

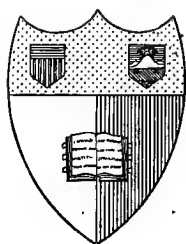
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2

BRYOPHYTA
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PTERIDOPHYTA
OF
PENNSYLVANIA

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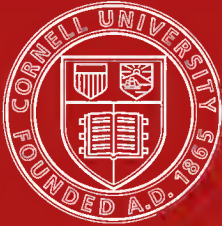
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CATALOGUE
OF THE
BRYOPHYTA
(Hepatics, Anthocerotes and Mosses)

AND
PTERIDOPHYTA
(Ferns and Fern-allies)

FOUND IN
PENNSYLVANIA.

BY
THOMAS CONRAD PORTER, D. D., LL. D.

BOSTON, U.S.A.
GINN & COMPANY, PUBLISHERS
1904

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BY S. A. MARTIN, EXECUTOR

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PREFACE.

This catalogue presents a complete list of the species of the Bryophytes and Pteridophytes of Pennsylvania, so far as they have come to the notice of the author. Nearly all the specimens cited are either in the herbarium of Lafayette College, Easton, Pa., or are preserved in other collections where they have been examined by the author.

The foundation of the list of Bryophytes was an enumeration of the species prepared by the late Mr. Thomas P. James, of Cambridge, Massachusetts, which together with a mounted series of the species named, and duplicates from a large number of stations, he presented to the herbarium of Lafayette College. All of the specimens just referred to were afterward critically examined by Mr. Coe F. Austin, who himself enriched the original set by his own contributions. Many species since discovered within the bounds of the State have been added.

The catalogue owes much of its enlargement also to the labors of Dr. A. P. Garber and of Mr. D. A. Burnett, and to the kindness of Mrs. N. L. Britton, of Messrs. Francis Wollé and Eugene A. Rau, and of Dr. John K. Small.

This volume is to be followed by another which will contain the Spermatophytes or flowering plants of the State, both the native species and those introduced and growing beyond culture.

THOS. C. PORTER

Easton, Pa.

NOTE.

At the request of Dr. S. A. Martin, executor of Professor Porter's estate, the undersigned has consented to edit this catalogue and that of the higher plants of the State referred to in a preceding paragraph.

J. K. SMALL

New York City.

HEPATICAE.

MARCHANTIALES.

RICCIACEAE.

Riccia L.

- R. arvensis** Austin.—NORTHAMPTON, Lehigh Mountain, *Rau*.
R. crystallina L.—PHILADELPHIA, Moyamensing, *James*.
R. fluitans L.—In stagnant and running water. NORTHAMPTON, Lucy Furnace, *Rau*; LEHIGH, *Rau*; BUCKS and PHILADELPHIA, *James*; DELAWARE, Radnor, *James*; CHESTER (Flora Cestricea); LANCASTER, Collin's Ferry, *Porter*.
R. glauca L.—On damp earth. PHILADELPHIA, Bustleton, *James*; CHESTER (Flora Cestricea); FRANKLIN, Mercersburg, *Porter*.
R. nigrella DC.—LANCASTER, *Porter*.
R. Sullivantii Aust.—LEHIGH, *Rau*.

Ricciocarpus Corda.

- R. natans** (L.) Corda.—Floting on water. MONROE, *Crawford*; SUSQUEHANNA, *Graves*; LANCASTER and HUNTINGDON, *Porter*; ALLEGHENY, *Knipe*.

MARCHANTIACEAE.

Reboulia Raddi.

- R. hemisphaerica** (L.) Raddi.—NORTHAMPTON, PHILADELPHIA, *James*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestricea); LANCASTER and FRANKLIN, *Porter*. Very common.

Grimaldia Nees.

G. fragrans (Balb.) Corda.—NORTHAMPTON, *James*; LANCASTER and FRANKLIN, *Porter*.

Asterella Beauv.

A. tenella (L.) Beauv.—On damp ground. NORTHAMPTON, Easton, *Porter*; Bethlehem, *Rau*; PHILADELPHIA, *James*; DELAWARE (Smith's Catalogue); CHESTER, New Garden, *Michener*.

Conocephalum Wigg.

C. conicum (L.) Dumort.—On wet rocks. NORTHAMPTON, Bushkill Gap, *Porter*; LEHIGH, *Rau*; BUCKS, Nockamixon Cliffs, *Porter*; PHILADELPHIA, *James*; DELAWARE (Smith's Catalogue); CHESTER, New Garden, *Michener*; LANCASTER and FRANKLIN, *Porter*; WESTMORELAND, Greensburg *James*.

Dumortiera R. Bl. & N.

D. hirsuta (Sw.) R. Bl. & N.—On shaded, wet rocks. NORTHAMPTON, Bushkill Gap above Easton, *Porter*; CHESTER, on mountain south of Pottstown, *Updegrave*.

Preissia Corda.

P. quadrata (Scop.) Nees.—On damp rocks. NORTHAMPTON, Glendon, *Porter*; Martin's Creek, *Austin*; SCHUYLKILL, near Pottsville, *Porter*.

Marchantia L.

M. polymorpha L.—In wet, springy places. NORTHAMPTON, Easton, Lehigh Mountain, *Rau*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER and HUNTINGTON, *Porter*. Common.

JUNGERMANNIALES.**METZGERIACEAE.****Riccardia** S. F. Gray.

[*Aneura* Dumort.]

R. multifida (L.) S. F. Gray.—On decaying moss and wood.

MONROE, Tobyhanna Mills, *James*; Water Gap, *Rau*; PHILADELPHIA, Fairmount Park, *James*; CENTRE, Bear Meadows, *Porter*.

R. palmata (Hedw.) Carruth.—On rotten logs. CENTRE, *Porter*; CAMBRIA, Cresson, *James*.

R. pinguis (L.) S. F. Gray.—On moist ground. MONROE, Water Gap, *Rau*; NORTHAMPTON, Easton, *Porter*; Lehigh Mountain, *Rau*; PHILADELPHIA, Fairmount Park, *James*; CENTRE, Bear Meadows, *Porter*.

R. pinnatifida (Sw.) Carruth.—LEHIGH, *Rau*.

R. sessilis (Spreng.) Kuntze.—On old, damp logs. NORTHAMPTON, Easton, *Porter*; CHESTER (Flora Cestricea).

Metzgeria Raddi.

M. conjugata Lindb.—On shaded rocks. MONROE, *James*; NORTHAMPTON, Easton and Bethlehem; PHILADELPHIA; DELAWARE and CHESTER, *James*; LANCASTER, *Porter*; PERRY, *James*.

Pallavicinia S. F. Gray.

P. Lyallii (Hook.) S. F. Gray.—Among damp mosses. NORTHAMPTON, on the Monocacy, *Rau*; CHESTER, Coventry, *James*; LANCASTER; CENTRE, Bear Meadows, *Porter*.

Pellia Raddi.

P. epiphylla (L.) Corda.—On damp ground. WAYNE, *Garber*; NORTHAMPTON, Bethlehem, *Fiot*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestricea); PHILADELPHIA, *James*.

Blasia Mich.

B. pusilla L.—On the ground. NORTHAMPTON, Martin's Creek, *Porter*, Bethlehem, *Fiot*; ELK, Benezette, *McMinn*.

Fossombronia Raddi.

F. angulosa Raddi.*—In moist meadows. MONROE, Water Gap, *Austin*; NORTHAMPTON, Seidersville, *R. G. Bechdolt*.

* Probably *F. salina* Lindb.

F. pusilla (L.) Dumort.—On damp ground. NORTHAMPTON, along the Monocacy, *Rau*.

JUNGERMANNIACEAE.

Marsupella Dumort.

M. emarginata Dumort.—CARBON, Stony Creek, *Rau*.

M. sphacelata (Gieseke) Dumort.—On wet rocks. CARBON, Stony Creek, *Rau*.

Nardia S. F. Gray.

N. crenulata (Sm.) Lindb.—PHILADELPHIA, on the Wissahickon, *James*.

N. hyalina (Lyell) Carr.—NORTHAMPTON, Lime Ridge, *Rau*.

N. Lescurii (Aust.) Underw.—CARBON, *Rau*.

N. scalaris (Schrad.) S. F. Gray.—MONROE, Water Gap, *Austin*.

Jungermannia L.

J. obtusifolia Hook.—PHILADELPHIA, Bartram's Garden and Fairmount Park, *James*.

J. barbata Schreb.—MONROE, Water Gap, *Austin*.

J. bicrenata Lindenb.—MONROE, Water Gap, *Austin*.

J. excisa Dickson.—MONROE, Water Gap, *Austin*.

J. exsecta Schmidel.—NORTHAMPTON, Lehigh Mountain, *Rau*.

J. incisa Schrad.—CARBON, *Rau*.

J. inflata Huds.—PIKE, CARBON and LEHIGH, *Rau*.

J. pumila With.—On rotten logs. LEHIGH, *Rau*; FRANKLIN, Mercersburg, *Porter*.

J. intermedia (Lindb.) Dumort.—BUCKS, Narrowsville, *James*; PHILADELPHIA, Fairmount Park, *James*; LANCASTER, Martic Forge, *Porter*.

Plagiochila Dumort.

- P. asplenioides** (L.) Dumort.—Along shaded rivulets. NORTHAMPTON, *James* and *Rau*; BUCKS, Narrowsville, *James*; PHILADELPHIA, Fairmount Park, *James*; CHESTER (Flora Cestrica).
- P. porelloides** Lindb.*—Among mosses in shaded ravines. NORTHAMPTON, *James* and *Rau*; BUCKS, Narrowsville *James*; PHILADELPHIA, Fairmount Park, *James*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica); LANCASTER, Chickies, *Porter*.
- P. spinulosa** (L.) Dumort.†—BUCKS, Narrowsville, *James*; DELAWARE (Smith's Catalogue).

Lophocolea Dumort.

- L. bidentata** (L.) Dumort.—NORTHAMPTON, Lehigh Mountain, *Rau*; CHESTER (Flora Cestrica); LANCASTER, *Porter*.
- L. Austini** Lindb.—NORTHAMPTON and LEHIGH, *Rau*.
- L. heterophylla** (Schrad.) Dumort.—On the ground and old logs.—NORTHAMPTON, Lime Ridge, *Rau*; PHILADELPHIA, Fairmount Park, *James*; DELAWARE (Smith's Catalogue); CHESTER, New Garden, *Michener*.
- L. minor** Nees.—NORTHAMPTON, Lehigh Mountain, *Rau*.

Cheiloscyphus Corda.

- C. adscendens** Hook. & Wils.—NORTHAMPTON, Bethlehem, *Rau*; DELAWARE (Smith's Catalogue).
- C. polyanthos** (L.) Corda.—On wet, springy ground. MONROE, Tobyhanna Mills, *Porter*; CARBON, Stony Creek, *Rau*; NORTHAMPTON, Bethlehem, *Rau*; CHESTER (Flora Cestrica); DELAWARE (Smith's Catalogue); HUNTINGDON and CENTRE, *Porter*.

**P. porelloides* Lindb. is not now considered specifically distinct from *P. asplenioides*.

† This is probably *P. Sullivantii* Gottsche. *P. spinulosa* is a species of the Old World.

Harpanthus Nees,

H. scutatus (Web.) Spruce.—PIKE and CARBON, *Rau*; FRANKLIN, Mercersburg, *Porter*.

Geocalyx Nees.

G. graveolens (Schrad.) Nees.—On the ground and rotten logs. NORTHAMPTON, *Rau*; PHILADELPHIA, Fairmount Park, *James*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica); FRANKLIN, *Porter*; CAMBRIA and CLARION, *James*.

Cephalozia Dumort.

C. bicuspidata (L.) Dumort.—CARBON, *Rau*.

C. catenulata (Huebn.) Lindb.—CARBON and LEHIGH, *Rau*.

C. curvifolia (Dicks.) Dumort.—On rotten logs. NORTHAMPTON, Flint Hill, *Rau*; PHILADELPHIA, Fairmount Park, *James*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica); LANCASTER, *Porter*; CAMBRIA, *Porter* and *James*.

C. divaricata (Sm.) Dumort.—On rocks. PHILADELPHIA, Fairmount Park, *James*.

C. media Lindb.—On old logs. FRANKLIN, Mercersburg, *Porter*.

Odontoschisma Dumort.

O. denudatum (Nees) Dumort.—On the ground and rotten wood. NORTHAMPTON, Easton, *Garber*; CHESTER (Flora Cestrica); DELAWARE (Smith's Catalogue); LANCASTER, FRANKLIN, HUNTINGDON and CAMBRIA, *Porter*.

O. Sphagni (Dicks.) Dumort.—On decayed logs and the ground. MONROE, Naomi Pines, *Mrs. Britton*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica); FRANKLIN, Mercersburg, *Porter*.

Kantia S. F. Gray.

K. Trichomanis (L.) S. F. Gray.—On the ground and rotten

logs. PIKE, LEHIGH and NORTHAMPTON, *Rau*; PHILADELPHIA, Fairmount Park, *James*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestricea).

Bazzania S. F. Gray.

B. trilobata S. F. Gray.—In wet woods and swamps. NORTHAMPTON, Easton, Bethlehem, *Rau*; DELAWARE (Smith's Catalogue); CHESTER, *Michener*; LANCASTER, *Porter*.

Lepidozia Dumort.

L. reptans (L.) Nees.—NORTHAMPTON, Nazareth, *Rau*.

L. setacea (Web.) Mitt.—NORTHAMPTON, Lehigh Mountain, *Rau*; CARBON, *Rau*; DELAWARE (Smith's Catalogue).

Blepharostoma Dumort.

B. trichophyllum (L.) Dumort.—FRANKLIN, Mercersburg, *Porter*.

Herberta S. F. Gray.

H. adunca (Dickson) S. F. Gray.—CARBON, *Rau*.

Ptilidium Nees.

[*Blepharozia* Dumort.]

P. ciliaris (L.) Nees.—On roots of trees and old logs. CARBON and LEHIGH, *Rau*; MONROE, NORTHAMPTON, MONTGOMERY, *James*; PHILADELPHIA, Fairmount Park, *James*; CHESTER, *Michener*; FRANKLIN and HUNTINGDON, *Porter*; ELK, *McMinn*.

Trichocolea Dumort.

T. tomentella (Ehrh.) Dumort.—MONROE, *Porter*; PHILADELPHIA, Fairmount Park, *James*; CHESTER, New Garden, *Michener*; LANCASTER, Martic Forge, *Porter*.

Diplophylleia Trevis.

D. taxifolia (Wahl.) Trevis.—On damp and shaded ground. NORTHAMPTON, on the Monocacy, *Rau*.

Scapania Dumort.

S. nemorosa (L.) Dumort.—Damp places.—MONROE; NORTH-

TON, Easton, and Bethlehem, *Rau*; PHILADELPHIA, *Watson*, Fairmount Park, *James*; CHESTER, *Michener*; LANCASTER and FRANKLIN, *Porter*.

S. subalpina (Nees) Dumort.—CARBON, *Rau*.

S. undulata Nees & Mont.—On damp ground. CARBON, Stony Creek, *Rau*; NORTHAMPTON, Easton, *James*; FRANKLIN, Mercersburg, *Porter*.

Radula Dumort.

R. complanata (L.) Dumort.—On bark of trees. NORTHAMPTON, Easton, *Porter*; Bethlehem, *Rau*; DELAWARE (Smith's Catalogue); CHESTER, *James*; LANCASTER, Martic Forge, *Porter*.

R. obconica Sull.—On rocks. BUCKS, Narrowsville, *James*.

R. tenax Lindb.—LEHIGH, Allentown, *Rau*; CARBON, *Rau*; MONROE, Water Gap, *Austin*.

Porella L.

P. platyphylla (L.) Lindb.—On rocks and trees. NORTHAMPTON, Easton, *Porter*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestricea); LANCASTER, Martic Forge, *Porter*.

P. pinnata L.—On wet rocks in rivulets. LEHIGH, *Rau*; NORTHAMPTON; BUCKS, Narrowsville, *James*; LANCASTER, *Porter*.

P. rivularis (Nees) Trevis.—BUCKS, Narrowsville, *James*.

Lejeunea Libert.

