9, 1888 (Bolley); Putnam, 10, 1892.

On *Muhlenbergia* sp., Putnam, 10, 1892.

On *Asprella hystrix*, Montgomery, 10, 1893.

On *Muhlenbergia Mexicana*, Johnson, 11, 1890 (Fisher).

On *Elymus Canadensis*, Montgomery, 11, 1890 (Fisher).

On *Elymus* sp., Putnam, 10, 1892.

PHYLLACHORA TRIFOLII (Pers.) Fekl.

On *Trifolium pratense*, Johnson, 11, 1890 (Fisher). [Herb. U. S.]

FUNGI IMPERFECTI.

SPHÆROPSIDEE.

ACTINONEMA ROSE Fr. (*Asteroma rose* Lib.).

On *Rosa* sp. in greenhouse, Tippecanoe, 1, 1887 (Barnes); 10, 1892 (Arthur).

CINCINNABOLUS CESATHI DeBary.

On Mycelium of *Erysiphei* on *Helianthus* sp., Tippecanoe, 1888 (Bolley).

On Mycelium of *Erysiphei* on *Taraxacum officinale* and *Solidago Canadensis*, Johnson, 7, 1890 (Fisher).

On Mycelium of *Erysiphei* on *Solidago arguta*, *S. latifolia*, *Aster Shortii*, *Rudbeckia triloba*, *Hydrophyllum Virginicum*, Montgomery, 10, 1890 (Fisher).

On *Sphærotheca Castagnei* on *Taraxacum*, Montgomery, 1893 (Olive).

On *Phyllactinia suffulta* on *Liriodendron*, Montgomery, 1893 (Olive).

On *Erysiphe* sp. on *Erigeron*, Montgomery, 1893 (Olive).

DARLŪCA FILUM (Riv.) Cast.

On *Uredo* on *Carex* sp., Johnson, 7, 1890 (Fisher). [Herb. U. S.]

LEPTOSTROMA HYPOPHYLLUM B. & Rav.

On *Gleditschia triacanthos*, Marion, 8, 1890 (Arthur); Tippecanoe, 9, 1892 (Arthur); Putnam, 9, 1893.

MELASMA ? GALII E. & E.

On *Galium trifidum latifolium*, Johnson, 9, 1890 (Fisher). [Herb. U. S.]

PILEOSPORA ACERIS (Lib.) Sacc.

On *Acer rubrum*, Johnson, 7, 1890 (Fisher). [Herb. U. S.]

PHLEŌSPORA ULMI (Fr.) Wallr.

On *Ulmus fulva*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

PHYLLOSTICTA ASIMINE E. & K.

On *Asimina triloba*, Johnson, 8, 1890 (Fisher); Putnam, 7, 1893.

PHYLLOSTICTA CELTIDIS E. & K.

On *Celtis occidentalis*, Montgomery, 10, 1890 (Fisher). [Herb. U. S.]

PHYLLOSTICTA COMMONSHI E. & E.

On *Pæonia* (cult.), Montgomery, 1893 (Olive). [Herb. Wabash Coll.]

PHYLLOSTICTA CRUENTA Kickx.

On *Smilacina racemosa*, Montgomery, 1893 (Olive).

PHYLLOSTICTA PAVLE Desm. (*P. sphæropsoidea* E. & E.)

On *Aesculus glabra*, Montgomery, 7, 1890 (Fisher); 1893 (Olive); Johnson, 8, 1890 (Fisher); Brown, 5, 1893.

PHYLLOSTICTA QUERCUS Sacc & Speg.

On *Quercus macrocarpa* Montgomery, 1893 (Olive). [Herb. Wabash Coll.]

PHYLLOSTICTA SANGUINARIE Wint.

On *Sanguinaria Canadensis*, Brown, 5, 1893, immature.

PHYLLOSTICTA SASSAFRAS Cooke.

On *Sassafras*, Montgomery, 7, 1890 (Fisher). [Herb. U. S.]

SEPTORIA ASCLEPIADICOLA E. & E.

On *Asclepias incarnata*, Johnson, 10, 1890 (Fisher). [Herb. U. S.]

SEPTORIA CACALIE E. & K.

On *Cacalia atriplicifolia*, Owen, 10, 1893; Montgomery, 1893 (Olive).

SEPTORIA CANNABINA West. ?

On *Cannabis sativa*, Montgomery, 7, 1890 (Fisher). [Herb. U. S.]

SEPTORIA CONSPICUA E. & M.

On *Steironema ciliatum*, Johnson, 7, 1890; 10, 1890 (Fisher). [Herb. U. S.]

SEPTORIA CRATEGI Kickx.

On *Cratogeomys* sp., Owen, 10, 1893.

SEPTORIA DENTARIE Pk.

On *Dentaria laciniata*, Montgomery, 1893 (Olive).

SEPTORIA FLAGELLARIS E. and E.

On *Convolvulus sepium*, Monroe, 5, 1893.

SEPTORIA HELIANTHI E. and K.

On *Heliopsis lewis*, Montgomery, 7, 1890 (Fisher).

On *Helianthus annuus*, Montgomery, 1893 (Olive).

SEPTORIA LACTUCE Pass.

On *Lactuca sativa*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

SEPTORIA LAPPARUM Sacc.

On *Arctium lappa*, Montgomery, 1893 (Olive).

SEPTORIA LEUCOSTOMA E. and E.

On *Fraxinus Americana*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

SEPTORIA MICROSPORA E. and E.

On *Asprella hystrix*, Montgomery, 7, 1890 (Fisher). [Herb. U. S.]

SEPTORIA GENOTHERAE B. and C.

On *Enothera biennis*, Vigo, 5, 1893.

SEPTORIA PODOPHYLLINA Pk.

On *Podophyllum peltatum*, Monroe, 5, 1893; Putnam, 5, 1893 (*Melia Ellis*); Montgomery, 1893 (*Olive*).

SEPTORIA POLYGONORUM Desm.

On *Polygonum* sp., Putnam, 9, 1893; 10, 1893.

SEPTORIA PSILOSTEGA E. & M.

On *Galium circæzans*, Johnson, 7, 1890 (*Fisher*). [*Herb. U. S.*]

SEPTORIA RUBI Westd.

On *Rubus* (*blackberry*), Vigo, 5, 1893.

On *Rubus villosus*, Montgomery, 1893 (*Olive*).

SEPTORIA SISYMBRII Ell.

On *Dentaria laciniata*, Vigo, 5, 1893.

SEPTORIA TRILLII Pk.

On *Trillium grandiflorum*, Montgomery, 1893 (*Olive*).

On *Trillium sessile*, Montgomery, 1893 (*Olive*).

On *Trillium recurvatum*, Montgomery, 1893 (*Olive*).

SEPTORIA VIOLE Westd.

On *Viola palmata cucullata*, 1893 (*Olive*).

SEPTORIA sp.

On *Cicuta maculata*, Johnson, 11, 1890 (*Fisher*). ["Not S. Sii." *Herb. U. S.*]

SPHLEROGRAPHIUM FRAXINI Pk. Putnam, 4, 1892.

STAGNOSPORA COLLAPSA (C. & E.) Sacc.

On *Acer dasycarpum*, Putnam, 3, 1893.

VERMICULARIA HERBARUM Westd. (*V. dianthi* Westd.)

On carnations in greenhouse, Tippecanoe, 3, 1889 (*Arthur*).

HYPHOMYCETES.

CERATOPHORUM UNCINATUM (Cl. and Pk.) Sacc.

On *Quercus macrocarpa*, Johnson, 9, 1890 (*Fisher*). [*Herb. U. S.*]

CERCOSPORA AMPELOPSIDIS Pk.

On *Ampelopsis quinquefolia*, Johnson, 7, 1890 (*Fisher*). [*Herb. U. S.*]

CERCOSPORA APII Fres.

On *Pastinaca sativa*, Putnam, 9, 1893.

CERCOSPORA CERCIDICOLA Ell.

On *Cercis Canadensis*, Johnson, 8, 1890 (*Fisher*). [*Herb. U. S.*]

CERCOSPORA CHIONEAE E. and E.

On *Cercis Canadensis*, Montgomery, 1893 (*Olive*).

CERCOSPORA DIANTHERA E. and K.

On *Dianthera Americana*, Montgomery, 1893 (*Olive*).

CERCOSPORA DUBIA (Russ.) Wint.

On *Chenopodium album*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

CERCOSPORA ECHINOCYSTIS E. and M.

On *Echinocystis lobata*, Montgomery, 1893 (Olive).

CERCOSPORA EFFUSA (B. and C.) E. and E.

On *Lobelia syphilitica*, Putnam, 10, 1892; 9, 1893.

CERCOSPORA ELONGATA Pk.

On *Dipsacus sylvestris*, Montgomery, 1893 (Olive).