L. clypeata (Schwein.) Sull.—On rocks. NORTHAMPTON; PHILADELPHIA, *James*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestricea); LANCASTER, *Porter*; Laurel Hill, western Pennsylvania, on the authority of Underwood.

L. echinata (Hook.) Tayl.—Exposed rocks. LEHIGH, *Rau*; BUCKS, Narrowsville, *James*.

L. lucens Tayl.—Wet rocks. LANCASTER; HUNTINGDON, near Barre Forge, *Porter*.

L. serpyllifolia Americana Lindb.—On trees. HUNTINGDON, Alexandria, *Porter*; CARBON, *Rau*.

Jubula Dumort.

J. Hutchinsiae Sullivantii Spruce.—On the ground and stones. CARBON, Stony Creek, *Rau*; MONROE, Water Gap, *Garber*; FRANKLIN, Mercersburg, *Porter*.

Frullania Raddi.

F. Asa-Grayana Mont.—On trees. PHILADELPHIA, *James*; CHESTER, *James*; DELAWARE, *James*; LANCASTER, Snavely's Mill, *Porter*; PERRY, *James*.

F. Eboracensis Gottsche.—On rocks and trees. NORTHAMPTON, Easton Cemetery, *James*; Lehigh Mountain, *Rau*; CHESTER, *James*; LANCASTER, *Porter*.

F. plana Sull.—On shaded rocks. NORTHAMPTON, Lime Ridge, *Rau*; LANCASTER and FRANKLIN, *Porter*.

F. riparia Hampe.—NORTHAMPTON, *Rau*; Delaware (Smith's Catalogue); CHESTER, *James*; LANCASTER, *Porter*; FRANKLIN, Mercersburg, *Porter*; HUNTINGDON, *Porter*.

F. squarrosa (R. Bl. & Nees) Dumort.—LANCASTER, mouth of the Tucquan Creek, *Small*.

F. Virginica Gottsche.—On trees. NORTHAMPTON, Easton Cemetery, *James*; PHILADELPHIA, Fairmount Park, *James*; CHESTER (Flora Cestricea); LANCASTER, *Porter*; FRANKLIN, Mercersburg, *Porter*.

ANTHOCEROTES.

ANTHOCEROTALES.

ANTHOCEROTACEAE.

Anthoceros L.

- A. *laevis*** L.—On damp ground. NORTHAMPTON, Lehigh Mountain, *Rau*, Easton, *Porter*; CHESTER (Flora Cestrica); DELAWARE (Smith's Catalogue); LANCASTER, *Porter*.
- A. *punctatus*** L.—NORTHAMPTON, Lime Ridge, *Rau*; BUCKS, Narrowsville, *James*; PHILADELPHIA, *James*; DELAWARE, (Smith's Catalogue); FRANKLIN, *Porter*.

Notothyias Sull.

- N. *orbicularis*** (Schwein.) Sull.—On wet ground. NORTHAMPTON, Lehigh Mountain, *Rau*; PHILADELPHIA, Moyamensing, *James*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica).
- N. *melanospora*** Sull.—NORTHAMPTON, *Rau*; PHILADELPHIA, *James*.

MUSCI.*
SPHAGNALES.
SPHAGNACEAE.

Sphagnum L.

- S. acutifolium** Ehrh.—MONROE, *James*; LUZERNE, *Garber*;
LEHIGH, *Rau*; HUNTINGDON, Warrior's Ridge, *Porter*;
CAMBRIA, Cresson, *James*.
- S. acutifolium deflexum** Schimp.—Carbon, *Rau*.
- S. cuspidatum** Ehrh.—MONROE, *James*; LUZERNE, *Rau*;
PIKE, *Rau*.
- S. cuspidatum intermedium** (Hoffm.) *Rau*.—PIKE and
MONROE, *Porter*.
- S. cuspidatum Torreyanum** (Sull.) Lesq. & *James*.—MON-
ROE, *Porter*.
- S. cymbifolium** Ehrh.—WAYNE, *Garber*; MONROE, *James*;
CARBON, *Rau*; LUZERNE, *Rau*; CHESTER, *James*; HUNT-
INGDON, *Porter*; CAMBRIA, *James* and *Porter*.
- S. fimbriatum** Wils.—WAYNE, Mount Pleasant, *Garber*.
- S. Girgensohnii** Russ.—LANCASTER, *Muhlenberg*.
- S. imbricatum** Hornsch.—LANCASTER and LEBANON, Mt.
Hope, *Small*.
- S. laracinum** Spruce.—LANCASTER and LEBANON, Mt. Hope,
Small.

* Shortly before his death, Professor Porter submitted the manuscript of the mosses to Mrs. Britton for revision. Mrs. Britton has kindly revised such portions as needed it in the light of recent studies, and has also added the citations of additional localities that have come to her notice through specimens in the herbarium of The New York Botanical Garden. [ED.]

- S. molluscum** Bruch.—CARBON, *Rau*.
- S. papillosum** Lindb.—LUZERNE, Frenchtown, *Rau*.
- S. rigidum** (Nees) Schimp.—LUZERNE, Frenchtown, *Rau*;
PHILADELPHIA, Fairmount Park, *James*.
- S. rigidum laxum** Austin.—LUZERNE, Frenchtown, *Rau*.
- S. rigidum squarrosus** Ross.—NORTHAMPTON, LEHIGH
and LUZERNE, *Rau*.
- S. squarrosus** Pers.—PIKE and CARBON, *Rau*; MONROE,
Porter; LANCASTER, Smithville, *Small*; HUNTINGDON and
CAMBRIA, *Porter*.
- S. strictum** Lindb.—MONROE, Pocono plateau, *James* and
Garber; PIKE, LUZERNE and CARBON, *Rau*.
- S. subsecundum** Nees.—MONROE, Pocono plateau, *James*;
CARBON and LEHIGH, *Rau*.
- S. subsecundum contortum** (Schultes) Schimp.—LANCAS-
TER and LEBANON, Mt. Hope, *Small*.

ANDREAEALES.

ANDREAEACEAE.

Andreaea Ehrh.

- A. crassinervia** Bruch.—On rocks. CARBON, Stony Creek,
Rau.
- A. petrophila** Ehrh.—On dry rocks. CARBON, Stony Creek,
Rau.
- A. Rothii** Web. & Mohr.—On rocks. MONROE, Water Gap,
Austin; CARBON, Stony Creek, *Rau*. [*A. rupestris* Roth.]

ARCHIDIALES.

ARCHIDIACEAE.

Archidium Brid.

- A. Ohioense** Schimp.—LANCASTER, along the Tucquan
Creek, *Porter*. Very rare.

BRYALES.

EPHEMERACEAE.

Ephemerum Hampe.

- E. cohaerens** Hampe.—NORTHAMPTON, Bethlehem, *Wolle*;
BUCKS and PHILADELPHIA, *James*; LANCASTER.
- E. crassinervium** (Schwaegr.) Hampe.—Old fields. NORTH-
AMPTON, Bethlehem, *Rau*; EASTON, *Porter*; INDIANA,
James.
- E. serratum** (Schreb.) Hampe.—BUCKS and CHESTER, Ches-
ter Valley, *James*.
- E. serratum angustifolium** Schimp.—CHESTER, *James*.
- E. spinulosum** Br. & Sch.—LEHIGH and NORTHAMP-
TON, Bethlehem, *Rau*; PHILADELPHIA, Moyamensing,
James.

PHYSCOMITRELLACEAE.

Physcomitrella Br. & Sch.

- P. patens** (Hedw.) Br. & Sch.—LANCASTER, *Muhlenberg*.

PHASCACEAE.

Phascum L.

- P. cuspidatum** Schreb.—Old fields. LEHIGH, *Rau*; NOR-
THAMPTON, Easton; BUCKS, Morrisville, *James*; PHILA-
DELPHIA, *James*; DELAWARE (Smith's Catalogue); CHE-
STER (Flora Cestrica); BEAVER, *James*.

Sphaerangium Schimp.

- S. muticum** (Schreb.) Schimp.—Moist fields. LEHIGH and
NORTHAMPTON, *Rau*; CHESTER, Coventry, and INDIANA,
Derry, *James*.
- S. triquetrum** Schimp.—On the ground. PHILADELPHIA,
Bustleton, *James*.

Astomum Hampe.

- A. crispum** Hedw.—On the ground. NORTHAMPTON, on the Monocacy, *Rau*; CHESTER (Flora Cestrica).
- A. nitidulum** Schwaegr.—Old fields. LEHIGH and NORTHAMPTON, *Rau*; CHESTER, Coventry, and INDIANA, Derry, *James*.
- A. Sullivantii** (Schimp.) Hampe.—Old pastures. NORTHAMPTON, Bethlehem, *Rau*; BUCKS, PHILADELPHIA, INDIANA and BEAVER, *James*.

BRUCHIACEAE.**Pleuridium** Brid.

- P. subulatum** (Huds.) Rab.—WASHINGTON, *Linn* and *Simonton*; NORTHAMPTON and LEHIGH, *Rau*.

Sporledera Hampe.

- S. palustris** Schimp.—Old fields.—PHILADELPHIA, Moyamensing, and CHESTER, Chester Valley, *James*.

Bruchia Schwaegr.

- B. flexuosa** (Schwaegr.) C. Muell.—BUCKS, PHILADELPHIA, Germantown, and CHESTER, *James*; LANCASTER.
- B. Sullivantii** Austin.—Meadows. PHILADELPHIA, *James*.

WEISSIACEAE.**Hymenostylium** Brid.

- H. curvirostre** (Ehrh.) Lindl.—CARBON, Parryville, and LEHIGH, Rockdale, *Rau*. [*Gymnostomum curvirostre* Hedw.]

Mollia Schrank.

- M. aeruginosa** (Sm.) Lindb.—Crevices of rocks. LEHIGH, *Rau*; NORTHAMPTON, Easton, *James*; BUCKS, Narrowsville; HUNTINGDON, Spruce Creek, *Porter*. [*Gymnostomum rupestre* Schwaegr.]

- M. aeruginosa stelligera** (Schimp.) Braithw.—LEHIGH, Rockdale, *Wolle*.
- M. viridula** (L.) Lindl.*—NORTHAMPTON; PHILADELPHIA; DELAWARE and CHESTER, *James*; LANCASTER, *Porter* and *Small*; WASHINGTON, *Linn* and *Simonton*; MCKEAN,³*Burnett*. [*Weissia viridula* (L.) Hedw.]
- M. viridula gymnostoides** (Brid.) Braithw.—BUCKS, Nockamixon cliffs, *James*; LANCASTER, *Muhlenberg*; NORTHAMPTON, Bethlehem, *Rau* and *Wolle*. [*Mollia Rauana* Austin.]
- M. viridula stenocarpa** (Muell.)—NORTHAMPTON, Easton, *James*.

Rhabdoweisia Br. & Sch.

- B. denticulata** (Brid.) Br. & Sch.—On shaded rocks. PIKE, Bushkill Falls, *Porter*; CARBON and NORTHAMPTON, Bethlehem, *Rau*; LAWRENCE, Slippery Rock Creek, *James*.
- R. fugax** (Hedw.) Br. & Sch.—In crevices of rocks. CARBON, *Rau*; NORTHAMPTON, Bushkill Gap, *Porter*; PHILADELPHIA, Fairmount Park, *James*; MCKEAN, Broadbow, *Burnett*.

Oreoweisia Schimp.

- O. serrulata** (Funck) Schimp.—On moist rocks. PIKE, CARBON and NORTHAMPTON, *Rau*; BUCKS, Nockamixon cliffs, *James*; FRANKLIN, Mercersburg, *Porter*.

DICRANACEAE.

Onchophorus Brid.

- O. Wahlenbergii** Brid.—Frequent in swamps, along streams on decaying trunks. MCKEAN, Broadbow, *Burnett*.

**Grimmia controversa* Muhlenberg.

Dicranella Schimp.

- D. crispa** (Ehrh.) Schimp.—CARBON and LEHIGH, *Rau*; LANCASTER, Dillerville Swamp, *James*.
- D. varia** (Hedw.) Schimp.—NORTHAMPTON, Easton, *Porter*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Eby*. [*Dicranum varium* Hedw.]
- D. rufescens** (Dicks.) Schimp.—MONROE, *James*; PHILADELPHIA, Wissahickon, and DELAWARE, Radnor, *James*; LANCASTER and HUNTINGDON, *Porter*; CAMBRIA, Galitzin, *James*; ELK, *McMinn*; LANCASTER, Conewago, *Small*.
- D. curvata** Schimp.*—LANCASTER, on sandstone, *Porter*.
- D. heteromalla** (L.) Schimp.—NORTHAMPTON, Easton, *Porter*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER and FRANKLIN, *Porter*.
- D. heteromalla orthocarpa** (Hedw.) C. Muell.—NORTHAMPTON, Bethlehem, *Rau*; LANCASTER, *Muhlenberg*. [*Dicranum orthocarpum* Hedw.]

Dicranum Hedw.

- D. condensatum** Hedw.—In sandy soil. LANCASTER and LEBANON, *Muhlenberg*; DAUPHIN, Peter's Mountain, *C. H. Small*. [*D. sabuletorum* R. & C.]
- D. elatum** Lindb.—On the ground. MONROE, *Porter*. [*D. Drummondii* C. Muell.]
- D. flagellare** Hedw.—MONROE, *James*; CARBON, *Rau*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica); LANCASTER, *Small*; HUNTINGDON and BLAIR, *Porter*.
- D. fulvum** Hook.—PIKE and CARBON, *Rau*; PHILADELPHIA, DELAWARE and CHESTER, Chester Valley, *James*; LANCASTER, Mt. Hope, *Small*.

*No specimens of this species from Pennsylvania have been preserved. Those from the above locality are probably referable to *D. heteromalla*—the form with curved pedicels. [E. G. B.]

- D. longifolium** Ehrh.—CARBON, *Rau*; MONROE, Mt. Pocono, *James*; CHESTER (Flora Cestrica).
- D. majus** Turn.—BLAIR, *Porter*. (Very doubtful.—E. G. B.)
- D. montanum** Hedw.—MONROE, Tobyhanna Mills, *James*; HUNTINGDON, *Porter*; ELK, *McMinn*.
- D. Schraderi** Web. & Mohr.—BUCKS and NORTHAMPTON, *Rau*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica).
- D. scoparium** (L.) Hedw.—NORTHAMPTON; BUCKS; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER; DAUPHIN, *C. H. Small*; CAMBRIA, *James*. Very common.
- D. scoparium orthophyllum** Brid.—CARBON and LEHIGH, *Rau*.
- D. scoparium rupestre** Sull. & Lesq. — Mountain regions, *Rau*.
- D. undulatum** Ehrh.—NORTHAMPTON and BUCKS, *Rau*; CHESTER, Chester Valley, *James*; LANCASTER, FULTON and HUNTINGDON, *Porter*.
- D. viride** Schimp.—PIKE, *Rau*; CAMBRIA, Wiltmore, *James*.

Dieranodontium Br. & Sch.

- D. longirostre** (Starke) Schimp.—On sandstone rocks, usually sterile; fertile specimens from MCKEAN, Toad Hollow, near Bradford, *Burnett*.

Trematodon Mich.

- T. ambiguus** (Hedw.) Hornsch.—PIKE, CARBON and LUZERNE, Hazelton, *Rau*; CAMBRIA, Cresson, *James* and *Porter*.
- T. longicollis** Michx.—PHILADELPHIA, Tacony, *James*.

LEUCOBRYACEAE.

Leucobryum Hampe.

- L. glaucum** (L.) Schimp.—On the ground in woods. MONROE, *James*; LUZERNE, *McMinn*; NORTHAMPTON; PHILA-

DELPRIA; DELAWARE and CHESTER, *James*; LANCASTER, *Small*. Common throughout, but rare in fruit.

- L. albidum** (Brid.) Lindb.—On stumps or the ground. BERKS, *Hiester*; PHILADELPHIA, DELAWARE and CHESTER, Chester Valley, *James*; LANCASTER and HUNTINGEON, *Porter*. [*L. minus* Sull.]

FISSIDENTACEAE.