CERCOSPORA EUPATORII Pk.

On *Eupatorium perfoliatum*, Montgomery, 1893 (Olive).

CERCOSPORA FLAGELLARIS E. & M.

On *Phytolacca decandra*, Montgomery, 1893 (Olive).

CERCOSPORA GRANULIFORMIS Ell. & Hol.

On *Viola palmata cucullata*, Montgomery 7, 1890; 10, 1890 (Fisher).

[Herb. U. S.]

CERCOSPORA HYDROPIPERIS (Thüm.) Speg.

On *Polygonum hydropiper*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

CERCOSPORA LIPPLE E. & E.

On *Lippia lanceolata*, Montgomery, 1893 (Olive).

CERCOSPORA OCLATA E. & K.

On *Vernonia noveboracensis*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

CERCOSPORA PENSTEMONIS E. & K.

On *Penstemon levigatus digitalis*, Montgomery, 1893 (Olive).

CERCOSPORA PRENANTHIS, E. & K.

On *Prenanthes alba*, Montgomery, 1893 (Olive).

CERCOSPORA PTELEAE Wint.

On *Ptelea trifoliata*, Johnson, 11, 1890 (Fisher); Montgomery, 1893 (Olive).

[Herb. U. S. and Wabash Coll.]

CERCOSPORA RHUINA C. & E.

On *Rhus glabra*, Montgomery, 7, 1890 (Fisher). [Herb. U. S.]

CERCOSPORA ROSICOLA Pass.

On *Rosa setigera*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

CERCOSPORA SAURURI C. & E.

On *Saururus*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

CERCOSPORA SEDOIDES E. & E.

On *Penthorum sedoides*, Johnson, 8, 1890; 10, 1890 (Fisher). [Herb. U. S.]

CERCOSPORA SIMULATA E. & E.

- On *Cassia Marilandica*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]
- CERCOSPORA XANTHOXYLI Cke.
- On *Xanthoxylum Americanum*, Montgomery, 1893 (Olive).
- CERCOSPORELLA CANA Sacc.
- On *Erigeron annuus*, Johnson, 7, 1890; 10, 1890 (Fisher). [Herb. U. S.]
- CERCOSPORELLA CLAVATA (Ger.) Pk.
- On *Asclepias incarnata*, Johnson, 8, 1890 (Fisher). [Herb. U. S.]
- CERCOSPORELLA RACEMOSA E. & M.
- On *Teucrium Canadense*, Johnson, 7, 1890 (Fisher). [Herb. U. S.]
- CERCOSPORELLA TEUCRII E. & K.
- On *Teucrium Canadense*, Johnson, 11, 1890 (Fisher). [Herb. U. S.]
- DIDYMARIA UNGERI Cda.
- On *Ranunculus septentrionalis*, Johnson, 10, 1890 (Fisher). [Herb. U. S.]
- FUSARIUM MINIATUM (B. & C.) Sacc.
- On trunk of *Ostrya* injured by woodpeckers, Putnam, 5, 1892.
- On old wood, Putnam, 5, 1893.
- FUSARIUM RIMOSUM (Pk.) Sacc.
- On cut ends of corn stalks. Putnam, 10, 1893.
- FUSICLADIUM DENDRITICUM (Wallr.) Fckl.
- On *Pirus malus*, Johnson, 7, 1890 (Fisher). [Herb. U. S.]
- HETEROSPORIUM GRACILE (Wallr.) Sacc.
- On *Iris versicolor*, Montgomery, 1893 (Olive). [Herb. Wabash Coll.]
- MONILIA AUREO-FULVA (Link) Gmel.
- On decaying wood, Putnam, 10, 1893.
- OIDIUM LACTIS Fres.
- On surface of milk, Tippecanoe, 3, 1891 (Arthur). [Herb. Arthur.]
- OOSPORA SCABIES Thax.
- On potatoes producing deep scab, Tippecanoe, 2, 1892 (Arthur).
- On sugar beet producing scab, Tippecanoe, 3, 1891 (Arthur).
- POLYTHRINCUM TRIFOLII Kze.
- On *Trifolium repens*, Putnam, 6, 1893; Johnson, 11, 1890 (Fisher).
- RAMULARIA ARMORACEE Fckl.
- On *Nasturtium armoracia*, Montgomery, 1893 (Olive).
- RAMULARIA PLANTAGINIS E. & M.
- On *Plantago major*, Johnson, 8, 1890; 10, 1890 (Fisher). [Herb. U. S.]
- RAMULARIA RUFO-MACULATA Pk.
- On *Polygonum acre*, Johnson, 1890 (Fisher). [Herb. U. S.]
- RHINOTRICHUM CURTISII Berk., Putnam, 10, 1891.

SCOLECOTRICHUM GRAMINIS Fckl.

On Phleum pratense, Johnson, 11, 1890 (Fisher).

On Poa nemoralis, Johnson, 11, 1890 (Fisher).

On Poa pratensis, Johnson, 11, 1890 (Fisher). [Herb. U. S.]

STREPTOTHRIX ATRA B. & C., Tippecanoe, 10, 1888 (Bolley); Putnam, 11, 1891.

MELANCONIEÆ.

CYLINDROSPORIUM IRIDIS Ell. and Hals.

On Iris versicolor, Montgomery, 1893 (Olive).

GLEOSPORIUM APOCYNII Pk.

On Apocynum cannabinum, Johnson, 8, 1890 (Fisher). [Herb. U. S.]

GLEOSPORIUM LINDEMUTHIANUM Sacc. and Magn.

On cultivated beans, Tippecanoe, 5, 1890 (Arthur); Putnam, 9, 1893.

GLEOSPORIUM SEPTORIOIDES Sacc.

On Quercus sp., Montgomery, 7, 1890 (Fisher). [Herb. U. S.]

MARSONIA MARTINI Sacc. and Ell.

On Quercus alba, Montgomery, 10, 1890 (Fisher).

On Quercus rubra, Montgomery, 10, 1890 (Fisher).

On Quercus Muhlenbergii, Montgomery, 10, 1890 (Fisher).

On Quercus bicolor, Montgomery, 10, 1890 (Fisher). [Herb. U. S.]

MYXOSPORIUM NITIDUM B. and C.

On Cornus, Tippecanoe, 4, 1892 (Arthur).

BASIDIOMYCETES.

USTILAGINEÆ.

ENTYLOMA COMPOSITARUM Farl.

On Ambrosia artemisiifolia, Tippecanoe, 7, 1889 (Arthur).

ENTYLOMA PHYSALIDIS (K. and C.) Wint.

On Physalis pubescens, Johnson, 11, 1890 (Fisher); Putnam, 9, 1893.

On Physalis Philadelphica, Johnson, 11, 1890 (Fisher).

TILLETIA STRIFORMIS (Westend.) Wint.

On Phleum pratense, Putnam, 5, 1892; 5, 1893; Tippecanoe, 5, 1889 (Bolley).

UROCYSTIS ANEMONES (Pers.) Wint.

On Hepatica acutiloba, Tippecanoe, 5, 1893 (Arthur).

USTILAGO ANOMALA J. Kunze.

On Polygonum dumetorum scandens, Putnam, 9, 1893.

USTILAGO AVENÆ (Pers.) Jensen.

On Avena sativa, Montgomery, 1893 (Olive); Tippecanoe, 1891 (Arthur).

USTILAGO HORDEI.

On Barley, Dearborn 6, 1888 (Bolley). [Herb. Arthur.]

USTILAGO PANICI-GLAUCI [Wallr.] Wint. (*U. neglecta* Niessl.)

On *Setaria glauca*, Montgomery, 1893 (Olive).

USTILAGO RABENHORSTIANA Kuhn.

On *Panicum capillare*, Putnam 10, 1892.

USTILAGO SYNTHESIS (Schw.) Pk.

On *Cenchrus tribuloides*, Putnam, 10, 1892.

USTILAGO TRITICI (Pers.) Jensen.

On *Triticum vulgare*, Brown, 5, 1893; Putnam, 6, 1893; Montgomery, 1893 (Olive); Wabash, 6, 1888 (Miller); Tippecanoe, 1893 (Arthur).

USTILAGO UTRICULOSA (Nees) Wint.

On *Polygonum amphibium*, Wabash, 10, 1890 (Miller).

USTILAGO ZEÆ MAYS (D C.) Wint.

On *Zea mays*, Putnam, 9, 1892; 9, 1893; Johnson, 10, 1890 (Fisher.)

UREDINEÆ.

ÆCIDIUM AQUILEGIÆ Pers.

On *Aquilegia* sp., Tippecanoe, 6, 1889 (Bolley).

ÆCIDIUM ASTERUM Schw.

On *Aster cordifolius*, Montgomery, 1893 (Olive).

On *Aster sagittifolius*, Montgomery, 1893 (Olive).