Fissidens Hedw.

- F. adiantoides** (L.) Hedw.—NORTHAMPTON, BUCKS and LANCASTER, *Muhlenberg*, *Porter*; HUNTINGDON, *Porter*; CAMBRIA, Cresson, *James* and *Porter*; WESTMORELAND, *James*; LEHIGH, *Rau*.
- F. bryoides** (L.) Hedw.—NORTHAMPTON, near Easton, *Garber*; PHILADELPHIA and CHESTER, *James*; ELK, *James*; LANCASTER, *Muhlenberg*.
- F. hyalinus** Wils. & Hook.—On a clay bank in a ravine. WASHINGTON, *Linn* and *Simonton*, September and October, 1892, 1894, 1898. This rare moss had only been collected in Ohio before.
- F. incurvus** Starke.—NORTHAMPTON, Easton, *Garber*; Bushkill Gap, PHILADELPHIA, *James*; LANCASTER, *Muhlenberg*; LEHIGH, *Rau*.
- F. minutulus** Sull.—NORTHAMPTON, Easton, *Garber* and *Porter*; MONROE, *James*; PHILADELPHIA, on the Wissahickon, *James*; CHESTER (Flora Cestrica); LANCASTER, *Muhlenberg*; Chestnut Hill, *Porter*; LEHIGH, *Rau*.
- F. osmundioides** (Sw.) Hedw.—PIKE and LEHIGH, *Rau*; MONROE, Water Gap, *James*; NORTHAMPTON, near Easton.
- F. subbasilaris** Hedw.—CARBON, Onoko Glen, *Rau*; NORTHAMPTON, Easton; LANCASTER, *Muhlenberg*; INDIANA and WESTMORELAND, *James*.
- F. taxifolius** (L.) Hedw.—NORTHAMPTON, Easton; PHILADELPHIA and CHESTER, *James*.

Octodiceras Brid.

- O. Julianum** (Savi) Brid.—In rocky pools and streams. LEHIGH, *Rau*; NORTHAMPTON, near Easton, *Porter*; PHILADELPHIA, *James*; LANCASTER and HUNTINGDON, *Porter*. [*Conomitrium Julianum* (Savi) Mont.]

Bryoxiphium Mitt.

- B. Norvegicum** (Brid.) Mitt. — LAWRENCE, Slippery Rock Creek, *Lesquereux*. [*Eustichia Norvegica* Brid.]

SELIGERIACEAE.**Seligera** Br. & Sch.

- S. calcarea** (Dicks.) Br. & Sch.—HUNTINGDON, Warrior's Ridge, *Porter*.
- S. recurvata** (Hedw.) Br. & Sch.—On limestone, in woods. NORTHAMPTON, Easton, *James* and *Porter*.

DITRICHACEAE.**Ceratodon** Brid.

- C. purpureus** (L.) Schimp.—NORTHAMPTON, PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Muhlenberg*. Common everywhere in the State.

Trichostomum Hedw.

- T. cylindricum** (Bruch) C. Muell.—At base of cliffs in woods, on moist rocks, usually sterile. HUNTINGDON, Alexandria, *Porter*; NORTHAMPTON, Bear Creek, *Wolle*; LEHIGH, Onoko Glen, *Rau*; CHESTER, Coventry, December 30, 1850, fruiting on old trunks, *James*. [*Didymodon cylindricus* Br. & Sch.]

Ditrichum Timm.

(*Leptotrichum* Hampe.)

- D. pallidum** (Schreb.) Hampe.—On the ground and margins of woods. LEHIGH and NORTHAMPTON, *Rau*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica); LANCASTER, Smithville, *Small*.

- D. tortile** (Schrad.) Lindb.—In dry soil. LEHIGH and NORTHAMPTON, *Ran*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Porter*.
- D. tortile pusillum** (Hedw.) Braithw.—PHILADELPHIA, Busleton and Holmesburg, *James*.
- D. vaginans** (Sulliv.) Hampe.—NORTHAMPTON, *Rau*; MCKEAN, *Burnett*.

POTTIACEAE.

Gymnostomum Hedw.

(*Pottia* Ehrh.)

- G. truncatula** (L.) Hedw.—Meadows among grass. PHILADELPHIA, Moyamensing, *James*. [*Pottia truncatula* (L.) Lindb.]

Barbula Hedw.

- B. convoluta** Hedw.—NORTHAMPTON, Easton, *Porter*; LYCOMING, *McMinn*; LAWRENCE, Enon Valley, *James*.
- B. fallax** Hedw.—NORTHUMBERLAND and MONROE, Analomink Creek, *James*; NORTHAMPTON, Bingen, *Rau*; Easton, *Porter*; BUCKS, Narrowsville, *James*.
- B. fallax brevifolia** Schultz.—MONROE, Analomink Creek, *James*.
- B. recurvifolia** Schultz. — CUMBERLAND, Canadaguinnet Creek, *Small*.
- B. rubella** (Hoffm.) Mitt.—CARBON, Rockdale, *Wolle*. [*Didymodon rubellus* Br. & Sch.]
- B. unguiculata** (Huds.) Hedw.—NORTHAMPTON, Bethlehem, *Rau*; Easton, *James*; PHILADELPHIA, DELAWARE and

B. cylindrica (Br. & Sch.) Sch. has been recorded as growing on old wood and twigs. CARBON and LEHIGH, *Rau*; CAMBRIA, Cresson, *James*, but it is probably a mistake.

CHESTER, *James*; LANCASTER, *Small*; YORK, HUNTINGDON and CENTRE, *Porter*; WESTMORELAND and BUTLER, *James*.

- B. unguiculata apiculata** Br. & Sch.—LANCASTER, *Muhlenberg*.
B. unguiculata lanceolata (Hedw.)—LANCASTER, *Muhlenberg*.
B. unguiculata stricta (Hedw.)—LANCASTER, *Muhlenberg*.

Tortula Hedw.

- T. humilis** (Hedw.) Brid.—MONROE, *James*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, Fairmount Park, DELAWARE and CHESTER, *James*; LANCASTER, river hills, *Porter*; NORTHUMBERLAND and CAMBRIA, *James*. [*Barbula humilis* Hedw.* *Barbula caespitosa* Schwaegr.]
T. muralis (L.) Hedw.—NORTHAMPTON, Easton, *Porter*; LANCASTER, Levan's Mill, *Eby*.
T. papillosa Wils.—PHILADELPHIA, Bustleton, and BLAIR, Tyone, *James*. [*Barbula papillosa* C. Muell.]
T. ruralis (L.) Ehrh.—BUCKS, Nockamixon cliffs, and NORTHUMBERLAND, *James*. [*Barbula ruralis* Hedw.]
T. tortuosa (L.) Ehrh.—NORTHAMPTON, *Garber*; PIKE, *Rau*; CARBON, Parryville, *Rau*; BUCKS, Nockamixon cliffs, *James*; LANCASTER, *Porter*; CAMBRIA, Cresson, *James*, [*Barbula tortuosa* Web. & Mohr.]

Desmatodon Brid.

- D. plinthobius** Sull. & Lesq.—On a limestone rock near Lancaster, *Porter*.
D. Porteri *James*.—On limestone rocks. NORTHAMPTON, College Hill, *Porter*; Bethlehem, *Rau*.

* Type locality Lancaster, *Muhlenberg*. Type specimens representing both names are preserved in the Hedwig herbarium at Geneva.

Didymodon Hedw.

- D. cylindricus** (Bruch) Br. & Sch.—On old trunks. MONROE, Delaware Water Gap, *Rau*; CARBON, Onoko Glen, *Austin*; LEHIGH, Bear Creek, *Wolle*; CHESTER, Coventry, *James*.
- D. riparius** (Aust.) Kindb.—MONROE, Pocono Plateau, *Austin*; LEHIGH and NORTHAMPTON, Bethlehem, *Rau*. [*Pottia riparia* Aust.]
- D. rubellus** (Hoffm.) Br. & Sch.—On wet rocks. Without locality, Sull. & Lesq. Musci Bor. Am. Exsicc. no. 106.

GRIMMIACEAE.**Grimmia** Ehrh.

- G. campestris** Burchell—On rocks. LANCASTER, Cedar Hill, *Porter*; BLAIR, Tyrone, *James*. [*G. leucophaea* Grev.]
- G. Donniana** Smith.—In crevices of rocks. NORTHAMPTON, Bushkill Gap, *James* and *Porter*. [*G. obtusa* Schwaegr.]
- G. Olneyi** Sull.—On exposed rocks on river shores. NORTHAMPTON, Easton, *Porter*; PHILADELPHIA and CHESTER, French Creek, *James*; LANCASTER, *Small*.
- G. pilifera** Beauv.—On exposed dry rocks. NORTHAMPTON, Bethlehem, *Rau*; DELAWARE and CHESTER, *James*; LANCASTER, *Muhlenberg*; Conewago, *Small*. Very common. [*G. Pennsylvanica* Schwaegr.]

Schistidium Brid.

- S. ambiguum** Sull.—On rocks. NORTHAMPTON, Easton, *James*. [*Grimmia ambigua* Sull.]
- S. apocarpum** (L.) Br. & Sch.—On rocks. LEHIGH, *Rau*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA and CHESTER, *James*; LANCASTER and CUMBERLAND, *Small*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*. [*Grimmia apocarpa* (L.) Hedw.]
- S. confertum** Br. & Sch.—On rocks. PHILADELPHIA, on the

Wissahickon and Pennypack Creeks, *James*; LANCASTER, Safe Harbor, *Porter*; WASHINGTON, *Linn* and *Simonton*. [*Grimmia conferta* Bruch.]

S. alpicola rivulare (Brid.)—Wahlb. On rocks. LANCASTER and CUMBERLAND, *Small*. [*Grimmia rivularis* Brid.]

Racomitrium Brid.

R. aciculare (L.) Brid. On wet rocks. CARBON, Mauch Chunk, *James*; Stony Creek (fertile), *Rau*; CAMBRIA, *James*. [*Grimmia acicularis* C. Muell.]

R. microcarpum (Schrad.) Brid.—On wet rocks. CARBON, Stony Creek, *Rau*; PHILADELPHIA, Fairmount Park, *James*. [*Grimmia microcarpa* (Gmel.) Lindb. *R. Sudeticum* Br. & Sch.]

Glyphomitrium Brid.

[*Ptychomitrium* Br. & Sch.]

G. incurvum (Schwaegr.) E. G. Britton, n. comb.—On rocks and stones. NORTHAMPTON, Easton, *Porter*; Bethlehem, *Rau*; PHILADELPHIA and DELAWARE, *James*; LANCASTER, Conewago, *Small*. [*Brachystelium incurvum* (Schwaegr.) C. Muell.]

Hedwigia Ehrh.

H. albicans (Web.) Lindb.—On exposed rocks. NORTHAMPTON, *Porter*; PHILADELPHIA, *James*; DELAWARE (Smith's Catalogue); CHESTER, (Flora Cestrica); LANCASTER, *Porter*. Common throughout the State. [*H. ciliata* Ehrh.]

H. albicans leucophaea Schimp.—DAUPHIN, Peter's Mountain, *C. H. Small*; HUNTINGDON, Stone Creek, *Porter*; WESTMORELAND, *James*.

ORTHOTRICHACEAE.

Anoetangium Hedw.*

[*Amphoridium* Schimp.]

- A. Lapponicum** Hedw.—In crevices of shaded rocks. MONROE, Analominck Creek, *James*; PIKE and CARBON, *Rau*; NORTHAMPTON, Easton, and BUCKS, Narrowsville, *Porter*; PHILADELPHIA, on the Wissahickon, *James*; FRANKLIN, Mercersburg, and HUNTINGDON, *Porter*.
- A. Mougeottii** (Schimp.) Lindb.—On shaded rocks. MONROE, Delaware Water Gap, *James*, *Garber*; PIKE and CARBON, *Rau*; BUCKS, Nockamixon Cliffs, *Porter*; PHILADELPHIA, Fairmount Park, *James*.

Drummondia Hook.

- D. clavellata** (L.) Hook.—On trees. NORTHAMPTON, PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Small*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.

Weissia Ehrh.

[*Ulotia* Mohr.]

- W. Americana** (Beauv.) Lindb.—On dry rocks. NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA and CHESTER, *James*; LANCASTER and HUNTINGDON, *Porter*; PIKE and LEHIGH, *Rau*; LEBANON, Penryn, *Small*; CAMBRIA, Creson, *James*. [*Ulotia Hutchinsiae* (Beauv.) Schimp.]
- W. coarctata** (Beauv.) Lindb.—On trees. MONROE, Mt. Pocono, *James*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica); LANCASTER, Conewago, *Small*; CENTRE, Bear Meadows. *Porter*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*. [*Ulotia Ludwigii* (Beauv.) Brid.]

* *Anoetangium Peckii* Sull., credited to MONROE, Delaware Water Gap, *Austin*, proves to be a sterile form of *Mollia aeruginosa*, and *A. Rawii* Aust., CARBON, *Rau*, is a depauperate sterile form of *Dicranum longifolium*.

W. ulophylla Ehrh.—On trees. MONROE, Tobyhanna, *Garber*; Pocono, *James*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; CHESTER (Flora Cestrica); LANCASTER, Chickies, LEBANON and CENTRE, Bear Meadows, *Porter*; CLEARFIELD, *James*. [*Ulota crispa* Brid.]

W. ulophylla crispula (Bruch) Hammar.—On trees. PIKE, *Rau*; MONROE, Pocono, and PHILADELPHIA, *James*; MCKEAN, *Burnett*.

Orthotrichum Hedw.

O. cupulatum Hoffm.—On rocks. NORTHAMPTON, Easton, and BUCKS, Narrowsville, *James*.

O. cupulatum Peckii (Aust.) Sull.—On dry limestone rocks. NORTHAMPTON, Easton, *Porter*.

O. Porteri Aust.—On dry limestone rocks. NORTHAMPTON and LANCASTER, *Porter*; CAMBRIA, Cresson, *James*. [*O. cupulatum Porteri* (Aust.) Sull.]

O. obtusifolium Schrad.—MONROE (on *Populus candicans*) *Mrs. Britton*; NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA, on Lombardy poplars below Bustleton, *James*.

O. Ohioense Sull. & Lesq.—LEHIGH and NORTHAMPTON, Bethlehem, *Rau*.

O. Ohioense citrinum (Aust.) Lesq. & James.—On trees. NORTHAMPTON, Bethlehem, *Rau*; LANCASTER, *Porter*; WESTMORELAND, *James*.

O. pusillum Mitt.—On trees, poplars mostly. PHILADELPHIA, Kingsessing, Fairmount Park, Bustleton, *James*. [*O. psilocarpum* James.]

O. pumilum Americanum Venturi.—On trees. NORTHAMPTON, *Porter*; PHILADELPHIA, *James*; LANCASTER, *Porter*.

O. Schimperi Hammar.—On trees. LANCASTER, Safe Harbor, Conewago and Tucquan, *Small*; WASHINGTON, *Linn* and *Simonton*.

- O. sordidum** Sull. & Lesq.—On trees. MONROE, Mt. Pocono, *Garber*; LANCASTER, Conewago, *Small*.
- O. Braunii** Br. & Sch.—On apple trees. LEHIGH and NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, Chestnut Hill, *Porter*; NORTHUMBERLAND, *James*; MCKEAN, *Burnett*. [*A. strangulatum* Sull.]
- O. striatum** (L.) Hedw.—On trees. MONROE, Pocono, and BUCKS, Narrowsville, *James*. [*O. leiocarpum* Br. & Sch.]

ENCALYPTACEAE.

Leersia Hedw.

[*Encalypta* Schreb.]

- L. contorta** (Wolf) Lindb.—On limestone rocks. MONROE, *James*; LEHIGH, *Rau*; NORTHAMPTON, Bethlehem; CAMBRIA, Cresson, *James*. Sterile. [*Encalypta streptocarpa* Hedw.]

GEORGIACEAE.

Georgia Ehrh.

[*Tetraphis* Hedw.]

- G. pellucida** (L.) Rabenh.—On rotten wood. PIKE, LEHIGH and NORTHAMPTON, *Rau*; CHESTER; LANCASTER, *Small*; FRANKLIN; MONROE, Mt. Pocono and Tobyhanna, Buckhill Falls, *Small*; MCKEAN, *Burnett*.

DISCELIACEAE.

Discelium Brid.

- D. nudum** Brid.—On clayey ground. NORTHAMPTON, Bethlehem, *Rau*, Bingen, *F. Wolle*.

FUNARIACEAE.

Physcomitrium Brid.

- P. immersum** Sull.—Old pastures. PHILADELPHIA, Moyamensing, *James*; LANCASTER, *Muhlenberg*; DAUPHIN, Harrisburg, *Small*.

P. turbinatum (Michx.) Brid.—In fields among tufts of grass. LEHIGH, *Rau*; NORTHAMPTON, Easton; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Muhlenberg*, *Small*. MCKEAN, Bradford, *Burnett*. Not rare. [*Gymnostomum pyriforme* Muhl.]

Aphanorhegma Sull.*

A. serratum (Hook. & Wils.) Sull.—Damp cultivated ground. LEHIGH, *Rau*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER and FRANKLIN, Mercersburg, *Porter*. MCKEAN, on alluvial deposits, Bennett Brook and in ashes near railroad, Bradford, *Burnett*.

Funaria Schreb.

F. Americana Lindb.—On the ground, BUCKS, Narrowsville, *James*; LANCASTER, *Muhlenberg*.

F. flavicans Michx.—On the ground. LEHIGH, *Rau*; NORTHAMPTON, Easton, *Small*; PHILADELPHIA, *James*; LANCASTER, *Muhlenberg*, *Small*; LAWRENCE, *James*.

F. hygrometrica (L.) Sibth.—Bare places on the ground. NORTHAMPTON, BUCKS, PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Small*. MCKEAN, *Burnett*. Very common.

F. hygrometrica calvescens Schimp.—CARBON, *Rau*.

F. hygrometrica patula Br. & Sch.—NORTHAMPTON, Bethlehem, *Rau*.

BRYACEAE.

Leptobryum Wils.

L. pyriforme (L.) Wils.—On damp ground and old mortar of walls. NORTHAMPTON, Easton and Bethlehem; PHILADEL-

**Aphanorhegma serratum* ♀ × *Physcomitrium turbinatum* ♂. (See Bull. Torr. Bot. Club, 22: 65. 1895.) Mr. Burnett collected this interesting hybrid at Tuna Valley, about three miles north of Bradford, McKean county, on ground near the Erie Railroad tracks, where old ties had been burned, on December 12th, 1896.

PHIA, Wissahickon Turnpike, *James*; CHESTER, New Garden, *Michener*; LANCASTER, *Muhlenberg*, in herb., *Porter*; CAMBRIA, Chast Creek, *James*.

Bryum L.

- B. albicans** (Wahl.) Brid.—Wet, springy ground. LEHIGH and NORTHAMPTON, *Rau*; PHILADELPHIA, Fairmount Park and Laurel Hill, *James*; CHESTER, New Garden (fruiting), *Michener*; MCKEAN (fruiting), *Burnett*.
- B. annotinum** Hedw.—On gravelly soil. LEHIGH, *Rau*; BEAVER, *Lesquereux*.
- B. argenteum** L.—On dry soil. Common everywhere.
- B. atropurpureum** Wahl.—Old fields. NORTHAMPTON, Easton, *James*; Bethlehem, *Fiot*; PHILADELPHIA, Fairmount Park, *James*; YORK, *Porter*.
- B. bimum** Schreb.—Damp soil. NORTHAMPTON, Bethlehem, *James*; BUCKS, *Rau*; LANCASTER, *Small*; CAMBRIA and INDIANA, *James*; MCKEAN, *Burnett*.
- B. caespiticium** L.—Dry soil and old walls. NORTHAMPTON, *Easton*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Muhlenberg*. Very common.
- B. capillare** L.—On the ground and on shaded rocks. MONROE, Cresco, *Porter*; Delaware Water Gap, *Porter*; CARBON, Mauch Chunk, *James*; NORTHAMPTON; BUCKS, Narrowsville *Porter*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*; PHILADELPHIA and CHESTER, Chester Valley (fruiting), *James*; YORK, Wrightsville, *Small*.
- B. cirrhatum** Hoppe & Hornsch.—On gravelly soil. LANCASTER, Safe Harbor, *James*; ELK, McMinn.
- B. erudum** Schreb.—On the ground. LEHIGH, *Rau*; BUCKS, Narrowsville, *Porter*; LANCASTER, *Muhlenberg*, *Porter*.
- B. cyclophyllum** (Schwaegr.) Br. & Sch.—Wet places. MONROE, Tobyhanna Mills, *James*. Very rare.

- B. elongatum** Dicks.—On rocks. MCKEAN, Bradford, *Burnett*.
- B. intermedium** Brid.—Wet places. MONROE, Mt. Pocono, *James*; NORTHAMPTON, Bethlehem and Easton, *James*; BUCKS, Narrowsville, *Porter*; LANCASTER, Safe Harbor, and CAMBRIA, *James*.
- B. pulchellum** Hedw.—On gravelly soil. MONROE, Tobyhanna, *James*; LEHIGH, *Rau*; NORTHAMPTON, *Fiot*; BUCKS, PHILADELPHIA and CHESTER, *James*; LANCASTER, *Muhlenberg*; MCKEAN, *Burnett*. [*B. Lescurianum* Sull.]
- B. Muhlenbeckii** Br. & Sch.—Damp situations. CARBON, *Rau*.
- B. nutans** Schreb.—Wet places. NORTHAMPTON, Bethlehem, *Fiot*; Easton, *James*; PHILADELPHIA, Manayunk, *James*; LANCASTER, Conewago, on trap rock, *Small*; NORTHUMBERLAND, *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- B. proliferum** (L.) Sibth.—In woods about the roots of trees. PIKE, *Garber*; MONROE, Pocono Mountain, *Small*; NORTHAMPTON, PHILADELPHIA, Byberry, DELAWARE and CHESTER, *James*; LANCASTER, *Muhlenberg*, *Porter*; LUZERNE, Lily Lake, *Small*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*. Common, but seldom fruiting. [*B. roseum* Schreb.]
- B. torquescens** Br. & Sch.—On the ground. BUCKS, Narrowsville, and CAMBRIA, Cresson, *James*.
- B. ventricosum** Dicks.—Wet rocks. MONROE, Water Gap, *Garber*; BUCKS, *Rau*, Narrowsville, *James*; LANCASTER, *Muhlenberg*; CAMBRIA, Cresson, *James*. [*B. pseudotriquetrum*, *Schwaegr.*]

MNIACEAE.

Astrophyllum Neck.

[*Mnium* L., in part.]

- A. ciliare** (Grev.) Lindb.—Damp situations. MONROE, Delaware Water Gap; LANCASTER, Smithville and Mountain

Island, *Small*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.

- A. cinclidioides** (Blytt) Lindb.—In moist places. MCKEAN, West Branch, *Burnett*. [*Mnium cinclidioides* (Blytt) Huebn.]
- A. cuspidatum** (L.) Lindb.—In swamps and on wet rocks. NORTHAMPTON, PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Porter*. Common. [*Mnium affine* Bland.]
- A. cuspidatum elatum** (Br. & Sch.)—CAMBRIA, Cresson, *James*.
- A. cuspidatum rugicum** Laur.—NORTHAMPTON, Easton, MONROE, Water Gap, *James*.
- A. Drummondii** (Br. & Sch.) Lindb.—Damp places. LYCOMING, near Williamsport, *McMinn*.
- A. hornum** (L.) Lindb.—Damp places. PIKE, CARBON and LEHIGH, *Rau*; MONROE, Mt. Pocono, *E. G. Britton*; Buckhill Falls, *Garber*; NORTHAMPTON, Easton; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Porter*; CAMBRIA, *James*.
- A. lycopodioides** (Hook.) Lindb.—Wet places. PIKE, LEHIGH and NORTHAMPTON, *Rau*; LANCASTER, Mill Creek, *Porter*; BLAIR, *C. E. Smith*; ELK, *McMinn*.
- A. marginatum** (Dicks.) Lindb.—Damp situations. MONROE and NORTHAMPTON, *Porter*; BUCKS, *Rau*; PHILADELPHIA, *James*; LANCASTER and BLAIR, *Porter*; CAMBRIA, *James*; ELK, *McMinn*; WASHINGTON, *Linn* and *Simonton*. [*Mnium serratum* Laich.]
- A. medium** (Br. & Sch.) Lindb.—In very wet soil, bordering streams or rivulets, on stones subject to overflow, and on logs much decayed and partially immersed. MONROE, *James*; MCKEAN, *Burnett*.
- A. orthorrhynchum** (Br. & Sch.) Lindb.—MONROE, *James*; NORTHAMPTON, *Easton*; BLAIR, *Porter*.

- A. punctatum** (L.) Lindb.—Wet places. PIKE, MONROE, CARBON, NORTHAMPTON and LEHIGH, *Rau*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, FRANKLIN and HUNTINGDON, *Porter*; ELK, *McMinn*.
- A. punctatum elatum** (Schimp.)—MONROE, Delaware Water Gap, *E. G. Britton*; LANCASTER, Mt. Hope, *Small*; NORTHAMPTON, Easton, *Porter*; MCKEAN, Bradford, *Burnett*.
- A. riparium** (Mitt.) Lindb.—Along rivers. Pennsylvania, *Muhlenberg*.
- A. rostratum** (Schrad.) Lindb.—Wet rocks. LEHIGH, *Rau*; BUCKS, Narrowsville, LYCOMING, *McMinn*; FRANKLIN and CAMBRIA, *James*.
- A. stellare** (Reichard) Lindb.—Damp places. MONROE, *James*; NORTHAMPTON, *Rau* and *Porter*; BUCKS, Narrowsville, *James*; PHILADELPHIA and CHESTER, *James*; MCKEAN, Bradford, *Burnett*, usually sterile.
- A. sylvaticum** Lindb.—Damp places. NORTHAMPTON, Easton, PHILADELPHIA and CHESTER, *James*; LANCASTER, *Muhlenberg*, *Small*; MCKEAN, *Burnett*. Very common. [*Mnium cuspidatum* Hedw.]

Arrhenopterum Hedw.

- A. heterostichum** Hedw.—In shaded places. NORTHAMPTON, PHILADELPHIA and CHESTER, *James*; Lehigh, *Rau*; LANCASTER, Pleasant Grove, *Carter*; WASHINGTON, *Linn* and *Simonton*. Type locality, Lancaster, *Muhlenberg*. [*Aulacomnium heterostichum* (Brid.) Br. & Sch.]

Mnium Dill.

[*Aulacomnium* Schwaegr.]

- M. palustre** L.—Swampy places. MONROE, Tobyhanna Mills and Buckhill Falls, *Small*; NORTHAMPTON, *Rau*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, Safe Harbor; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*. [*Aulacomnium palustre* (L.) Schwaegr.]

MEESIACEAE.

Meesia Hedw.

- M. triquetra** (L.) Aongstr.—NORTHAMPTON, *Rau*. [*M. tristicha* Funck.]

BARTRAMIACEAE.

Bartramia Hedw.

- B. ithyphylla** Brid.—In shaded places. FAYETTE, Layton's, *S. W. Knipe*. Rare.
- B. Oederi** (Gunn.) Sw.—Rocky banks. PIKE and LEHIGH, *Rau*; LANCASTER, *Muhlenberg*; MONROE, Water Gap, and BUCKS, Nockamixon Cliffs, *James*. [*B. grandiflora* Schwaegr.]
- B. pomiformis** (L.) Hedw.—On moist banks. MONROE and NORTHAMPTON, *Porter*; PIKE, *Rau*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER and FRANKLIN, *Porter*. Common.
- B. pomiformis crispa** (Sw.) Br. & Sch.—On shaded ground. MCKEAN, *Burnett*; PIKE, *Rau*; MONROE, Delaware Water Gap, *Austin*.

Philonotis Brid.

- P. calcarea** Schimp.—HUNTINGDON, Warrior's Ridge, *Porter*.
- P. fontana** (L.) Brid.—MONROE, Delaware Water Gap, *James*; NORTHAMPTON, *Rau*; BUCKS, Nockamixon Cliffs, PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Small*; LYCOMING, *Porter*.
- P. Marchica** (Willd.) Brid.—NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA, *James*; LANCASTER, *Muhlenberg*; Slippery Rock Creek, *Lesquereux*. [*Bartramia Muhlenbergii* Schwaegr.]
- P. radicalis** (Beauv.) Brid.—LEHIGH, Rockdale, and BUCKS, Nockamixon Cliffs, *Wolle*.

TIMMIACEAE.

Timmia Hedw.

- T. cucullata** Michx.—NORTHAMPTON, *Porter* and *Rau*; LANCASTER, *Porter*; EASTON, *Garber* and *Porter*; MCKEAN, *Burnett*. [*T. megapolitana* Hedw.]

POLYTRICHACEAE.

Catharinea Ehrh.[*Atrichum* Beauv.]

- C. angustata** Brid.—In woods. NORTHAMPTON, *Porter*; PHILADELPHIA and CHESTER, *James*; LANCASTER, *Small*; WASHINGTON, *Linn* and *Simonton*. Common throughout.
- C. crispa** James.—On clay. MONROE, Pocono Mountain, *E. G. Britton*.
- C. undulata** (L.) Web. & Mohr.—In woods. NORTHAMPTON, PHILADELPHIA and CHESTER, *James*; LANCASTER.

Polytrichum L.

- P. commune** L.—In open woods. Common everywhere in the State.
- P. juniperinum** Willd.—LEHIGH, *Rau*; NORTHAMPTON, *Porter*; PHILADELPHIA, *James*; CHESTER (Flora Cestrica); LANCASTER, Welsh Mountains, *Small*; LYCOMING, *McMinn*; MCKEAN, *Burnett*; WASHINGTON, *Linn* and *Simonton*.
- P. Ohioense** Ren. & Card.—NORTHAMPTON, *Porter*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER and HUNTINGDON, *Porter*; MCKEAN, *Burnett*. Not rare. [*P. formosum* Sull.]
- P. piliferum** Schreb.—MONROE, Mt. Pocono and Water Gap, *Knipe*; MCKEAN, *Burnett*; PHILADELPHIA and CHESTER, *James*; LANCASTER, *Porter*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*. [*P. Pennsylvanicum* Hedw. Type locality, Lancaster, *Muhlenberg*:]

Pogonatum Beauv.

- P. alpinum** (L.) Roehl.—On rocks or soil. MONROE, Buckhill Falls and Canadensis, *Porter*; CHESTER, Chester Valley, *James*.
- P. tenue** Menz.—On the ground, in bare places. NORTHAMPTON; *Porter*; PHILADELPHIA and CHESTER, *James*; LANCASTER and FRANKLIN, *Porter*. Common elsewhere.

BUXBAUMIACEAE.**Buxbaumia** Haller.

- B. aphylla** Haller.—On the ground in open woods. MONROE, Mount Pocono, *Porter*; Water Gap, *Knipe*; NORTHAMPTON, Bushkill Gap, *Garber*; LEHIGH, *Rau*; HUNTINGDON, *Boecking*; CAMERON, *Burnett*.

Webera Ehrh.

- W. sessilis** (Schmidt) Lindb.—On the ground in dry woods. LEHIGH, *Rau*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; DELAWARE and CHESTER, *James*; LANCASTER, *Muhlenberg*; Chickies, *Porter*; WAYNE, *Garber*; MCKEAN, *Burnett*. [*Diphyscium foliosum* Mohr.]

FONTINALACEAE.**Dichelyma** Myrin.

- D. capillaceum** (Dicks.) Br. & Sch.—On bushes subject to overflow of streams. MONROE, Pocono and Tobyhanna, *Small*; LEHIGH, *Rau*; CHESTER, Chester Valley, *James*; MONROE.
- D. pallescens** Br. & Sch.—Attached to the bases of shrubs along water courses. MONROE, Tobyhanna Mills, *James*; MCKEAN, Bradford, *Burnett*.

Fontinalis L.