On *Aster* sp., Vigo, 5, 1893; Tippecanoe, 5, 1893 (Arthur).

On *Solidago latifolia*, Putnam, 7, 1893.

On *Solidago Canadensis*, Laporte, 6, 1893 (Arthur).

On *Solidago caesia*, Montgomery, 1893 (Olive).

On *Solidago* sp., Vigo, 5, 1893.

ÆCIDIUM BERBERIDIS Pers.

On *Berberis vulgaris*, Lagrange, 7, 1889 (Arthur). [Herb. Arthur.]

ÆCIDIUM DICENTRÆ Trelease.

On *Dicentra cucullaria*, Montgomery, 1893 (Olive).

ÆCIDIUM EUPHORBIE Gmel.

On *Euphorbia corollata*, Johnson, 7, 1890 (Fisher).

On *Euphorbia dentata*, Putnam, 9, 1891.

On *Euphorbia Preslii*, Johnson, 7, 1890 (Fisher); Fulton, 10, 1893.

On *Euphorbia maculata*? Montgomery (Rose).

On *Euphorbia* sp., Putnam, 10, 1892; Tippecanoe 7, 1890 (Bolley).

ÆCIDIUM GERANII D C.

On *Geranium maculatum*, Vigo, 5, 1893.

ÆCIDIUM GROSSULARIÆ D. C.

On *Ribes rotundifolium*, Putnam, 5, 1893.

On *Ribes cynosbati*, Putnam, 5, 1892; Montgomery, 1893 (Olive).

ÆCIDIUM HEPATICATUM Schw.

On *Hepatica acutiloba*, Montgomery, 4, 1892; 5, 1893 (Thomas).

ÆCIDIUM HYDNOIDEUM B. & C.

On *Dirca palustris*, Johnson, 7, 1890 (Fisher); Montgomery, 1893 (Olive)
Wabash, 7, 1887 (Miller).

ÆCIDIUM IMPATIENSIS Schw.

On *Impatiens fulva*, Johnson, 7, 1890 (Fisher); Putnam, 7, 1893; Mont-
gomery (Rose).

ÆCIDIUM LYCOPIS Gerard.

On *Lycopus* sp., Vigo, 5, 1893.

ÆCIDIUM MARIE-WILSONI Peck.

On *Viola palmata cucullata*, Putnam, 5, 1893.

ÆCIDIUM OENOTHERÆ Pk.

On *Oenothera biennis*, Vigo, 5, 1893.

ÆCIDIUM ONOBRYCHIDIS Burrill.

On *Psoralea Onobrychis*, Vigo, 5, 1893.

ÆCIDIUM PTELEÆ B. & C.

On *Ptelea trifoliata*, Montgomery, 1893 (Olive).

ÆCIDIUM PUSTULATUM Curt.

On *Comandra umbellata*, Vigo, 5, 1893; Montgomery, 1893 (Olive).

ÆCIDIUM RANUNCULI Schw.

On *Ranunculus abortivus*, Decatur, 5, 1889 (Arthur); Putnam, 4, 1892;
5, 1893; Brown, 5, 1893.

ÆCIDIUM SAMBUCI Schw.

On *Sambucus Canadensis*, Johnson, 7, 1890 (Fisher); Putnam, 5, 1892;
5, 1893; Brown, 5, 1893; Vigo, 5, 1893; Montgomery, 1893 (Olive).

CEOMA AGRIMONIÆ Schw.

On *Agrimonia eupatoria*, Johnson, 7, 1890 (Fisher); Putnam, 9, 1891;
Owen, 10, 1893; Montgomery (Rose).

On *Agrimonia parviflora*, Putnam, 9, 1893; Marshall, 10, 1893.

COLEOSPORIUM RUBI Ell. and Hals.

On *Rubus cuneifolius*, Johnson, 9, 1890 (Fisher).

On *Rubus villosus*, Johnson, 9, 1890 (Fisher). [Herb. U. S.]

COLEOSPORIUM SONCHI-ARVENSIS (Pers.) Lev.

On *Aster cordifolius*, Montgomery, 10, 1890 (Fisher).

- On *Aster azureus*, Montgomery, 10, 1890 (Fisher); 1893 (Olive).
 On *Aster Nova-angliae*, Montgomery, Johnson, 8, 1890 (Fisher); Montgomery, 10, 1890 (Fisher).
 On *Aster paniculatus*, Montgomery, 10, 1890 (Fisher).
 On *Aster puniceus*, Johnson, 10, 1890 (Fisher).
 On *Aster sagittaeifolius*, Johnson, 8, 1890 (Fisher).
 On *Aster salicifolius*, Johnson, 11, 1890 (Fisher).
 On *Aster Shortii*, Montgomery, 10, 1890 (Fisher).
 On *Aster Tradescanti*, Johnson, 7, 1890 (Fisher).
 On *Solidago arguta*, Montgomery, 10, 1890 (Fisher).
 On *Solidago caesia*, Montgomery, 7, 1890 (Fisher); Johnson, 11, 1890 (Fisher).
 On *Solidago Canadensis*, Johnson, 7, 1890 (Fisher); Montgomery, 10, 1890 (Fisher); Wabash, 10, 1890 (Miller).
 On *Solidago latifolia*, Montgomery, 10, 1890 (Fisher); 1893 (Olive); Owen, 10, 1893.
 On *Solidago patula*, Montgomery, 10, 1890 (Fisher).
 On *Solidago rugosa*, Johnson, 11, 1890 (Fisher).
 On *Solidago serotina*, Johnson, 10, 1890 (Fisher); Owen, 10, 1893.
 On *Vernonia fasciculata*, Putnam, 10, 1891; Montgomery, 1893 (Olive).
 On *Vernonia Noveboracensis*, Johnson, 8, 1890 (Fisher).
 On *Hieracium* sp., Vigo, 5, 1893.

GYMNSPORANGIUM GLOBOSUM Farl.

- On *Juniperus Virginiana*, Putnam, 4, 1892; 5, 1893; Owen, 5, 1893.

GYMNSPORANGIUM MACROPUS Link.

- On *Juniperus Virginiana*, Putnam 3, 1892; 4, 1892; 5, 1893; Owen, 5, 1893; Montgomery, 1893 (Olive); Tippecanoe, 3, 1889 (Bolley).

MELAMPSORA POPULINA (Jacq.) Lev.

- On *Populus balsamifera*, Montgomery, 10, 1890 (Fisher).
 On *Populus grandidentata*, Montgomery, 10, 1890 (Fisher); Putnam, 10, 1893.
 On *Populus monilifera*, Johnson, 7, 1890 (Fisher); Putnam, 9, 1891; 10, 1893; Montgomery, 1893 (Olive); Tippecanoe, 9, 1888 (Bolley).
 On *Populus tremuloides*, Marshall, 10, 1893.

MELAMPSORA SALICINA Lev.

- On *Salix cordata*, Montgomery, 1893 (Olive.)
 On *Salix nigra*, Johnson, 10, 1890 (Fisher).
 On *Salix discolor*, Montgomery, 10, 1890 (Fisher).

On *Salix longifolia*, Johnson, 10, 1890 (Fisher); Montgomery, 1893 (Olive).

On *Salix* sp., Johnson 7, 1890 (Fisher); Putnam, 10, 1892; 10, 1893.

PHRAGMIDIUM FRAGARLE (D C.) Rossm.

On *Potentilla Canadensis*, Johnson, 9, 1890 (Fisher); Marshall, 10, 1893;
Owen 10, 1893; Vigo, 10, 1893; 5, 1893 (Uredo); Tippecanoe, 9, 1889
(Bolley).

PHRAGMIDIUM SUBCORTICIUM (Schränk) Wint.

On *Rosa lucida*, Johnson, 9, 1890 (Fisher).

On *Rosa setigera*, Johnson, 7, 1890 (Fisher).

On *Rosa Carolina*, Putnam, 9, 1893.

On *Rosa* (sp. cult.), Putnam, 10, 1891; 11, 1892; 9, 1893; Dearborn, 9, 1883
(Bolley).

On *Rosa* (sp.) Vigo 5, 1893; Brown, 5, 1893 (Uredo).

Puccinia ANDROPOGI Schw.

On *Andropogon* sp., Vigo, 10, 1893.

Puccinia ANGUSTATA Pk.

On *Scirpus atrovirens*, Johnson, 11, 1890 (Fisher); Putnam, 9, 1891; Tip-
pecanoe, 9, 1889 (Bolley).

On *Eriophorum cyperinum*, Putnam, 10, 1891; Fulton, 10, 1893.

Puccinia APOCRYPHA Ell & Tracy.

On *Asprella hystrix*, Johnson 11, 1890 (Fisher). [Herb. U. S.]

Puccinia ARGENTATA (Schultz.) Wint.

II., On *Impatiens flava*, Johnson, 9, 1890, (Fisher). [Herb. U. S.]

Puccinia ASTERIS Duby.

On *Aster cordifolius*, Montgomery, 10, 1890 (Fisher).

On *Aster paniculatus*, Montgomery, 10, 1890 (Fisher).

On *Aster* sp., W. Lafayette, 10, 1889 (Bolley).

Puccinia BOLLEYANA DeToni.

On *Carex* sp., Tippecanoe, 11, 1888 (Bolley).

Puccinia CARICIS (Schum.) Reb.

On *Carex bullata*, Johnson, 9, 1890 (Fisher).

On *Carex foenea*, Montgomery, 11, 1890 (Fisher).

On *Carex lurida*, Montgomery, 11, 1890 (Fisher).

On *Carex straminea*, Johnson, 11, 1890 (Fisher).

On *Carex virescens*, Montgomery, 11, 1890 (Fisher).

On *Carex* sp., Johnson 11, 1890 (Fisher); Putnam, 10, 1891; 10, 1893;

Fulton, 10, 1893; Montgomery, 1893 (Olive); Boone, 3, 1891 (Arthur).

On *Dulichium spathaceum*, Marshall, 10, 1893.

PUCCINIA CIRCEÆ Pers.

On *Circeæ Lutetiana*, Johnson, 7, 1890 (Fisher); Putnam, 10, 1893; Wabash 7, 1886 (Miller).

PUCCINIA CONVULVULI (Pers.) Cast.

On *Convolvulus sepium*, Putnam, 9, 1891; 9, 1893.

PUCCINIA CORONATA Corda.

On *Calamagrostis Canadensis*, Tippecanoe, 11, 1888 (Bolley).

PUCCINIA CYPERI Arthur.

On *Cyperus* sp., Putnam, 10, 1893.

PUCCINIA DAVI Clinton.

On *Steironema ciliatum*, Johnson, 8, 1890 (Fisher); Putnam, 10, 1893.

PUCCINIA DOCHMIA B. and C.

On *Muhlenbergia diffusa*, Johnson, 11, 1890 (Fisher). [Herb. U. S.]

PUCCINIA ELEOCHARIDIS Arthur.

On *Eleocharis palustris*, Tippecanoe, 11, 1888 (Bolley).

PUCCINIA EMACULATA Schw.

On *Panicum capillare*, Putnam, 10, 1892; 9, 1893; Montgomery, 1893 (Olive).

PUCCINIA FLOSCULOSÓRUM (A. and S.) Roehl.

On *Cnicus lanceolatus*, 7, 1890; * 9, 1890† (Fisher); Marion, 8, 1890; (Bolley); Marshall, 10, 1893; Putnam, 9, 1893.

On *Taraxacum officinale*, Johnson, 8, 1890‡ (Fisher); Putnam, 5, 1893; Montgomery, 1893 (Olive); Tippecanoe, 9, 1888 (Bolley).

PUCCINIA GALII (Pers.) Wint.

On *Galium asprellum*, Johnson, 11, 1890 (Fisher).

On *Galium concinnum*, Johnson, 7, 1890 (Fisher); Montgomery, 1893 (Olive).

On *Galium triflorum*, Putnam, 11, 1891; 10, 1893; Montgomery, 10, 1893.

PUCCINIA GRAMINIS Pers.

On *Agrostis* sp., Putnam, 10, 1893.

II. On *Avena sativa*, Putnam, 7, 1893; (III.) Montgomery, 1893 (Olive); Tippecanoe, 10, 1888 (Bolley).

On *Poa pratensis*, Montgomery, 11, 1890 (Fisher); Marshall, 10, 1893; Putnam, 10, 1893.

On *Poa compressa*, Montgomery, 11, 1890 (Fisher).

*In Coll. U. S. as *P. cirsii-lanceolati*.

†In Coll. U. S. as *P. suaveolens*.

‡In Coll. U. S. as *P. hieracii*.

On *Triticum vulgare*, Johnson, 7, 1890 (Fisher); Putnam, 9, 1893; Tippecanoe, 6, 1890 (Arthur).

Puccinia heliopsisidis Schw.

On *Heliopsis scabra*, Johnson, 9, 1890 (Fisher). [Herb. U. S.]

Puccinia indusiata Dietel & Holway *in ed.*

On *Cyperus strigosus*, Putnam, 9, 1893; 10, 1893.

On *Cyperus* sp., Tippecanoe, 9, 1888 (Bolley).

Puccinia interstitialis (Schl.) Tranzschel. (Uredo=*Caoma nitens* Schw.)

II. On *Rubus* (blackberry), Putnam, 5, 1892; 5, 1893; Vigo, 5, 1893.

II. On *Rubus villosus*, Montgomery, 1893 (Olive).

II. On *Rubus occidentalis*, Montgomery, 1893 (Olive); Marshall, 5, 1889 (Parks in Herb. Arthur).

Puccinia kuhnie Schw.

On *Kuhnia eupatorioides*, Tippecanoe, 9, 1888 (Bolley).

Puccinia lateripes B. & Rav.

On *Ruellia strepens*, Johnson, 7, 1890 (Fisher); Owen, 10, 1893; Wabash, 7, 1887 (Miller).

Puccinia lobellie Gerard.

On *Lobelia syphilitica*, Johnson, 7, 1890 (Fisher); Putnam, 10, 1892; 9, 1893; Fulton, 10, 1893; Tippecanoe, 9, 1883 (Arthur); Vermillion, 7, 1889 (Arthur).

Puccinia maydis Carr.

On *Zea mays*, Putnam, 10, 1891; 9, 1893; Montgomery, 1893 (Olive); Dearborn, 8, 1889 (Bolley).

Puccinia menthe Pers.

On *Blephilia hirsuta*, Johnson, 9, 1890 (Fisher); Montgomery, 11, 1890 (Fisher).

On *Cunila Mariana*, Monroe, 9, 1886 (Blatchley).

On *Mentha Canadensis*, Johnson, 8, 1890 (Fisher); Marshall, 10, 1893; Tippecanoe, 9, 1893 (Arthur).

On *Monarda fistulosa*, Montgomery, 10, 1890 (Fisher); Marshall, 10, 1893; Vigo, 10, 1893.

On *Monarda?* sp., Owen, 10, 1893.

On *Pycnanthemum lanceolatum*, Marshall, 10, 1893.

On *Pycnanthemum muticum*, Vigo, 10, 1893.

Puccinia podophylli Schw.

On *Podophyllum peltatum*, Johnson, 7, 1890 (Fisher); Monroe, 5, 1893; Brown, 5, 1893; Owen, 5, 1893; Vigo, 5, 1893; Putnam, 5, 1892; Mont-

gomery, 1893 (Olive); Wabash. 6, 1890 (Miller); Dearborn, 1889 (Bolley).

Puccinia polygoni-amphibi Pees.

On *Polygonum acre*, Johnson, 10, 1890 (Fisher); Putnam, 10, 1891; 10, 1893.

On *Polygonum Muhlenbergii*, Fulton, 10, 1893; Wabash, 5, 1890 (Miller).

Puccinia prenanthis (Pers.) Fckl.

I. III. On *Prenanthes* sp., Vigo, 5, 1893.

On *Prenanthes alba*, Putnam, 5, 1890 (Arthur).

Puccinia ranunculi Seymour.

On *Ranunculus repens*, Montgomery, 1893 (Olive).

Puccinia rubigo-vera (D C.) Wint.

On *Elymus Virginicus*, Tippecanoe, 10, 1888 (Bolley).

On *Avena sativa*, Johnson, 7, 1890 (Fisher).

On *Muhlenbergia diffusa*, 7, 1890 (Fisher).

Puccinia saniculae Grev.

On *Sanicula Canadensis*, Montgomery (Rose).

Puccinia schreuteriana Plowr. & Magnus

On *Carex stenolepis*, Johnson, 11, 1890 (Fisher). [Herb. U. S.]

Puccinia silphii Schw.

On *Silphium* sp., Putnam, 10, 1891.

Puccinia tanacetii D C.

On *Helianthus annuus*, Johnson, 9, 1890 (Fisher); Putnam, 10, 1891; 11, 1892; Montgomery, 1893 (Olive).

On *Hilanthus divaricatus*, Montgomery, 10, 1890 (Fisher).

On *Helianthus strumosus*, Johnson, 8, 1890 (Fisher); Tippecanoe, 9, 1888 (Bolley).

On *Helianthus tracheliiifolius*, Montgomery, 10, 1890 (Fisher); Shelby, 11, 1890 (Fisher).

On *Helianthus grosse-serratus*, Montgomery, 1893 (Olive).

On *Helianthus* sp., Putnam 10, 1893; Vigo, 10, 1893.

Puccinia tenuis Burrill.