- F. antipyretica gigantea** Sull.—In rivulets and pools. PIKE, *Rau*; MONROE, Pocono, *Porter*; NORTHAMPTON, Wind Gap, *Green*; PHILADELPHIA, *James*; DELAWARE, *Smith*; LANCASTER, Georgetown, *Porter*; BLAIR and CAMBRIA, *James*; MCKEAN, *Burnett*.

- F. biformis** Sull.—In streams. PIKE, *Rau*; LANCASTER, *Small*; MCKEAN, *Burnett*.
- F. Dalecarlica** Br. & Sch.—Attached to stones in running water. PIKE, CARBON and LEHIGH, *Rau*; MONROE, Mt. Pocono, PHILADELPHIA, DELAWARE and CHESTER, Chester Valley, *James*; LANCASTER, Martic Forge, *Porter*, Mt. Hope, *Small*; CHESTER, Bear Meadows, *Porter*.
- F. Lescurii** Sull.—In rivulets. PIKE, *Rau*; MONROE, Mt. Pocono and the Water Gap, *James*; HUNTINGDON, *Porter*; MCKEAN, *Burnett*.
- F. Novae-Angliae** Sull.—In springs. NORTHAMPTON and PIKE, *Rau*; HUNTINGDON, Spruce Creek, *Porter*.

CRYPHAEACEAE.

Leucodon Schwaegr.

- L. brachypus** Brid.—On the bark of trees. PIKE, *Rau*; MONROE, Pocono, *Porter*; CHESTER, Coventry, *James*; CAMBRIA, Cresson, *Porter* and *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- L. julaceus** (Hedw.) Sull.—On trunks of trees. MONROE, Mt. Pocono, *Porter*; NORTHAMPTON, Bethlehem, *Rau*, Easton, *Porter*; PHILADELPHIA, Bartram's Garden, Fairmount Park, Manayunk, Byberry, *James*; DELAWARE, *Smith*; CHESTER (Flora Cestrica); LANCASTER, Cedar Hill, *Porter*; CAMBRIA and INDIANA, *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- L. julaceus stolonifera** Aust.—LANCASTER, Octorara Creek, *Small*.

NECKERACEAE.

Homalia Brid.

- H. Jamesii** Sch.—On rocks. PIKE, *Rau*. Very rare.

Eleutera Beauv.

[*Neckera* Hedw.]

- E. pennata** (L.) Stuntz.—On trunks of trees. MONROE, Pocono, *E. G. Britton*; PIKE and LEHIGH, *Rau*; PHILADEL-

PHIA, Fairmount Park ; CHESTER (Flora Cestricea) ; LANCASTER, Mount Hope, FRANKLIN, Mercersburg, and CAMBRIA, Cresson, *Porter* ; MCKEAN, *Burnett*. Not rare in the mountains.

Forsstromia Lindb.

[*Leptodon* Mohr.]

- F. trichomitria** (Hedw.) Lindb.—On trunks of trees and occasionally on rocks. PIKE, *Rau*; MONROE, Pocono and Water Gap, *James*; NORTHAMPTON, *Rau*; PHILADELPHIA, Fairmount Park and Byberry, *James*; Delaware, *Smith*; CHESTER (Flora Cestricea); LANCASTER, Tucquan, *Small*; MCKEAN, *Burnett*.

FABRONIACEAE.

Fabronia Raddi.

- F. octoblepharis** (Schleich.) Schwaegr.—On trees. NORTHAMPTON, Bethlehem, *Wolle*; PHILADELPHIA, Bustleton, *James*.
- F. Ravenellii** Sull.—On trees. NORTHUMBERLAND and PHILADELPHIA, above Manayunk, *James*; FRANKLIN, Mercersburg, *Porter*.

Anacamptodon Brid.

- A. splachnoides** (Fröl.) Brid.—On trunks of trees and old stumps, around knot-holes full of water, at base of old trees and fallen logs, especially beech; also on decaying shelves of *Polyporus*. LEHIGH and NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA, Wissahickon, *James*; INDIANA, *James*; LANCASTER, *Muhlenberg*; MCKEAN, Bradford, *Burnett*; WASHINGTON, *Linn* and *Simonton*. [*Campylodontium hypnoides* Schwaegr.]

LESKEACEAE.

Myurella Br. & Sch.

- M. Careyana** Sull.—In crevices of rocks. PIKE, CARBON and LEHIGH, *Rau*; MONROE, Analomink Creek, *James*; NORTHAMPTON, Easton, BUCKS, Narrowsville, LANCASTER, Cedar

Hill, FRANKLIN, Mercersburg, and HUNTINGDON, Alexandria, *Porter*.

Thelia Sull.

- T. asprella** (Schimp.) Sull.—On the roots of trees. MONROE, Tobyhanna Mills, *James*; NORTHAMPTON, Easton Cemetery, *Porter*; PHILADELPHIA, Wissahickon, DELAWARE and CHESTER, Chester Valley, *James*; LANCASTER, Conewago and Mount Hope, *Small*; YORK, *Small*; MCKEAN, Bradford, *Burnett*.
- T. hirtella** (Hedw.) Sull.—On the bark of trees. NORTHAMPTON, Easton, *Porter*; BUCKS, Morrisville, PHILADELPHIA, Fairmount Park, and DELAWARE, Radnor, *James*; LANCASTER, *Porter*; WESTMORELAND, *James*.
- T. Lescurii** Sull.—On flat rocks. MONROE, Water Gap, *Austin*; BUCKS, *Rau*.

Fabroleskea Best.

- F. Austini** (Sull.) Best.—On *Juniperus Virginianus*. LANCASTER, Dillerville Swamp, *Small*; MONROE, Water Gap, *Austin*; NORTHAMPTON, Bethlehem, *Rau* and *Wolle*. [*Leskea Austini* Sull.]

Leskea Hedw.

- L. denticulata** Sull.—On dry rocks and trunks of trees. MONROE, Analomink Creek, *James*; LEHIGH and NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA and DELAWARE, *James*; CHESTER, New Garden, *Michener*; CAMBRIA, Cresson, *James*.
- L. gracilescens** Hedw.—On tree trunks. LANCASTER, Lancaster, *Muhlenberg*, *Small*, Safe Harbor, *Small*; WASHINGTON, *Linn* and *Simonton*.
- L. nervosa** (Brid.) Myrin.—On trees, especially on the base of old maples. MCKEAN, Bradford, *Burnett*.
- L. obscura** Hedw.—At the base of trees and on wet ground. NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA, *Wissa-*

hickon, and CHESTER, Chester Valley, *James*; LANCASTER, Peach Bottom, *Porter*; BLAIR, Tyrone, *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.

- L. polycarpa** Ehrh.—On roots and trunks of trees. NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; MONTGOMERY and PHILADELPHIA, Gray's Ferry, *James*; LANCASTER, Chiquesalunga Creek and Conestoga Creek, *Small*.

Anomodon Hook. & Tayl.

- A. apiculatus** Br. & Sch.—On rotten bark. MONROE, Buckhill Falls, *Small*; LANCASTER, Chiquesalunga Creek, *Small*; MCKEAN, *Burnett*.
- A. attenuatus** (Schreb.) Huebn.—On rocks and roots of trees. NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, Wissahickon, DELAWARE and CHESTER, *James*; LANCASTER, *Small*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- A. minor** (Beauv.) Fürn.—On trunks of trees. NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, Byberry, *James*; LANCASTER, *Muhlenberg*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*; CLEARFIELD, Phillipsburg, and CAMBRIA, *James*. [*A. obtusifolius* Br. & Sch.]
- A. rostratus** (Hedw.) Schimp.—At the base of trees. MONROE, Buckhill Falls, *Small*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA and CHESTER, *James*; LANCASTER, Mount Hope, *Small*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- A. tristis** (Cesati) Sull.—On trunks of trees. MONROE, Analomink Creek, *James*; Northampton, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Porter*; CLEARFIELD, *James*; MCKEAN, *Burnett*. [*Leskea tristis* Cesati.]
- A. viticulosus** (L.) Hook. & Tayl.—On shaded rocks. BUCKS, Narrowsville, *James*; LANCASTER, on the Tucquan, *Small*; FRANKLIN, Mercersburg, *Porter*.

Pterigynandrum Hedw.

P. filiforme Hedw.—On rocks and roots of trees. MONROE, Water Gap; CARBON, *Rau*.

Thuidium Br. & Sch.

T. abietinum (L.) Br. & Sch.—On rocks. NORTHAMPTON, on a cliff above, Easton, *Porter*. Very rare.

T. delicatulum (L.) Mitt.—On the ground and roots of trees. PIKE and NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA, DELAWARE and CHESTER, *James*; MCKEAN, *Burnett*. [*Hypnum tamariscinum* Sull. & Lesq.]

T. microphyllum (Sw.) Jaeg. & Sauerb.—NORTHAMPTON, *Rau*. [*H. gracile* Br. & Sch.]

T. minutulum (Hedw.) Br. & Sch.—Old logs and about the roots of trees. MONROE and CARBON, Mauch Chunk, *James*; NORTHAMPTON, *Rau*; PHILADELPHIA, Wissahickon, DELAWARE and CHESTER, Chester Valley, *James*; HUNTINGDON, *Porter*; BLAIR, Burgoon's Gap, *Garber*; MCKEAN, *Burnett*.

T. paludosum (Sull.) *Rau* & Hervey.—Swamps and low grounds. NORTHAMPTON, Sedersville, *Rau*; BUCKS, Morrisville, *James*; PHILADELPHIA, Tacony Creek, *James*; LANCASTER, Dillerville Swamp, *Porter*.

T. pygmaeum Br. & Sch.—On damp stones and rocks. LEHIGH, *Rau*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, *James*.

T. recognitum (Hedw.) Lindb.—On shaded rocks and banks, MONROE, Pocono, *James*; NORTHAMPTON, Bethlehem, *Rau*. Easton, *Porter*; PHILADELPHIA, *James*; LANCASTER, *Small*; CUMBERLAND, Chambersburg, *Porter*. [*H. delicatulum* Br. & Sch.]

T. scitum (Beauv.) Aust.—At the base of trees. NORTHAMPTON, Bethlehem, PHILADELPHIA and CHESTER, New Garden, *James*.

- T. scitum aestivale** Aust.—PIKE, *Rau*; MONROE, Water Gap, *Austin*; BLAIR, *Porter*; MCKEAN, *Burnett*.
- T. Virginianum** (Brid.) Lindb.—On decayed logs. MONROE, Buckhill Falls, PHILADELPHIA, Fairmount Park, *James*; BLAIR, Bald Eagle Valley, *Porter*; CAMBRIA, Cresson, *James*; NORTHAMPTON, *Rau*; LANCASTER, *Muhlenberg*, New Texas, *Small*. [*H. gracile* var. *Lancastriense* Sull. & Lesq.]

HYPNACEAE.

Isothecieae.

Homalothecium Br. & Sch.

- H. subcapillatum** (Hedw.) Sull.—On trunks of trees. NORTHAMPTON, Easton Cemetery, *Porter*; PHILADELPHIA, Bartram's Garden, Bustleton, and CHESTER, Warwick Furnace, *James*; LANCASTER, Octorara Creek, *Small*, Cedar Hill, *Porter*; ELK, *McMinn*. [*Pterigonium subcapillatum* Muhl.]

Platygyrium Br. & Sch.

- P. repens** Br. & Sch.—On trunks of trees, often sterile and gemmiferous. MONROE, Cresco, *James*; NORTHAMPTON, *Rau*; PHILADELPHIA, Bartram's Garden, Wissahickon, and CHESTER, *James*; LANCASTER, *Porter*; INDIANA and BEAVER, *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, Bradford, *Burnett*. [*Entodon palatinus* (Neck.) Lindb.]

Pylaisia Br. & Sch.

- P. intricata** (Hedw.) Card.—On tree trunks. PIKE, Elbow Swamp, and CARBON, *Rau*; LANCASTER, Mount Hope, *Small*; MCKEAN, *Burnett*. [*P. velutina* Br. & Sch.]
- P. polyantha** (Schreb.) Br. & Sch.—On tree trunks. MCKEAN, *Burnett*.
- P. Schimperii** Cardot.—On trees. NORTHAMPTON, Bethlehem, *Rau*; EASTON, *Porter*; PHILADELPHIA, DELAWARE and CHESTER, Coventry, *James*; LANCASTER, *Small*;

CLEARFIELD, Phillipsburg, and INDIANA, Blairsville, *James*; ELK, *McMinn*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*. [*P. intricata* Schimp.]

Entodon C. Muell.

[*Cylindrothecium* Br. & Sch.]

- E. brevisetus** (Hook. & Wils.) Jaeg. & Sauerb.—In dry places. PHILADELPHIA, Bingham's, *James*; CHESTER, New Garden, *Michener*; ELK, Bennett's Branch, *McMinn*; MCKEAN, *Burnett*.
- E. compressus** C. Muell.—On bases or roots of trees. NORTHAMPTON, Easton Cemetery, and PHILADELPHIA, Byberry, *James*; CHESTER, New Garden, *Michener*. [*C. compressum* Br. & Sch.]
- E. cladorhizans** (Hedw.) C. Muell.—On old logs, roots of trees and shaded shingle-roofs. LEHIGH, and NORTHAMPTON and CHESTER, Coventry, *James*; LANCASTER, Mount Hope, *Small*; INDIANA and BEAVER, *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- E. seductrix** (Hedw.) C. Muell.—On wet ground, rocks and roots of trees. LEHIGH and NORTHAMPTON, Bethlehem, *Rau*, Easton, *Porter*; BUCKS, Narrowsville, *James*; MONTGOMERY, PHILADELPHIA, Germantown, DELAWARE and CHESTER, Coventry, *James*; LANCASTER, *Porter*, Safe Harbor, *Small*; INDIANA, *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- E. Sullivantii** C. Muell.—On damp ground. PHILADELPHIA, along the Schuylkill, *James*. Rare.

Climacium Web. & Mohr.

- C. Americanum** Brid.—On wet, shaded ground. MONROE, Water Gap, *Porter*; NORTHAMPTON, Bingen, *Rau*; PHILADELPHIA, *James*; DELAWARE, *Smith*; LANCASTER, Welsh Mountains, Conewago and Mount Hope, *Small*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*. Very common, but rarely fruiting.

- C. dendroides** (L.) Web. & Mohr.—CHESTER, *Darlington*; DAUPHIN, Harrisburg, *Small*.
- C. Kindbergii** (R. & C.) Grout. In water or low grounds. LANCASTER and LEBANON, Mount Hope and Penryn, *Small*; LUZERNE, Lily Lake, *Small*; MCKEAN, Bradford, *Burnett*. [*C. Americanum* var. *fluitans* Aust.]

Brachythecieae.

Camptothecium Schimp.

- C. nitens** (Schreb.) Schimp.—In bogs. NORTHAMPTON, Bingen, *Rau*.

Prachythecium Schimp.

- B. acuminatum** (Hedw.) Rau. & Hervey.—On damp ground and logs. NORTHAMPTON, Lime Ridge, *Rau*; PHILADELPHIA, Bingham's, and CHESTER, Coventry, *James*; LANCASTER, Conewago, *Small*; FRANKLIN, Mercersburg, *Porter*; CLEARFIELD, Phillipsburg, and WESTMORELAND, Greensburg, *James*.
- B. acuminatum rupincolum** (Hedw.) R. & C.—Occasional with the species.
- B. acuminatum setosum** (Hedw.) Sull. & Lesq.—LANCASTER, *Muhlenberg*. [*Leskea setosa* Hedw.]
- B. acutum** (Mitt.) Sull.—In low places. MONROE, Water Gap, *Austin*; LEHIGH and NORTHAMPTON, *Rau*; MCKEAN, *Burnett*.
- B. campestre** (C. Muell.) Br. & Sch.—On damp ground and rocks in woods. MONROE, Tobyhanna Mills, NORTHAMPTON, Bethlehem, *Rau*; BUCKS, Morrisville, *James*.
- B. cyrtophyllum** Kindb.—MCKEAN, Bradford, *Burnett*.
- B. flexicaule** R. & C.—LANCASTER, *Muhlenberg*; MCKEAN, *Burnett*.
- B. Novae-Angliae** (Sull. & Lesq.) Jaeg. & Sauerb.—On wet ground and rocks. PIKE and LEHIGH, *Rau*; MONROE, Mount Pocono, *James*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA and CHESTER, *James*; YORK, *Porter*; LANCASTER, *Mrs. Eby*; MCKEAN, *Burnett*.