On *Eupatorium ageratoides*, Putnam, 9, 1893.

Puccinia thalictri Chev.

II., III. On *Thalictrum dioicum*, Montgomery, 6, 1893 (Olive).

Puccinia vernoniae Schw.

On dead stems *Vernonia fasciculata*, Putnam, 12, 1892.

On *Vernonia fasciculata*, Putnam, 10, 1893.

PUCCINIA VIOLE (Schum.) D C.

On *Viola palmata cucullata*, Johnson, 8, 1890 (Fisher); Montgomery, 1893 (Olive).

On *Viola striata*, Montgomery, 10, 1890 (Fisher); Owen, 10, 1893; Putnam, 10, 1893.

I. On *Viola* sp., Vigo, 5, 1893; Putnam, 5, 1893.

PUCCINIA VULPINOIDES Diet. & Holway ined.

On *Carex vulpinoides*, Tippecanoe, 11, 1888 (Bolley).

PUCCINIA XANTHI Schw.

On *Ambrosia trifida*, Dearborn, 8, 1890 (Bolley).

On *Xanthium Canadense*, Montgomery, 10, 1890 (Fisher); 10, 1893; Putnam, 9, 1893.

On *Xanthium strumarium*, Johnson, 7, 1890 (Fisher); Putnam, 9, 1891; 7, 1893; Montgomery, 1893 (Olive); Tippecanoe, 8, 1890 (Arthur).

ROESTELIA LACERATA (Sow.) Fr.

On *Cratægus coccinea*, Montgomery, 1893 (Olive).

On *Cratægus punctata*, Montgomery, 1893 (Olive); Putnam, 9, 1893.

ROESTELIA PYRATA THAX.

On *Pyrus communis*, Wabash, 9, 1887 (Miller).

On *Pyrus coronaria*, Wabash, 8, 1891 (Miller).

UREDIO HYDRANGÆE B. & C.

On *Hydrangea arborescens*, Marion, 8, 1890 (Tracy); Montgomery, 8, 1890, 10, 1890 (Fisher); Putnam; 10, 1891.

UREDIO POLYPODII (Pers.) D C.

On *Cystopteris fragilis*, Putnam, 7, 1893.

URROMYCES APPENDICULATA (Pers.) Lev.

On *Phaseolus* (sp.) Montgomery, 10, 1890 (Fisher); 1893 (Olive); Putnam, 10, 1892; 7, 1893.

On *Strophostyles angulosa*, Montgomery, 1893 (Olive.)

URROMYCES CALADII (Schw.) Farl.

I. On *Arisæma dracontium*, Vigo, 5, 1893; Brown 5, 1893; (III) Montgomery 1893 (Olive).

I. On *Arisæma triphyllum*, Putnam, 5, 1892; Monroe, 5, 1893; Owen, 5, 1893; Vigo, 5, 1893.

III. On *Arisæma triphyllum*, Johnson, 7, 1890 (Fisher); Putnam, 7, 1893; Montgomery 1893 (Olive).

URROMYCES CARYOPHYLLINUS (Schr.) Schröt.

On Carnations, Marion, 1892 (Arthur).

UROMYCES DACTYLOIDES Otth.

II. On *Poa pratensis*, Johnson, 11, 1890 (Fisher). [Herb. U. S.]

UROMYCES EUPHORBIE, C. & P.

On *Euphorbia dentata*, Putnam, 9, 1891.

On *Euphorbia Preslii*, Johnson, 7, 1890 (Fisher); Fulton, 10, 1893.

On *Euphorbia hypericifolia*, Putnam, 10, 1891; Tippecanoe, 9, 1888 (Bolley).

UROMYCES GRAMINICOLA Burrill.

II. III. On some grass (*Triodia?* or *Glyceria?*), Johnson, 8, 1890 (Fisher). [Herb. U. S.]

UROMYCES HEDYSARI-PANICULATI (Schw.) Farl.

On *Desmodium canescens*, Johnson, 7, 1890 (Fisher); Montgomery, 1893 (Olive).

On *Desmodium revigatum*, Montgomery, 7, 1890 (Fisher).

On *Desmodium paniculatum*, Johnson, 7, 1890; 10, 1890 (Fisher).

On *Desmodium viridiflorum*, Putnam, 9, 1893.

On *Desmodium Dillenii*, Montgomery (Rose).

On *Desmodium* sp., Owen, 10, 1893; Vigo, 10, 1893; Marshall, 10, 1893; Montgomery, 10, 1893.

UROMYCES HOWEI Pk.

On *Asclepias cornuti*, Johnson, 8, 1890 (Fisher); Montgomery, 7, 1890 (Fisher); 1893 (Olive); 10, 1893; Putnam, 10, 1891; 9, 1893; Wabash, 7, 1891 (Miller); Dearborn 9, 1888 (Bolley).

On *Asclepias purpurascens*, Montgomery, 10, 1890 (Fisher).

On *Asclepias incarnata*, Montgomery, 1893 (Olive).

UROMYCES HYPERICI (Schw.) Curt.

On *Elodes campanulata*, Marshall, 10, 1893.

On *Hypericum Canadense*, Johnson, 8, 1890 (Fisher).

On *Hypericum mutilum*, Putnam, 10, 1891; Marshall, 10, 1893.

UROMYCES LESPEDEZE (Schw.) Pk.

On *Lespedeza procumbens*, Montgomery, 10, 1890 (Fisher).

On *Lespedeza reticulata*, Montgomery, 10, 1890 (Fisher).

On *Lespedeza* sp., Owen, 10, 1893.

UROMYCES PERIGYNIUS Hals.

On *Carex pubescens*, Putnam, 5, 1890 (Arthur). Cf. Bot. Gaz., Aug. 1891.

UROMYCES POLYGONI (Pers.) Fuckel.

On *Polygonum acre*, Johnson, 8, 1890 (Fisher).

On *Polygonum aviculare*, Putnam, 9, 1893; Montgomery, 1893 (Olive);

Tippecanoe, 9, 1888 (Bolley).

On *Polygonum erectum*, Johnson, 8, 1890 (Fisher); Putnam, 10, 1891;
Tippecanoe, 9, 1888 (Bolley).

UROMYCES TEREBINTHI (D C.) Wint.

On *Rhus toxicodendron*, Montgomery, 10, 1890 (Fisher); Putnam, 9, 1893;
10, 1893; Owen, 10, 1893.

UROMYCES TRIFOLII (A. & S.) Wint.

On *Trifolium medium*, Johnson, 11, 1890 (Fisher).

On *Trifolium pratense*, Montgomery, 10, 1890 (Fisher); 1893 (Olive);
Johnson, 11, 1890 (Fisher); Putnam, 9, 1891; Tippecanoe, 10, 1891
(Arthur); Wabash, 8, 1891 (Miller).

On *Trifolium repens*, Montgomery, 1893 (Olive); Tippecanoe, 10, 1888
(Bolley).

On *Trifolium hybridum*, Wabash, 10, 1886 (Miller).

UROMYCES SP.

On *Carex lupulina pedunculata*, Johnson, 11, 1890 (Fisher).

"n. sp." [Herb. U. S.]

UROPYXIS AMORPHÆ (Curt.) Schrot.

On *Amorpha canescens*, Marshall, 10, 1893.

TREMELLINI.

AURICULARIA SAMBUCINA Mart. Putnam, 12, 1891; 5, 1893; 10, 1893.

EXIDIA GLANDULOSA Bull. Putnam, 12, 1891; 10, 1893.

GUEPINIA SPATHULARIA Schw. Putnam, 10, 1892; 9, 1893.

TREMELLA ALBIDA Huds. Putnam, 6, 1893 (M. T. Cook.)

TREMELLA FOLIACEA Pers. Putnam, 10, 1893.

TREMELLA LUTESCENS Pers. Putnam, 10, 1893.

HYMENOMYCETES.

THELEPHOREI.

CORTICIUM INCARNATUM Fr.

On *Hicoria* sp., Putnam, 4, 1893.

CORTICIUM MUTATUM Pk., Putnam, 10, 1891.

CRATERELLUS CORNUCOPIOIDES L. Putnam, 7, 1893.

STEREUM ALBOBADIUM Schw., Putnam, 10, 1891 (H. E. Cole).

STEREUM BICOLOR Pers? Putnam, 10, 1891.

STEREUM COMPLICATUM Fr., Putnam, 10, 1891.

STEREUM FRUSTULOSUM Pers.

On *Quercus* sp., Putnam, 10, 1891; 10, 1892; 10, 1893.

STEREUM PURPUREUM Pers., Putnam, 3, 1892.

STEREUM SERICEUM Schw., Putnam, 10, 1891.

STEREUM VERSICOLOR Swartz, Putnam, 10, 1891; 10, 1892; 11, 1893.

THELEPHORA SCHWEINITZII Pk., Putnam, 7, 1893.

CLAVARIEL.

CALOCERA CORNEA Batsch. Putnam, 11, 1892; 10, 1893.

CLAVARIA CRISPULA Fr. Putnam, 7, 1893; 10, 1893.

CLAVARIA MUCIDA Pers. Putnam, 10, 1893.

CLAVARIA PYXIDATA Pers. Putnam, 10, 1893; Marshall, 10, 1893.

CLAVARIA STRICTA Pers. Putnam, 10, 1893.

HYDNEI.

HYDNUM ALBOVIRIDE Morg. Putnam, 6, 1893 (Florence Young).

HYDNUM ALUTACEUM Fr. Putnam, 10, 1891.

HYDNUM CORALLOIDES Scop. Putnam, 9, 1891; 12, 1891; 10, 1893 (Ellis and Wright); Tippecanoe, 9, 1893 (Arthur).

HYDNUM ERINACEUM Bull. Putnam, 10, 1891; 10, 1893; Vermillion, 9, 1889 (Arthur).

HYDNUM FARINACEUM Pers. Putnam, 10, 1891; 10, 1893.

HYDNUM FLABELLIFORME Berk. Putnam, 10, 1893.

HYDNUM MUCIDUM Fr. Putnam, 12, 1891.

HYDNUM NUDUM B. and C. Putnam, 11, 1891.

HYDNUM OCHRACEUM P. Putnam, 10, 1891; 10, 1893; Vigo, 10, 1893.

HYDNUM PITHYOPHILUM B. & C. ? Putnam, 10, 1893; plant bright yellow.

HYDNUM PULCHERRIMUM B. & C. Putnam, 10, 1891.

HYDNUM SEPTENTRIONALE Fr.

On a fallen oak, Vigo, 10, 1893.

On a standing beech, Vigo, 10, 1893.

HYDNUM STRATOSUM Berk. Under side of a log, Putnam, 10, 1891.

HYDNUM UDEM Fr. Putnam, 10, 1892; 10, 1893.

IRPEX FUSCESCENS Schw. Vigo 10, 1893; Putnam, 10, 1893.

IRPEX OBLIQUUS Schrad. Vigo, 10, 1893.

PILERIA MERISMOIDES Fr. Putnam, 10, 1892; 10, 1893; Vigo, 10, 1893.

POLYPORINEÆ.

D.EDALEA AMBIGUA Berk. Putnam, 9, 1891; 10, 1893.

D.EDALEA CONFRAGOSA Bolt. Putnam, 10, 1891; 9, 1893.

D.EDALEA UNICOLOR Bull. Putnam, 10, 1893.

FAVOLUS ALVEOLARIUS (D C.) Fairman. (*F. Europæus*, *F. Canadensis*.) Putnam, 1, 1893; Marshall, 10, 1893.

- GLEOPORUS CONCHOIDES Mont. ? Vigo, 10, 1893; Tippecanoe, 4, 1892 (Arthur).
- LENZITES BETULINA (L.) Fr. Putnam, 10, 1891; Vigo, 10, 1893; Tippecanoe, 4, 1892 (Arthur).
- LENZITES VIALIS Pk. Putnam, 10, 1891; 10, 1893 (Including polyporoid forms.)
- MERULIUS MOLLUSCUS Fr. Putnam, 10, 1893.
- MERULIUS RUBELLUS Pk. Putnam, 9, 1891; 11, 1892; 10, 1893.
- MERULIUS TREMELLOSUS Schrad. Putnam, 10, 1891; 5, 1893; 11, 1893; Vigo, 10, 1893.
- POLYPORUS ADUSTUS Willd. Putnam, 10, 1891; 10, 1893; Vigo, 10, 1893.
- POLYPORUS APPLANATUS Pers. Putnam, 10, 1891; 10, 1892; 10, 1893; Tippecanoe, 4, 1890 (Arthur).
- POLYPORUS ARULARIUS Batsch.
On fallen branches, Putnam, 5, 1892; 5, 1893.
- POLYPORUS CONCIATUS (Pers.) Fr. Putnam, 10, 1893.
- POLYPORUS CONCHIFER Schw.
On branches of *Ulmus Americana*, Putnam, 10, 1891; 10, 1893.
- POLYPORUS CONNATUS Fr.
On cherry tree, Putnam, 3, 1893.
- POLYPORUS FRAXINOPHILUS Pk.
On *Fraxinus Americana*, Putnam, 5, 1893.
- POLYPORUS FUSCOCARNEUS Pers. Putnam, 10, 1893; 11, 1893.*
- POLYPORUS GILVUS Schw. Putnam, 10, 1891; Vigo, 10, 1893; Marshall, 10, 1893.
- POLYPORUS HIRSCUTUS Wulf. Putnam, 10, 1891; 10, 1892; 10, 1893.
- POLYPORUS OBDUCEUS Pers. Putnam, 10, 1891.
- POLYPORUS PERGAMENUS Fr. Putnam, 10, 1891; 12, 1891; 10, 1892; Tippecanoe, 1889 (Arthur).
- POLYPORUS PICIPES Fr. Putnam, 10, 1891.
- POLYPORUS RADICATUS Schw. Putnam, 10, 1891.
- POLYPORUS RESINOSUS Schrad.
On *Tilia Americana*, Putnam, 5, 1892; 10, 1892.
- POLYPORUS RIBIS (Schum.) Fr.
On currant bushes, Putnam, 5, 1893.
- POLYPORUS RIMOSUS Berk? Putnam, 10, 1891.
- POLYPORUS SULPHUREUS (Bull.) Fr. Putnam, 9, 1893.

*These forms are called by Peck var. *tennis*.

POLYPORUS VERSICOLOR (L.) Fr. Tippecanoe, 11, 1889 (Arthur); Putnam, 10, 1891; Vigo, 10, 1893.

POLYPORUS VITELLINUS Schw. Putnam, 11, 1892.

POLYPORUS VITREUS Pers? Vigo, 10, 1893.

POLYPORUS (Poria) XANTHOSPORUS n. sp. A resupinate plant with golden yellow spores, covering large areas of decaying wood; mycelium thin, dirty white, forming an almost imperceptible subiculum; pores at first whitish shallow folds of the subiculum, leaving scarcely any margin not occupied by the various stages of imperfectly formed pores, at length appearing yellowish from the abundant spores, finally yellowish brown or dark russet, slightly angular, small (0.25 mm.), becoming cristate at the mouth, 1 cm. or less long when fully mature, or with occasional longer masses of pores rising above the general surface, 2-2.5 cm. long; spores copious, brilliant golden yellow, oval, smooth, nucleate, 6x4 or 6x5 mic. "Goose pond" nine miles south of Terre Haute, Vigo county, October 1893. Forming large masses in cavities underneath the bark and wood of decaying poplar logs (*Populus heterophylla?*), its brilliant spores forming a dense covering in portions of the cavities not filled with the fungus. The color has persisted without appreciable fading after exposure to the light for nearly seven months.

TRAMETES CINNABARINA (Jacq.) Fr. Putnam, 10, 1891; 10, 1893; Tippecanoe, 5, 1893 (Arthur); Vigo, 10, 1893; Marshall, 10, 1893.

TRAMETES SCUTELLATA Schw. (*T. Ohiensis* Berk.)

On oak rails, Putnam, 11, 1891.

BOLETINEÆ.

BOLETINUS POROSUS (Berk.) Pk. Putnam, 10, 1893.

BOLETUS AMERICANUS Pk. Putnam, 9, 1891.

BOLETUS CLINTONIANUS Pk. In a tamarack swamp, Fulton, 10, 1893.

BOLETUS SUBLUTEUS Pk. Putnam, 10, 1893.

BOLETUS SUBTOMENTOSUS L. Putnam, 7, 1893.

AGARICINEÆ.

AGARICUS CAMPESTRIS L. Putnam, 10, 1891; 5, 1892; 9, 1893.

AGARICUS SYLVATICUS Schæff. Putnam, 10, 1893.

AMANITA MUSCARIA L. Putnam, 7, 1893.

AMANITA PANTHERINA D. C. Putnam, 7, 1893.

AMANITA PHALLOIDES Fr. Putnam, 9, 1893.

AMANITA VIROSA Fr. In low, sandy woods, Vigo, 10, 1893.

ARNILLARIA MELLEÆ Vahl. Putnam, 9, 1891; 9, 1893; 10, 1893.