- B. oxycladon** (Brid.) Jaeg. & Sauerb.—LANCASTER, *Muhlenberg*.
- B. plumosum** (Sw.) Br. & Sch.—LANCASTER, Rock Hill and Tucquan, *Small*.
- B. populeum rufescens** Br. & Sch.—MCKEAN, Bradford, *Burnett*.
- B. reflexum** (Starke) Br. & Sch.—Credited to the State in Sullivant and Lesquereux's *Musci Allegh.* MCKEAN, Bradford, *Burnett*.
- B. rivulare** Br. & Sch.—On wet ground and rocks. MONROE, Tobyhanna Mills, *James*; NORTHAMPTON, Easton and Bethlehem, LEHIGH and BUCKS, *Rau*; PHILADELPHIA, Bingham's and the Wissahickon, *James*; LANCASTER, Mount Hope, *Small*; YORK, *Porter*; CAMBRIA, Cresson, *James*.
- B. rutabulum** (L.) Br. & Sch.—On wet and springy ground. PIKE, LEHIGH and NORTHAMPTON, Bethlehem, *Rau*; MONROE, Cresson; BUCKS, PHILADELPHIA, Bartram's Garden, Byberry, Wissahickon, DELAWARE and CHESTER, Coventry, *James*; LANCASTER and FRANKLIN, Mercersburg, *Porter*; MCKEAN, *Burnett*.
- B. salebrosum** (Hoffm.) Br. & Sch.—On logs and on the ground. MONROE, Tobyhanna Mills and Mount Pocono, *James*; LEHIGH, NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA, Bartram's Garden, Fairmount Park, Manayunk, and CHESTER, Chester Valley, *James*; LANCASTER and YORK, *Porter*; ELK, *McMinn*; MCKEAN, *Burnett*.
- B. Starkei** (Brid.) Br. & Sch.—On shaded ground. PIKE and CARBON, *Rau*; MONROE, Tobyhanna Mills and Mount Pocono, *James*; ELK, Benezette, *McMinn*; MCKEAN, *Burnett*.
- B. velutinum** (L.) Br. & Sch.—On the ground. LANCASTER, *Small*; YORK, *Porter*, rare; MCKEAN, *Burnett*.

Hylocomium Br. & Sch.

- H. brevirostre** (Ehrh.) Br. & Sch.—In shaded ravines and swamps. MONROE, Buckhill Falls, *E. G. Britton*, Pocono,

Porter; NORTHAMPTON and PIKE, *Rau*; PHILADELPHIA, Wissahickon, *James*; LANCASTER, Martic Forge, and BLAIR, *Porter*; CAMBRIA, *James*; ELK, *McMinn*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.

H. parietinum (L.) Lindb.—Open dry woods. MONROE, Pocono Mountain and Buckhill Falls, *E. G. Britton*; PIKE, *Garber*; CARBON and LEHIGH, *Rau*; NORTHAMPTON, Bethlehem and Easton, PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER and HUNTINGDON, *Porter*; ELK, *McMinn*; MCKEAN, *Burnett*. [*Hypnum Schreberi* Willd.]

H. proliferum (L.) Lindb.—On the ground in damp woods. MONROE, Pocono, and NORTHAMPTON, near Easton, *Porter*; PIKE and CARBON, *Rau*; PHILADELPHIA, high bluff on the Wissahickon, *James*; LANCASTER, Martic Forge, and BLAIR, *Porter*; LUZERNE, Pond Hill, *Small*; ELK, *McMinn*; MCKEAN, *Burnett*; WASHINGTON, *Linn* and *Simonton*. [*Hypnum splendens* Hedw.]

H. rugosum (Ehrh.) De Not.—Dry woods, on the ground. NORTHAMPTON, Easton, *Porter*; BUCKS, Nockamixon Rocks, *Small*; LANCASTER, FRANKLIN, Mercersburg, and HUNTINGDON, *Porter*. Common, but sterile.

H. squarrosum (L.) Br. & Sch.—Grassy places and borders of woods. PIKE, *Rau*; CAMBRIA, Cresson, *Lesquereux*.

H. triquetrum (L.) Br. & Sch.—In dry woods, on the ground. PIKE, CARBON and LEHIGH, *Rau*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, Fairmount Park, DELAWARE and CHESTER, *James*; LANCASTER, *Porter* and *Small*; LUZERNE, *Small*; CAMBRIA, *Porter*; ELK, *McMinn*; MCKEAN, *Burnett*; WASHINGTON, *Linn* and *Simonton*.

H. umbratum (Ehrh.) Br. & Sch.—MCKEAN, Marilla Brook, *Burnett*.

Eurhynchium Br. & Sch.

E. Boscii (Schwaegr.) Jaeg. & Sauerb.—On shaded rocks and banks. MONROE, Mt. Pocono, *E. G. Britton*, Delaware Water Gap, *Garber*; NORTHAMPTON, Easton, *Porter*;

BUCKS, PHILADELPHIA, DELAWARE and CHESTER, *James* ; LANCASTER, Safe Harbor, *Small* ; FRANKLIN and CAMBRIA, WASHINGTON, *Linn* and *Simonton*.

- E. diversifolium** (Schleich.) Br. & Sch.—NORTHAMPTON, Bethlehem, *Rau*.
- E. graminicolor** (Brid.) R. & C.—PIKE, LEHIGH, BUCKS, NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, *James* ; LANCASTER, Rock Hill, *Small* ; FRANKLIN, Mercersburg, and HUNTINGDON, Alexandria, *Porter* ; MCKEAN, Bradford, *Burnett*. [*Hypnum Sullivantii* Spruce.]
- E. hians** (Hedw.) Jaeg. & Sauerb.—In low, shaded places. LEHIGH, *Rau*; BUCKS, Nantowville, PHILADELPHIA. Wisahickon, Holmesburg, and CHESTER, Coventry, *James* ; DELAWARE (Smith's Catalogue) ; LANCASTER, FRANKLIN, Mercersburg, and CAMBRIA, Cresson, *Porter*; ELK, Bennett's Branch, *McMinn* ; WASHINGTON, *Linn* and *Simonton* ; MCKEAN, *Burnett*.
- E. piliferum** (Schreb.) Br. & Sch.—On moist ground. MONROE, Water Gap, and PHILADELPHIA, Wisahickon, *James*; ELK, Benezette, *McMinn*; MCKEAN, *Burnett*.
- E. strigosum** (Hoffm.) Br. & Sch.—On dry ground. MONROE, Water Gap, *James*; NORTHAMPTON, Easton, *James*, Bethlehem, *Rau*; LEHIGH, *Rau*; PHILADELPHIA and CHESTER, Coventry, *James*; ELK, *McMinn*; MCKEAN, *Burnett*.
- E. strigosum praecox** (Hedw.) Husn.—LANCASTER, *Muhlenberg*. [*Leskea fasciculosa* Hedw.]

Rhynchostegium Br. & Sch.*

- R. deplanatum** (Schimp.) L. & J.—On damp, shaded ground and stones. PIKE, *Rau*; MONROE, Analomink Creek, NORTHAMPTON, Easton, *Garber*; PHILADELPHIA, Fairmount Park, DELAWARE and CHESTER, *James*; MCKEAN, *Burnett*.

***R. curvisetum** (Brid.) Lindb. has been credited to Fairmount Park, Philadelphia, by Prof. T. P. James, but this is probably a mistake, as specimens cannot be found in his herbarium, and this is the only time it has been reported from North America.

- R. geophilum** Aust.—On damp, shaded ground. LEHIGH, *Rau*; PHILADELPHIA, on the Schuylkill (fruiting), *James*; CAMBRIA, Cresson, *Porter*. Rare.
- R. rusciforme** (Neck.) Br. & Sch.—On rocks in rivulets. MONROE, Water Gap, *James*; LEHIGH and BUCKS, *Rau*; NORTHAMPTON, Bethlehem, *Rau*, Easton, *Porter*; PHILADELPHIA, Wissahickon, and CHESTER, Coventry, *James*; LANCASTER, Chickies, *Porter*, Mount Hope, *Small*; YORK, *Porter*; CAMBRIA, Cresson, *James*; MCKEAN, *Burnett*.
- R. serrulatum** (Hedw.) Jaeg. & Sauerb.—On damp ground about trees. PIKE and LEHIGH, *Rau*; MONROE, Tobyhanna Mills, *James*; NORTHAMPTON, Bethlehem, *Rau*; Easton Cemetery and Weygat, *Porter*; PHILADELPHIA, Bartram's Garden, Mount Moriah Cemetery, Byberry, DELAWARE and CHESTER, Chester Valley, *James*; LANCASTER, *Porter*; CAMBRIA, Cresson, and BEAVER, *James*.

Sematophyllum Mitt.

- S. tenuirostre** (Br. & Sch.) E. G. Britton.—MONROE, Delaware Water Gap, *Austin*. [*R. cylindricarpum* (C. Muell.) Jaeg. & Sauerb.]
- S. Carolinianum** (C. Muell.) E. G. Britton.—On the ground and moist rocks. LEHIGH and CARBON, *Rau*; NORTHAMPTON, Bushkill Gap, and PHILADELPHIA, Wissahickon, *James*. [*R. demissum* (Wils.) De Not.]
- S. Marylandicum** (C. Muell.) E. G. Britton.—CARBON, *Rau*. [*R. Marylandicum* (C. Muell.) Jaeg. & Sauerb.]
- S. delicatulum** (James) E. G. Britton.—On perpendicular rocks. MCKEAN, Bradford, *Burnett*. [*R. laxepetalum* (L. & J.) R. & C.]
- S. adnatum** (Michx.) E. G. Britton.—MONROE, Buckhill Falls, *E. G. Britton*. [*R. microcarpum* (Brid.) Jaeg. & Sauerb.]
- S. Novae-Cesareae**, (Aust.) E. G. Britton.—On damp rocks. CARBON, Stony Creek (fruiting), *F. Wolle*; MCKEAN, Manilla Brook, *Burnett*. [*R. Novae-Cesareae* R. & C.]

- S. recurvans** (Michx.) E. G. Britton.—On the ground and roots of trees. PIKE, CARBON, LEHIGH and NORTHAMPTON, Bethlehem, *Rau*; MONROE, PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, Mount Hope, *Small*, Chickies, *Porter*; ELK, *McMinn*; MCKEAN, *Burnett*. [*R. recurvans* (Michx.) Br. & Sch.]

Porotrichum Brid.

- P. Alleghaniense** (Br. & Sch.) Grout.—Wet rocks, in ravines, rare in fruit. MONROE, Water Gap, *James*, *Knipe*, fruiting, Buckhill Falls, *E. G. Britton*; LEHIGH and BUCKS, Narrowsville, *Rau*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, Wissahickon, *James*; LANCASTER, Martic Forge, and HUNTINGDON, *Porter*, CAMBRIA, Cresson, *James*; MCKEAN, *Burnett*.

HYPNEAE.

Plagiothecium Br. & Sch.

- P. denticulatum** (L.) Br. & Sch.—On damp ground.—LEHIGH and NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; MONROE, Pocono, *James*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Small*; YORK and FRANKLIN, *Porter*; CAMBRIA, Ebensburg, *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- P. elegans** (Hook.) Schimp.—On the ground. PIKE and CARBON, *Rau*; NORTHAMPTON, Easton, *Porter*; PHILADELPHIA, Wissahickon, *James*; MCKEAN, *Burnett*.
- P. Muellerianum** Schimp.—On the ground. CARBON, *Rau*; PHILADELPHIA, Wissahickon, *James*; LANCASTER, Martic Forge, *Porter*.
- P. pulchellum nitidulum** (Wahl.) L. & J.—On the ground. BUCKS, Narrowsville, *James*; ELK, Benezette, *McMinn*.
- P. Roseanum orthocladon** (Br. & Sch.) Limpr.—On the ground. PHILADELPHIA, along the Schuylkill and Wissahickon, *James*. [*P. sylvaticum* var. *orthocladon* (Br. & Sch.) L. & J.]

- P. striatellum** (Brid.) Lindb.—On logs and shaded ground. PIKE and CARBON, *Rau*; PHILADELPHIA, Wissahickon, CHESTER, Chester Valley, and CAMBRIA, Ebensburg, *James*; MONROE, *Garber*; MCKEAN, *Burnett*. [*Hypnum Muhlenbeckii* Spruce.]
- P. Sullivantiae** Br. & Sch.—Shaded places on the ground. MONROE, Cresco, *James*; NORTHAMPTON, Bethlehem, *Rau*, Easton, *Porter*; PHILADELPHIA, Wissahickon, and DELAWARE, Radnor, *James*; LANCASTER, Marietta, *Porter*; MCKEAN, *Burnett*.
- P. sylvaticum** (Huds.) Br. & Sch.—PIKE, CARBON and LEHIGH, *Rau*; NORTHAMPTON, *Green*; CHESTER, Chester Valley, *James*; FRANKLIN, Mercersburg, *Porter*.
- P. turfaceum** (Lindb.) Lindb.—On damp ground. PIKE, *Rau*; CAMBRIA, Ebensburg, *James*; MCKEAN, *Burnett*.

Isopterygium Mitt.

- I. micans** (Sw.) E. G. Britton.—On decayed wood. CENTRE, Bear Meadows, *Porter*.

Amblystegium Br. & Sch.

- A. adnatum** (Hedw.) Aust.—On damp ground and rocks, in woods. LEHIGH and NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, Wissahickon, DELAWARE, Radnor, and CHESTER, Chester Valley, *James*; LANCASTER, Chestnut Hill, and YORK, *Porter*.
- A. confervoides** (Brid.) Br. & Sch.—On limestone rocks. NORTHAMPTON, Easton, *Porter*, Bethlehem, *Rau*; LANCASTER. [*H. confervoides* Brid.]
- A. fluviatile** (Sw.) Br. & Sch.—PIKE, outlet of East Branch Pond, *Rau*; MCKEAN, *Burnett*.
- A. irriguum** (Hook. & Wils.) Br. & Sch.—On wet rocks in rivulets. MONROE, Water Gap, *Wood*; LEHIGH, NORTH-
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- A. compactum** (C. Muell.) Austin has been credited to the State without locality, by L. Cheney (*Botanical Gazette*, 24: 265).

AMPTON, Bethlehem, *Rau*; PHILADELPHIA, Pennypack Creek, *James*; HUNTINGDON, *Porter*; CAMBRIA, Cresson and Johnstown, *James*.

- A. irriguum spinifolium** (Schimp.)—In and around limestone springs. FRANKLIN, Mercersburg, and LANCASTER, Lititz, *Porter*; NORTHAMPTON, *Rau*.
- A. Juratskanum** Schimp.—In damp places. NORTHAMPTON, Bethlehem, *Rau*.
- A. Kochii** Br. & Sch.—In springy places. MCKEAN, Bradford, *Burnett*.
- A. Lescurii** (Sull.) Aust.—On wet, shaded rocks. LUZERNE and CARBON, *Rau*; NORTHAMPTON, on the Bushkill Creek, LANCASTER, near the Buck Tavern; YORK, opposite Marietta, *Porter*; PHILADELPHIA, Wissahickon, *James*.
- A. minutissimum** (Sull. & Lesq.) Jaeg. & Sauerb.—On limestone rocks. NORTHAMPTON, Easton Cemetery; LANCASTER, Cedar Hill, and HUNTINGDON, Alexandria, *Porter*.
- A. riparium** (L.) Br. & Sch.—In rivulets and standing water. MONROE, *James*; NORTHAMPTON, Bethlehem, *Rau*; Easton, *Porter*; PHILADELPHIA, Wissahickon, DELAWARE and CHESTER, *James*; LANCASTER, Lititz Springs, and FRANKLIN, Mercersburg, *Porter*.
- A. serpens** (L.) Br. & Sch.—On logs, rocks and the ground. NORTHAMPTON, Bethlehem, *Rau*; Easton, *Green*; PHILADELPHIA, Bustleton, Manayunk, Byberry, DELAWARE, Radnor, and CHESTER, *James*; LANCASTER, Dillerville Swamp, *Porter*, Conewago, *Small*.
- A. varium** (Hedw.) Lindb.—Wet ground and rocks. MONROE, Water Gap, *James*; NORTHAMPTON; LEHIGH, *Rau*; BUCKS, *Rau*; PHILADELPHIA, Woodlands, Manayunk, Wissahickon, Tacony, Bustleton, DELAWARE, Radnor, and CHESTER, Chester Valley, *James*; HUNTINGDON, Spruce Creek, *Porter*; CAMBRIA, *James*; YORK and LEBANON, *Porter*; MCKEAN, *Burnett*. [*H. orthocladon* Brid.]