- CLITOCYBE ILLUDENS Schw. Putnam, 10, 1893.
 CLITOCYBE LACCATA Scap. Putnam 9, 1891; Vigo, 10, 1893.
 CLITOCYBE PHYLLOPHILA Fr. Putnam, 10, 1893.
 COLLYBIA DRYOPHILA Bull. Putnam, 5, 1892.
 COLLYBIA LONGIPES Bull. Putnam, 10, 1893.
 COLLYBIA PLATYPHYLLA Fr. Putnam, 5, 1892.
 COLLYBIA RADICATA Relb. Putnam, 9, 1891; 10, 1893.
 COLLBIA VELUTIPES Curt. Putnam, 12, 1891; Tippecanoe, 4, 1892. (Arthur).
 CREPIDOTUS DORSALIS Pk. Putnam, 10, 1891.
 CREPIDOTUS FULVOTOMENTOSUS Pk. Putnam, 7, 1893; 10, 1893.
 GALERA TENERA Schæff. Putnam. 10, 1893.
 HYPHOLOMA CANDOLLEANUM Fr.
 On lawns, Putnam 6, 1893.
 HYPHOLOMA INCERTUM Pk. Putnam, 5, 1892.
 HYPHOLOMA SUBLATERITUM Schæff. Putnam, 10, 1891; 10, 1893.
 HYPHOLOMA VELUTINUM Pers. Putnam, 10, 1893.
 LEPIOTA AMERICANA Pk. Putnam, 9, 1893.
 LEPIOTA CRISTATA A. and S. Putnam, 9, 1893.
 LEPIOTA NAUCINOIDES Pk. Putnam, 10, 1893.
 LEPIOTA PROCERA Scop. Putnam, 10, 1893; Montgomery, 10, 1893.
 MYCENA CORTICOLA Schum.
 On bark of living trees, Putnam, 11, 1891.
 MYCENA GALERICULATA Scop. Putnam, 5, 1892; Vigo, 5, 1893.
 MYCENA LEIANA Berk. Putnam, 5, 1892; Vigo, 5, 1893.
 NAUCORIA SEMIORBICULARIS (Bull).
 On lawns, Putnam, 5, 1892.
 PANÆOLUS FIMIPUTRIS Bull.
 On dung in pastures, Putnam, 6, 1893.
 PHOLIOTA ADIPOSA Fr. Putnam, 9, 1893; Vigo, 10, 1893.
 PHOLIOTA SPECTABILIS Fr. Vigo, 10, 1893.
 PLEUROTUS SALIGNUS Schrad.
 On dead Salix, Putnam, 10, 1893.
 PLEUROTUS SEROTINUS Schrad. Putnam, 11, 1892.
 PLUTEUS CERVINUS Schæff. Putnam, 5, 1892; 9, 1893.
 STROPHARIA ERUGINOSA Curt. Putnam, 10, 1893; Vigo, 10, 1893.
 STROPHARIA SEMIGLOBATA Batsch. Putnam, 10, 1893.
 TUBARIA FURFURACEA Pers. Putnam, 10, 1893.
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BOLBITIUS TENER Berk.

On lawns, Putnam 6, 1893.

CANTHARELLUS CIBARIUS Fr. Putnam, 7, 1893.

CANTHARELLUS CINNABARINUS. Putnam, 7, 1893.

COPRINUS ATRAMENTARIUS (Bull.) Fr. Putnam, 4, 1892; 10, 1893.

COPRINUS COMATUS Fr. Putnam, 10, 1893.

COPRINUS NICACEUS (Bull.) Fr. Putnam 4, 1892.

COPRINUS PLICATILIS (Curt.) Fr. Putnam, 6, 1893 (Melia Ellis).

COPRINUS STERQUILINUS Fr. Putnam, 6, 1893 (Melia Ellis).

LACTARIUS TRIVIALIS Fr. Putnam, 7, 1893.

LENTINUS LEPIDEUS Fr. Vigo, 10, 1893.

LENTINUS STRIGOSUS Fr. Putnam, 10, 1891; 10, 1893.

MARASMIUS ROTULA (Scop.) Fr. Putnam, 5, 1893.

PANUS STYPTICUS (Bull.) Fr. Putnam, 10, 1891; 5, 1893; 10, 1893; Vigo, 10, 1893.

SCHIZOPHYLLUM COMMUNE Fr. Putnam, 10, 1891; 11, 1893; Montgomery, 10, 1893.

GASTROMYCETES.

PHALLOIDEÆ.

MUTINUS CANINUS Huds. Putnam, 6, 1893; 7, 1893.

PHALLUS DEMONUM Rumph. ? Putnam, 10, 1891.

PHALLUS DUPLICATUS Bosc. Putnam, 10, 1891.

PHALLUS RAVENELII B. & C. Putnam 10, 1891.

LYCOPERDACEÆ.

BOVISTA MINOR Morg. Putnam, 4, 1894.

BOVISTA PILA B & C. Putnam, 4, 1892; 10, 1893; Marshall, 10, 1893.

BOVISTA PLUMBEA Pers. Vermillion, 9, 1889 (Arthur); Putnam, 6, 1892.

CALVATIA BOVISTA (L.) (*C. maxima* Schæff., *Lycoperdon gigantum* Batch).
Montgomery, 4, 1892 (Blair); Noble, 9, 1892 (Laura Beazell); Putnam, 11, 1893.

CALVATIA CÆLATA Bull. Putnam, 10, 1893.

CALVATIA CRANIIFORMIS Schw. Putnam, 10, 1893; Owen, 10, 1893.

CALVATIA CYATHIFORMIS Bosc. Putnam 4, 1893; 10, 1893; 11, 1893; Vigo, 10, 1893; Vermillion (Arthur).

CATASTOMA CIRCUMSCISSUM (B. & C.) Morg. Putnam 9, 1893.

GEASTER CAPENSIS Thüm. Elkhart 6, 1892. (S. W. Baer).

GEASTER LIMBATUS Fr. Putnam, 12, 1892.

GEASTER STRIATUS D. C. Putnam, 4, 1892; 10, 1892.

- LYCOPERDON ASTEROSPERMUM D. & M. Vigo 10, 1893.*
 LYCOPERDON CEPLEFORME Bull. Putnam 9, 1893.
 LYCOPERDON COLORATUM Pk. Putnam 4, 1894.
 LYCOPERDON EXCIPULIFORME Scop. Putnam, 10, 1893.*
 LYCOPERDON GLABELLUM Pk. Putnam, 10, 1893.
 LYCOPERDON GEMMATUM Batsch. Putnam, 10, 1893.
 LYCOPERDON MUSCORUM Morg. Vigo, 5, 1893 (a single specimen).
 LYCOPERDON PECKII Morg. Marshall, 10, 1893; Vigo, 10, 1893.
 LYCOPERDON PEDICELLATUM Pk. Putnam, 10, 1893.
 LYCOPERDON PYRIFORME Schaff. Putnam, 10, 1893; Vigo, 10, 1893.
 LYCOPERDON RIMULATUM Pk. Vigo, 5, 1893 (one specimen only).
 LYCOPERDON SEPARANS Pk. Putnam, 10, 1893; Marshall, 10, 1893; Vigo, 10, 1893.
 LYCOPERDON TURNERI E. and E. Marshall, 10, 1893.*
 SECOTIUM ACCUMINATUM (Mont.) Tul. (S. *Warnei*. Pk.) Putnam, 10, 1893;
 Tippecanoe, 9, 1893 (Arthur).
 TYLOSTOMA MAMMOSUM Mich. Putnam, 4, 1892; Vigo, 5, 1893.

SCLERODERMACEÆ.

- SCLERODERMA VULGARE Fr. Putnam, 9, 1893.

NIDULARIACEÆ.

- CRUCIBULUM VULGARE Tul. Brown, 5, 1893; Putnam, 6, 1893; 9, 1893;
 Vigo, 10, 1893.

- CYATHUS STRIATUS (Huds.) Hoffm. Putnam, 7, 1893.

- CYATHUS VERNICOSUS (Bull.) D C. Vermillion, 9, 1889 (Arthur); Putnam,
 6, 1893; 9, 1893.

BRYOPHYTA.

HEPATICÆ.

RICCIACEÆ.

- RICCIA FLUTANS L. Marshall, 5, 1891 (Norman); St. Joseph, 7, 1893 (Uline);
 Vigo, 5, 1893.

MARCHANTIACEÆ.

- ASTERELLA HEMISPHERICA (L.) Beauv. Putnam, 5, 1891 (Campbell); 5, 1892;
 10, 1892.

- CONOCEPHALUS CONICUS (L.) Dumort. Putnam 10, 1892.

- FIMBRIARIA TENELLA Nees. Owen, 5, 1893; Brown, 5, 1893.

- MARCHANTIA POLYMORPHA L. Putnam, 5, 1892; Owen, 5, 1893; Fulton, 10,
 1893.

*Determined by A. P. Morgan.

ANTHOCEROTACEÆ.

- ANTHOCEROS LEVIS L. Putnam, 10, 1892.
 NOTHOTHYLAS ORBICULARIS (Schw.) Sulliv. Putnam, 11, 1892; Monroe, 1893
 (Mottier).