Hypnum L.*Hypnum*, subgenus *Chrysohypnum*.

- H. chrysophyllum** Brid.—On the ground in fields and woods. MONROE, Tobyhanna, *Garber*; Buckhill Falls, *E. G. Britton*; PIKE, LEHIGH, CARBON, NORTHAMPTON and BUCKS; LANCASTER, Cedar Hill, *Porter*; Smithville and New Texas, *Small*; MCKEAN, *Burnett*.
- H. hispidulum** Brid.—On the ground, the base of trees and old stumps. MONROE, Pocono, *James*; LEHIGH, *Rau*; NORTHAMPTON, Bethlehem, *Rau*, Easton, *Porter*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, *Porter* and *Small*; CAMBRIA and INDIANA, *James*; WASHINGTON, *Linn* and *Simonton*; MCKEAN, *Burnett*.
- H. radicale** Beauv.—On wet, decaying leaves. PIKE and LEHIGH, near Bethlehem, *Rau*; PHILADELPHIA, on the Wissahickon, *James*; LANCASTER, Conewago, *Small*. [*H. chrysophyllum* var. *tenellum* L. & J. *Hypnum Bergenense* Aust.]
- H. stellatum** Schreb.—Swamps. NORTHAMPTON, Bigen, *Rau*; CHESTER (Flora Cestrica); LANCASTER, Dillerville, *Porter*; MCKEAN, *Burnett*.

Hypnum, subgenus *Drepanocladus*.

- H. aduncum** L.—On wet rocks and in marshes. PIKE, *Rau*; NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA, Fairmount Park and Wissahickon, *James*; DELAWARE (Smith's Catalogue); LANCASTER, Dillerville Swamp, *Porter*; CHESTER, *Michener*; HUNTINGDON, *Porter*; CAMBRIA, *James*. [*Hypnum uncinatum* Hedw.]
- H. exannulatum** Guembel.—Marshy places. LUZERNE, *Rau*.
- H. fluitans** L.—In water. PIKE and CARBON, *Rau*; MONROE, Tobyhanna Mills, *Porter*; Water Gap, *Austin*; LANCASTER, Smithville, *Small*; CENTRE, Bear Meadows, *Porter*.
- H. hamifolium** Schimp.—MONROE, Pocono, *Porter*. Rare. [*H. aduncum giganteum* Br. & Sch.]
- H. Kneiffii** (Br. & Sch.) Schimp.—LUZERNE, *Rau*; CARBON, *F.*

Wolle; LANCASTER, Conewago, *Small*. [*A. Kneiffii* Br. & Sch.]

- H. polycarpon gracilescens** (Br. & Sch.) Limpr.—In limestone springs. LANCASTER, YORK, opposite Marietta, and FRANKLIN, near Chambersburg, *Porter*. [*H. aduncum gracilescens* Br. & Sch.]

Hypnum, subgenus *Cratoneuron*.

- H. filicinum** L.—Swamps. NORTHAMPTON, Monocacy, *Rau*; LANCASTER, Dillerville, and HUNTINGDON, Spruce Creek, *Porter*.

Hypnum, subgenus *Ptilium*.

- H. crista-castrensis** L.—In woods, on decayed logs and damp ground. MONROE, Pocono, *Porter*; PIKE, CARBON and NORTHAMPTON, *Rau*; PHILADELPHIA, Wissahickon, *James*; DELAWARE (Smith's Catalogue); CHESTER, New Garden, *Michener*; LANCASTER, Martic Forge, and CAMBRIA, Cresson, *Porter*; BLAIR, *Garber*; ELK, *McMinn*; MCKEAN, *Burnett*.

Hypnum, subgenus *Ctenidium*.

- H. molluscum** Hedw.—On the ground and rocks. MONROE, Tobyhanna Mills and Analomink Creek, *James*; LEHIGH and NORTHAMPTON, *Rau*; PHILADELPHIA, Wissahickon, *James*; DELAWARE, *Smith*; CHESTER, New Garden, *Michener*; LANCASTER, Martic Forge, and CAMBRIA, Cresson, *Porter*; BLAIR, *Garber*; ELK, *McMinn*; MCKEAN, *Burnett*; WASHINGTON, *Linn* and *Simonton*.

Hypnum, subgenus *Stereodon*.

- H. cupressiforme** L.—On the ground and roots of trees. LANCASTER, Mount Hope, *Small*; CAMBRIA, Ebensburg, *James*; MCKEAN, *Burnett*.
- H. cupressiforme filiforme** Brid.—PHILADELPHIA, Fairmount Park, *James*, sterile. MCKEAN, on damp stones at foot of cliff, *Burnett*.
- H. cypressiforme mammillatum** Brid.—LANCASTER, Beartown, *Small*.

- H. curvifolius** Hedw.—On damp ground and logs. BUCKS, PIKE and CARBON, *Rau*; MONROE, Pocono, and NORTHAMPTON, Easton, *Porter*; PHILADELPHIA, Wissahickon, DELAWARE and CHESTER, Chester Valley, *James*; LANCASTER, Safe Harbor, *Porter*; CAMBRIA, Ebensburg, *James*.
- H. fertile** Sendt.—In moist places. PIKE, *Rau*.
- H. Haldanianum** Grev.—On damp ground, in woods. MONROE, Pocono, *James*; LEHIGH and NORTHAMPTON, Bethlehem, *Rau*; PHILADELPHIA, Fairmount Park, DELAWARE and CHESTER, Chester Valley, *James*; CAMBRIA, Cresson, *Porter*, Ebensburg, *James*; ELK, *McMinn*.
- H. imponens** Hedw.—On decayed logs. MONROE, Mt. Pocono, Tobyhanna, *James*, and Pocono Mtn., *E. G. Britton*; PIKE, *Rau*; LEHIGH and NORTHAMPTON, *Rau*; PHILADELPHIA, DELAWARE and CHESTER, *James*; LANCASTER, Safe Harbor and New Texas, *Small*; DAUPHIN, Peter's Mtn., *Small*; FRANKLIN and CAMBRIA, Cresson, *Porter*; ELK, *McMinn*; WASHINGTON, *Linn and Simonton*; MCKEAN, *Burnett*.
- H. nemorosum** Koch.—On decayed logs. CARBON, *F. Wolle*.
- H. pallescens** Hedw.—On the ground and trunks of trees. PIKE, *Rau*; MONROE, *James* and *Porter*; CAMBRIA, Cresson, *Porter*.
- H. pratense** Koch.—In wet meadows. LEHIGH and NORTHAMPTON, *Rau*; PHILADELPHIA, *James*; LANCASTER, Dillerville Swamp, *Porter*; CAMBRIA, Wiltmore, *James*; MCKEAN, *Burnett*. Common.
- H. reptile** Michx.—At base of trees and on decaying logs, MONROE, Mt. Pocono, *E. G. Britton*; PIKE, *Rau*; LANCASTER, *Muhlenberg*; MCKEAN, *Burnett*.
- Hypnum*, subgenus *Hygrohypnum*.
- H. eugyrium** Br. & Sch.—On rocks in mountain brooks. LUZERNE and CARBON, *Rau*.
- H. ochraceum** Turn.—Wet rocks. LEHIGH, PIKE, *Rau*; MONROE, Mt. Pocono, and CARBON, Mauch Chunk, *James*;

NORTHAMPTON, Bethlehem, *Rau*; CAMBRIA, Cresson, *James*; MCKEAN, *Burnett*.

- H. palustre** Huds.—Wet rocks, CARBON, *Rau*; HUNTINGDON, *Porter*; MCKEAN, *Burnett*.

Hypnum, subgenus *Calliergon*.

- H. cordifolium** Hedw.—Swamps. PIKE, *Rau*; MONROE, Pocono, *Porter* and *James*; NORTHAMPTON and BUCKS, *Rau*.

- H. giganteum** Schimp.—Swamps. LANCASTER, Dillerville Swamp, *James*, *Porter*, *Small*.

- H. stramineum** Dicks.—Swamps. MONROE, Pocono (in a bed of wet sphagnum), *Porter*. Very rare.

Hypnum, subgenus *Acrocladium*.

- H. cuspidatum** L.—Swamps and marshy ground. LEHIGH and NORTHAMPTON, on the Monocacy, *Rau*; LANCASTER, Dillerville Swamp, *Porter*.

PTERIDOPHYTA.

OPHIOGLOSSALES.

OPHIOGLOSSACEAE.

Ophioglossum L.

- O. vulgatum** L.—In moist meadows and thickets. MONROE, Tannersville, *Porter*; TIOGA, *Garber*; LUZERNE, Lily Lake, *Heller*; BUCKS, *Ruth*; DELAWARE, *Leidy*; CHESTER, *Canby*; MIFFLIN, *Henderson*; CRAWFORD, Conneaut Lake, *Garber*.

Botrychium Sw.

- B. dissectum** Spreng.—In open woods and about thickets. NORTHAMPTON, *Seibert*; MONTGOMERY, *Saunders*; DELAWARE, *G. Smith*; LANCASTER and FRANKLIN, *Porter*; MIFFLIN, Kishicoquillas Valley, *Henderson*; ERIE, *Fenno*.
- B. lanceolatum** (S. G. Gmel.) Angs.—In meadows, woods, and swamps. WAYNE, Mt. Pleasant, *Garber*; LYCOMING, Pine Creek, *McMinn*; SOMERSET, *Brown and Saunders*.
- B. neglectum** Wood.—In grassy woods and swamps. WAYNE, *Garber*; MONROE, Tannersville, *Seibert*; SUSQUEHANNA, top of Mt. Ararat, alt. 2800 ft., *Saunders*.
- B. obliquum** Muhl.—In low woods and open places. MONROE and NORTHAMPTON, *Porter*; BUCKS, *Fretz*; MONTGOMERY, *Saunders*; DELAWARE (Smith's Catalogue); CHESTER, LANCASTER and FRANKLIN, *Porter*; HUNTINGDON, *Porter*; ALLEGHENY, *Shafer*; ERIE, *Fenno*; MIFFLIN, *Henderson*.
- B. simplex** E. Hitchcock.—In moist woods, meadows and swamps. MONROE, Naomi Pines, *E. G. Britton*; NORTHAMPTON, Chestnut Hill, near Easton (only two specimens found), *J. Marsh*.

- B. Virginianum** (L.) Sw.—In damp or rich woods. PIKE and MONROE, *Porter*; NORTHAMPTON; BUCKS; PHILADELPHIA; DELAWARE; CHESTER; LANCASTER; FRANKLIN, *Green*; HUNTINGDON and SOMERSET, *Brown and Saunders*; ALLEGHENY, *Shafer*; ERIE, *Fenno*. Common throughout the State.

FILICALES.

OSMUNDACEAE.

Osmunda L.

- O. Claytoniana** L.—In low woods and marshes. LACKAWANNA and MONROE, *Porter*; BUCKS; PHILADELPHIA; LANCASTER, *Diffenbaugh*; FRANKLIN and HUNTINGDON, *Shafer*; LEBANON, *Heller*; ERIE, *Fenno*; CHESTER (Flora Cestricea); PIKE, *Porter*; HUNTINGDON; TIOGA; BEAVER; DELAWARE, *Shafer*.
- O. cinnamomea** L.—In swamps and low grounds. LACKAWANNA, *Porter*; NORTHAMPTON; BUCKS; LANCASTER, *Carter*; MONROE, *Porter*; LEBANON, *Small*; ERIE, *Fenno*; PIKE, *Porter*; HUNTINGDON, *Porter*; CENTRE; FRANKLIN, *Green*; LAWRENCE, *Shafer*; CHESTER (Flora Cestricea); DELAWARE (Smith's Catalogue).
- O. regalis** L.—In swamps and marshes. LACKAWANNA and MONROE, *Porter*; BUCKS; NORTHAMPTON, *Porter*; DELAWARE (Smith's Catalogue); LANCASTER, *Porter*; LEBANON and COLUMBIA, *Heller*; PERRY, *Porter*; VENANGO, *Bell*; ALLEGHENY, *Shafer*; ERIE, *Fenno*; CHESTER (Flora Cestricea); PIKE, *Porter*; HUNTINGDON; CENTRE.

SCHIZAEACEAE.

Lygodium Sw.

- L. palmatum** (Bernh.) Sw.—In moist thickets and open

woods. MONROE, Long Pond, *Porter*; BUCKS, (Moyer's Catalogue); LUZERNE, near Hazelton, *Porter*; SCHUYLKILL; CARBON, Onoko Glen, *Rau*.

POLYPODIACEAE.

Onoclea L.

- O. sensibilis** (L.)—In low or moist grounds. NORTHAMPTON; BUCKS; LANCASTER; HUNTINGDON; ERIE; CHESTER; PIKE; MONROE; BEAVER; ALLEGHENY; DELAWARE.

Matteuccia Todaro.

- M. Struthiopteris** (L.) Todaro.—In thickets, especially along streams. MONROE; NORTHAMPTON; BUCKS; LANCASTER; DAUPHIN; MIFFLIN; BLAIR; VENANGO; ALLEGHENY; ERIE; SOMERSET.

Woodsia R. Br.

- W. Ivensis** (L.) R. Br.—On exposed rocks or cliffs. LUZERNE; Lily Lake, *Heller*; LYCOMING, *McMinn*; HUNTINGDON; BUCKS; MONROE, Water Gap, *Knipe*; NORTHAMPTON, near Easton, *Seibert*; BUCKS, Nockamixon Cliffs, *Porter*; BLAIR, Tyone, *Porter*; CHESTER (Flora Cestricea).
- W. obtusa** (Spreng.) Torr.—On rocks and in stony soil. PIKE, *Brown* and *Saunders*; NORTHAMPTON and BUCKS, *Porter*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestricea); LANCASTER, *Small*; LYCOMING, *McMinn*; FRANKLIN and HUNTINGDON, *Porter*; ALLEGHENY, *Knipe*.

Dennstaedtia Bernh.

- D. punctilobula** (Michx.) Moore.—In moist or dry soil, especially on exposed stony hillsides. WAYNE, *Garber*; PIKE, *Brown* and *Saunders*; LACKAWANNA, *Dudley*; MONROE, *Porter*; LUZERNE, *Heller*; NORTHAMPTON; BUCKS, *Fretz*; DELAWARE (Smith's Catalogue); CHESTER, (Flora Cestricea); LANCASTER; LYCOMING, *McMinn*;

SOMERSET, *Brown and Saunders*; BEAVER and ALLEGHENY, *Shafer*; ERIE, *Fenno*.

Filix Adans.

- F. bulbifera** (L.) Underw.—On moist rocks, especially limestone. SUSQUEHANNA, *Saunders*; MONROE, Bushkill; NORTHAMPTON; BUCKS; LANCASTER and HUNTINGDON, *Porter*; ALLEGHENY and BEAVER, *Shafer*.
- F. fragilis** (L.) Underw.—On rocks or in moist woods. SUSQUEHANNA, *Saunders*; MONROE; LUZERNE and COLUMBIA, *Heller*; NORTHAMPTON; LANCASTER and DAUPHIN, *Porter*; LYCOMING, *McMinn*; SULLIVAN, *Smith*; HUNTINGDON, *Porter*; ALLEGHENY, *Knipe*; SOMERSET, *Brown and Saunders*.

Dryopteris Adans.