JUNGERMANIACEÆ.

- ANEURA PINGUIS (L.) Dumort. Putnam, 11, 1892 (one specimen only).
 BAZZANIA TRILOBATA (L.) S. F. Gray. Putnam, 10, 1891.
 CEPHALOZIA CURVIFOLIA (Dicks.) Dumort. Putnam, 3, 1892; 10, 1892.
 CHILOSCYPHUS ASCENDENS H. and W. Putnam, 3, 1891.
 DIPLOPHYLLUM TAXIFOLIUM (Wahl.) Dumort. Putnam, 10, 1892.
 FOSSOMBRONIA CRISTATA Lindb. Putnam, 10, 1891.
 FRULLANIA ÆELOTIS Nees. Putnam, 10, 1891.
 FRULLANIA EBORACENSIS Lehm. Putnam, 10, 1891.
 FRULLANIA SQUARROSA Nees. Putnam, 10, 1891.
 FRULLANIA VIRGINICA Lehm. Putnam, 10, 1891.
 GEOCALYX GRAVEOLENS (Schrad.) Nees. Putnam, 10, 1892.
 JUNGERMANIA SCHRADERI Mart. Montgomery, 4, 1892.
 LEJEUNEA CALCAREA Lib. Putnam, 10, 1891. (On Camptosorus.)
 LEPIDOZIA REPTANS (L.) Dumort. Putnam, 3, 1892; 10, 1892.
 LOPHOCOLEA HETEROPHYLLA (Schrad.) Nees. Montgomery, 4, 1892.
 LOPHOCOLEA BIDENTATA (L.) Dumort. Putnam, 10, 1892.
 NARDIA CRENULATA (Sm.) S. F. Gray. Putnam, 10, 1893.
 NARDIA HYALINA (Lyell) Carr. Putnam, 5, 1893.
 PELLIA EPIPHYLLA (L.) Raddi. Putnam, 10, 1891; 10, 1892.
 PORELLA PINNATA L. Vigo, 5, 1893.
 PORELLA PLATYPHYLLA (L.) Lindb. Putnam, 10, 1891; Monroe, 5, 1893.
 PLAGIOCHILA ASPLENOIDES (L.) Dumort. Putnam, 10, 1892.
 PTILIDIUM CILIARE (L.) Nees. Putnam, 10, 1891.
 SCAPANIA NEMOROSA (L.) Dumort. Putnam, 9, 1891; 10, 1892.
 TRICHOCOLEA TOMENTELLA (Ehrh.) Dumort. Putnam, 4, 1892.

MUSCI.

- ANOMODON ROSTRATUS (Hedw.) Schimp. Owen, 5, 1893; Montgomery
 (Barnes).
 ATRICHUM ANGUSTATUM (Brid.) Bruch. & Schimp. Vigo, 10, 1893.
 ATRICHUM UNDULATUM (L.) Bruch. & Schimp. Putnam, 9, 1891.
 AULACOMNIUM HETEROSTICHUM (Beauv.) Bruch. & Schimp. Putnam, 5,
 1893; Montgomery (Barnes).

- BARTRAMIA POMIFORMIS (L.) Hedw. Putnam, 10, 1891.
 BRYUM ARGENTEUM L. Putnam, 2, 1892.
 BRYUM CESPITICUM L. Putnam, 5, 1892.
 BRYUM INTERMEDIUM (Schwäg.) Brid. Owen, 5, 1893.
 BRYUM ROSEUM Schreb. Putnam, 10, 1893.
 CERATODON PURPUREUS (L.) Brid. Tippecanoe, 4, 1892; Owen, 5, 1893;
 Putnam, 4, 1894.
 CLIMACIUM AMERICANUM Brid. Putnam, 10, 1891; 10, 1892.
 CONOMITRIUM JULIANUM (Savi.) Mont. Monroe, 3, 1893 (Mottier).
 CYLINDROTHECIUM CLADORRHIZANS (Hedw.) Schimp. Putnam, 10, 1891; 5,
 1893.
 DICRANELLA HETEROMALLA (L.) Schimp. Putnam, 10, 1891; Lake (Röll).
 DICRANELLA RUFESCENS (Turn.) Schimp. Putnam, 10, 1891.
 DICRANELLA VARIA (Hedw.) Schimp. Putnam, 11, 1892.
 DICRANUM FLAGELLARE Hedw. Lake (Röll). [Herb. Barnes.]
 DICRANUM SCOPARIUM (L.) Hedw. Putnam, 10, 1891; 5, 1893.
 DRUMMONDIA CLAVELLATA Hook. Tippecanoe, 4, 1892; Monroe (Blatchley).
 EUSTICHIA NORVEGICA Brid.
 On sandstone rocks. Putnam, 10, 1891.
 FISSIDENS INCURVUS (W. and M.) Schwäg. Putnam, 12, 1892.
 FISSIDENS TAXIFOLIUS (L.) Hedw. Putnam, 5, 1893.
 FUNARIA HYGROMETRICA (L.) Sibth. Putnam, 5, 1892.
 GRIMMIA APOCARPA (L.) Hedw. Putnam, 5, 1893.
 GYMNOSTOMUM CURVIROSTRE Hedw. Owen, 5, 1893.
 HYPNUM (Thamnidium) ALLEGHANIENSE Müll. Putnam, 4, 1892.
 HYPNUM ARCUATUM. Montgomery (Barnes). [Herb. Barnes.]
 HYPNUM (Eurhynchium) BOSCHI Schwäg. Putnam, 10, 1891; Monroe
 (Blatchley).
 HYPNUM (Euhypnum) CUPRESSIFORME L. Putnam, 10, 1891; 5, 1893.
 HYPNUM (Thuidium) DELICATULUM L. Putnam, 10, 1891.
 HYPNUM (Amblystegium) FLUVIATILE, Swartz. Montgomery (Barnes);
 Putnam, 5, 1882.
 HYPNUM (Brachythecium) LETUM Brid. Montgomery (Barnes); Putnam,
 10, 1891.
 HYPNUM (Amblystegium) RADICALE Beauv. Montgomery (Barnes). [Herb.
 Barnes.]
 HYPNUM (Brachythecium) RUTABULUM L. Putnam, 10, 1891.
 HYPNUM (Rhynchostegium) SERRULATUM Hedw. Putnam, 9, 1891; 5, 1893.

- HYPNUM (*Amblystegium*) SERPENS L. Putnam, 5, 1893.
 LEPTOTRICHUM PALLIDUM (Herb.) Hampe. Vigo, 5, 1893.
 LEPTOTRICHUM TORTILE (Schrad.) Müll. Lake (Roll). [Herb. Barnes.]
 LEUCOBRYUM VULGARE Hampe. Fulton, 10, 1893; Putnam, 10, 1893.
 LEUCODON JULACEUS (Hedw.) Sulliv. Monroe (Blatchley); Putnam, 10,
 1891; 12, 1891.
 MNIUM AFFINE Bland. Montgomery (Barnes). [Herb. Barnes.]
 MNIUM CUSPIDATUM Hedw. Putnam, 5, 1892.
 PHYSCOMITRIUM TURBINATUM (Michx.) Brid. Putnam, 5, 1892; 5, 1893; Tip-
 pecanoe, 4, 1892; Owen; 5, 1893.
 POGONATUM BREVICAULE Beauv. Putnam, 10, 1892.
 POLYTRICHUM FORMOSUM Hedw. Montgomery (Barnes). [Herb. Barnes.]
 POLYTRICHUM OHIOENSE Ren. & Cardot. Marshall, 10, 1893.
 POTTIA TRUNCATA (Hedw.) Fuern. Tippecanoe, 4, 1892.
 TIMMIA MEGAPOLITANA Hedw. Montgomery (Barnes). [Herb. Barnes.]
 WEISIA RIVIDULA Brid. Putnam, 4, 1892.

SPHAGNACEÆ.

- SPHAGNUM CYMBIFOLIUM Ehrh. Fulton, 10, 1893.*
 SPHAGNUM PAPILLOSUM LEVE Warnst. Fulton, 10, 1893.*
 SPHAGNUM RECURVUM MUCRONATUM. Fulton, 10, 1893.*
 SPHAGNUM RUFESCENS. Fulton, 10, 1893.*

* Determined by Prof. D. C. Eaton.

ZOOLOGY.

C. H. EIGENMANN, DIRECTOR.

In connection with the general circular of the Biological Survey of Indiana, the following special circular for the Zoological section was issued:

SPECIAL ANNOUNCEMENT OF THE DIVISION OF ZOOLOGY.

The leading aim of this division during the season will be the compilation of a complete bibliography of the vertebrates of Indiana and of as many invertebrates as can be provided for.

At the same time any material showing the distribution of animals in the state is especially desirable. To determine the distribution, complete collections of the vertebrates of as many localities as possible should be