- D. Boottii** (Tuckerm.) Underw.—In woods. SUSQUEHANNA, *Saunders*; PIKE, *Brown and Saunders*; MONTGOMERY, *Saunders*; PHILADELPHIA, *Leidy*; BERKS, *Hiestler*; SOMERSET, *Brown and Saunders*; ALLEGHENY, *Shafer*; ERIE, *Fenno*.
- D. cristata** (L.) A. Gray.—In swamps and low woods. LUZERNE, *Thurston*; MONROE, Tobyhanna Mills, *Porter*; PIKE, *Brown and Saunders*; NORTHAMPTON, *Wolle*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestrica); LANCASTER, *Porter*; HUNTINGDON and CENTRE, *Davis*; BLAIR, *Boecking*; SOMERSET, *Brown and Saunders*; ALLEGHENY and LAWRENCE, *Shafer*; ERIE, *Fenno*.
- D. cristata Clintoniana** (D. C. Eaton) Underw.—SUSQUEHANNA, *Saunders*; NORTHAMPTON, Bangor, *Porter*; DELAWARE and CHESTER, *Price*; ERIE, *Fenno*.
- D. Goldieana** (Hook.) A. Gray.—In rich or moist woods. SUSQUEHANNA, *Saunders*; NORTHAMPTON, Easton, *Porter*; BUCKS, *Moyer*; BERKS, Reading, *Hiestler*; MONTGOMERY, *Saunders*; CHESTER, *Palmer*; BLAIR, *Boecking*; SOMER-

SET, *Brown and Saunders*; ALLEGHENY, *Shafer*; VENANGO, *Bell*; ERIE, *Fenno*.

- D. marginalis** (L.) A. Gray.—In rocky woods. LACKAWANNA; PIKE, *Brown and Saunders*; NORTHAMPTON; BUCKS; PHILADELPHIA; DELAWARE, *Smith*; CHESTER, (*Flora Cestrica*); LANCASTER, *Porter*; DAUPHIN, *Small*; COLUMBIA, *Heller*; LYCOMING, *McMinn*; FRANKLIN; SOMERSET, *Brown and Saunders*; ALLEGHENY, *Shafer*; ERIE, *Fenno*.
- D. noveboracensis** (L.) A. Gray.—In moist woods and thickets. SUSQUEHANNA, *Saunders*; PIKE, *Brown and Saunders*; LACKAWANNA, MONROE and NORTHAMPTON, *Porter*; BUCKS, *Fretz*; LUZERNE, *Heller*; PHILADELPHIA; DELAWARE, (*Smith's Catalogue*); CHESTER and LANCASTER, *Porter*; FRANKLIN, *Green*; ALLEGHENY, *Shafer*; ERIE, *Fenno*.
- D. simulata** Davenp.—In damp woods and shaded swamps. PIKE, *Brown and Saunders*; MONROE, Tannersville Bog; SCHUYLKILL, Pottsville, *Porter*; CHESTER, Paoli; CRAWFORD.
- D. spinulosa** (Retz) Kuntze.—In rich woods. MONROE, Pocono, and FRANKLIN, Mercersburg, *Green*; HUNTINGDON, Alexandria, *Porter*.
- D. spinulosa dilatata** (Hoffm.) Underw.—SUSQUEHANNA, *Saunders*; LACKAWANNA; PIKE, and MONROE, Pocono, *Porter*; LYCOMING, *McMinn*; POTTER, *Smith*; ARMSTRONG, *Knipe*; ERIE, Presque Isle, *Garber*.
- D. spinulosa intermedia** (Muhl.) Underw.—PIKE, *Brown and Saunders*; MONROE, Pocono; NORTHAMPTON, Easton, and BUCKS, Nockamixon Cliffs, *Porter*; DELAWARE, (*Smith's Catalogue*); CHESTER, (*Flora Cestrica*); LANCASTER; SOMERSET, *Brown*; BEAVER and BUTLER, *Shafer*; ERIE, *Fenno*.

D. Thelypteris (L.) A. Gray.—In wet woods or marshes, or rarely in dry meadows. PIKE, *Brown and Saunders*; NORTHAMPTON and BUCKS, *Porter*; PHILADELPHIA; DELAWARE, Tinicum; CHESTER, (Flora Cestrica); LANCASTER; FRANKLIN, *Green*; HUNTINGDON, *Lowrie*; ALLEGHENY, *Shafer*; ERIE, *Fenno*.

Polystichum Roth.

P. acrostichoides (Michx.) Schott.—On rocky hillsides or in woods.—PIKE, *Brown and Saunders*; MONROE, NORTHAMPTON and BUCKS, *Porter*; PHILADELPHIA; DELAWARE, (Smith's Catalogue); CHESTER, (Flora Cestrica); LANCASTER and FRANKLIN, *Porter*; COLUMBIA, *Heller*; CENTRE, *Rothrock*; SOMERSET, *Brown and Saunders*; ALLEGHENY, *Shafer*; VENANGO, *Bell*.

P. acrostichoides Schweinitzii (Beck) Small.—NORTHAMPTON, Easton, *Porter*; MONROE, *Small*.

P. Braunii (Spenner) Lawson.—In rocky woods. SULLIVAN, *Griffith*.

Phegopteris Fée.

P. Dryopteris (L.) Fée.—In moist woods. WAYNE, *Garber*; PIKE, *Brown and Saunders*; MONROE, *Small*; WYOMING, *Shirk*; LACKAWANNA, *Dudley*; TIOGA, *Garber*; LUZERNE, *Heller*; NORTHAMPTON, Glendon, *Seibert*; DELAWARE, *Price*; CHESTER, *Diffenbaugh*; LANCASTER, *Mifflin*; HUNTINGDON, Pennsylvania Furnace, *Porter*; BLAIR, *Boecking*; SOMERSET, *Brown and Saunders*; ARMSTRONG, *Knipe*; ERIE, *Fenno*.

P. hexagonoptera (Michx.) Fée.—In dry woods and on hillsides. MONROE; LUZERNE, *Heller*; NORTHAMPTON, *Porter*; MONTGOMERY, *Saunders*; DELAWARE, *Jahn*; CHESTER, (Flora Cestrica); LANCASTER; FRANKLIN and HUNTINGDON, *Porter*; YORK, *MacElwee*; SOMERSET, *Brown and Saunders*; BEAVER, *Shafer*.

- P. Phegopteris** (L.) Underw.—On hillsides and in low woods. LUZERNE, *Dudley*; PIKE, *Brown and Saunders*; MONROE, Pocono, and NORTHAMPTON, Maston's Creek, *Porter*; SCHUYLKILL, *Stauffer*; WYOMING, *Sharp*; SULLIVAN, *Smith*; TIOGA; HUNTINGDON, *Lowrie*; BLAIR, *Davis*; VENANGO, *Bell*.
- P. Robertiana** (Hoffm.) A. Braun.—In woods and thickets. ERIE, Union City, *Fenno*.

Asplenium L.

- A. acrostichoides** Sw.—In rich moist woods. PIKE, *Brown and Saunders*; MONROE and NORTHAMPTON, *Porter*; BUCKS, *Moyer*; BERKS, *Hiester*; DELAWARE, (Smith's Catalogue); LANCASTER and FRANKLIN, *Porter*; BEAVER and ALLEGHENY, *Shafer*.
- A. angustifolium** Michx.—In moist woods. BERKS, Reading, *Hiester*; LANCASTER, YORK and BLAIR, Burgsoon's Gap, *Porter*; FAYETTE, *Curtis*; ALLEGHENY, *Knipe*; ERIE, *Fenno*.
- A. Bradleyi** D. C. Eaton.—On rocks, preferring limestone. LANCASTER, along the Tucquan Creek, *Small*; McCall's Ferry, *Heller*.
- A. ebenoides** R. R. Scott.—On limestone. NORTHAMPTON, Glendon, Easton, *Porter, Small*; LEHIGH.
- A. Filix-foemina** (L.) Bernh.—In woods, thickets and by fences. PIKE, *Brown and Saunders*; MONROE and NORTHAMPTON, *Porter*; BUCKS, *Moyer*; DELAWARE, (Smith's Catalogue); CHESTER, (Flora Cestrica); LANCASTER, *Porter*; LUZERNE, *Heller*; LYCOMING, *McMinn*; FRANKLIN, *Green*; HUNTINGDON, *Lowrie*; BEAVER and ALLEGHENY, *Shafer*; VENANGO, *Bell*; ERIE, *Fenno*.
- A. montanum** Willd.—On rocks. LACKAWANNA, *Dudley*; MONROE, Water Gap, *Knipe*; CARBON, Onoko Glen, *Rau*; LEHIGH; NORTHAMPTON, Easton, *Diffenbaugh*; LANCASTER,

TER, on the Tucquan, *Porter*; YORK, York Furnace, *Diffenbaugh*; SOMERSET, Laurel Hill, *Brown and Saunders*.

- A. pinnatifidum** Nutt.—On rocks. YORK, York Furnace, and LANCASTER, on the Tucquan and at Georgetown, *Porter*; FAYETTE, *Shafer*.
- A. platyneuron** (L.) Oakes.—On rocks and shaded slopes. PIKE, *Brown and Saunders*; MONROE and NORTHAMPTON, *Porter*; BUCKS; DELAWARE, (Smith's Catalogue); CHESTER, (Flora Cestricea); LANCASTER, FRANKLIN and HUNTINGDON, *Porter*; ALLEGHENY, *Shafer*.
- A. Ruta-muraria** L.—On limestone. NORTHAMPTON, Easton, *Porter*; BUCKS, *Fretz*; CHESTER, (Flora Cestricea); LANCASTER; FRANKLIN; HUNTINGDON and BLAIR, *Porter*; CENTRE, *Rothrock*.
- A. Trichomanes** L.—On limestone rocks. LACKAWANNA, *Dudley*; PIKE, *Brown and Saunders*; MONROE, NORTHAMPTON and BUCKS, *Porter*; DELAWARE, *Smith*; CHESTER (Flora Cestricea); LANCASTER; FULTON, *Saunders*; HUNTINGDON, *Porter*; SUSQUEHANNA, *Graves*; VENANGO, *Bell*; BEAVER and ALLEGHENY, *Shafer*.

Camptosorus Link.

- C. rhizophyllus** (L.) Link.—On dry rocks, preferring limestone. MONROE and NORTHAMPTON, Easton, *Porter*; BUCKS, *Moyer*; DELAWARE (Smith's Catalogue); CHESTER and MONTGOMERY, *Saunders*; PIKE, *Brown and Saunders*; LANCASTER, YORK, FRANKLIN and HUNTINGDON, Barre Forge, *Porter*; FULTON, *Saunders*; SUSQUEHANNA, *Graves*; SULLIVAN, *Smith*; CENTRE, *Rothrock*; SOMERSET, *Brown and Saunders*; BEAVER and ALLEGHENY, *Shafer*; VENANGO, *Krout*; ERIE, *Fenno*.

Woodwardia J. E. Smith.

- W. areolata** (L.) Moore.—In swamps and moist soil. BUCKS, Bristol, *Diffenbaugh*; DELAWARE, Tinicum.

- W. Virginica** (L.) J. E. Smith.—In swamps. SUSQUEHANNA, *Graves*; PIKE, *Brown and Saunders*; MONROE, Broadheadsville, *Porter*; NORTHAMPTON, Moore Township, *Wolle*; BUCKS, Bristol, *Diffenbaugh*; DELAWARE, Tinicum, *B. H. Smith*; CENTRE, near Pennsylvania Furnace, *Porter*.

Pteridium Scop.

- P. aquilinum** (L.) Kuhn.—In dry or moist sunny places. LACKAWANNA; PIKE, *Brown and Saunders*; MONROE; LUZERNE, *Heller*; SCHUYLKILL; CARBON; NORTHAMPTON, *Porter*; BUCKS, *Moyer*; DELAWARE (Smith's Catalogue); CHESTER (Flora Cestricea); LANCASTER, FRANKLIN and HUNTINGDON, *Porter*; ALLEGHENY, *Shafer*; ERIE, *Fenno*.

- P. aquilinum subcaudatum** Clute.—DELAWARE, *Smith*.

Cheilanthes Sw.

- C. lanosa** (Michx.) Watt.—On rocks. NORTHAMPTON, Easton, *Seibert*; BERKS, Reading, *Hiester*; BUCKS, *Fretz*; CHESTER, *Carter*; MONROE, Water Gap, *Knipe*; LANCASTER, Safe Harbor, *Porter*.

Cryptogramma R. Br.

- C. Stelleri** (S. G. Gmel.) Prantl.—On rocks, preferring limestone. SULLIVAN, on the face of a rock in the Loyalsock Creek, *C. E. Smith*.

Pellaea Link.

- P. atropurpurea** (L.) Link.—On rocks, preferring limestone. NORTHAMPTON, Easton, *Porter*; MONTGOMERY, *Jahn*; CHESTER, *Saunders*; CUMBERLAND, *Shafer*; LANCASTER, FRANKLIN and HUNTINGDON, *Porter*; CENTRE, *Rothrock*; WESTMORELAND, *Shafer*.

Adiantum L.

- A. pedatum** L.—In woods. PIKE, MONROE and NORTHAMPTON, *Porter*; BUCKS, *Moyer*; PHILADELPHIA; DELAWARE, *Jahn*; CHESTER (Flora Cestricea); LANCASTER, FRANK-

LIN and BLAIR, *Porter*; COLUMBIA, *Heller*; SOMERSET, *Brown* and *Saunders*; BEAVER and ALLEGHENY, *Shafer*; ERIE, *Fenno*.

Polypodium L.

P. vulgare L.—On rocks. NORTHAMPTON, Easton, *Porter*; BUCKS, *Moyer*; DELAWARE, *Jahn*; CHESTER (Flora Cestricea); PIKE and MONROE, *Porter*; LUZERNE, *Heller*; LANCASTER, FRANKLIN and HUNTINGDON, *Porter*; SOMERSET, *Brown* and *Saunders*; BEAVER and ALLEGHENY, *Shafer*; ERIE, *Fenno*.

EQUISETALES.

EQUISETACEAE.

Equisetum L.

- E. arvense** L.—In sandy soil. MONROE; NORTHAMPTON; BUCKS; PHILADELPHIA; DELAWARE; CHESTER; LANCASTER; FRANKLIN and HUNTINGDON, *Porter*; ALLEGHENY, *Houston*; VENANGO, *Krout*; ERIE, *Fenno*.
- E. fluviatile** L.—In swamps and along the borders of ponds. TIOGA, *Garber*; LUZERNE, *Heller*; LEHIGH, *Rau*; MONROE and NORTHAMPTON, *Porter*; BUCKS, Tullytown, *Fretz*; ERIE, *Fenno*.
- E. hyemale** L.—In wet places and on banks, especially along rivers and lakes. NORTHAMPTON and BUCKS, *Porter*; DELAWARE, CHESTER; LANCASTER; ERIE, *Fenno*.
- E. laevigatum** A. Br.—Along streams and rivers, especially in clay soil. NORTHAMPTON, Easton, along the Delaware, *Porter*.
- E. littorale** Kuehl.—On sandy river and lake shores. NORTHAMPTON, Easton, *Porter*; BUCKS, Point Pleasant, *Fretz*; DELAWARE, *Palmer*; LANCASTER, YORK and DAUPHIN, on the Susquehanna, *Porter*.
- E. pratense** Ehrh.—In sandy places. CLEARFIELD, *McMinn*.

- E. scirpoides** Michx.—On moist wooded banks. Credited to the State in Britton and Brown's Illustrated Flora.
- E. sylvaticum** L.—In moist sandy woods. PIKE, *Brown* and *Saunders*; MONROE and NORTHAMPTON, *Porter*; LUZERNE, *Heller*; TIOGA, *Garber*; BUCKS, *Moyer*; LEHIGH, *Garber*; DELAWARE; CHESTER; LANCASTER, *Porter*; LEBANON, *Small*; FULTON, *Saunders*; HUNTINGDON, Warrior's Mark, *Lowrie*; BEAVER, *Shafer*.
- E. variegatum** Schleich.—ERIE, Presque Isle, *Garber*.

LYCOPODIALES.

LYCOPODIACEAE.

Lycopodium L.

- L. alopecuroides** L.—In pine-barren swamps. BUCKS, Tullytown, *Fretz*; ERIE, Presque Isle, *Guttenberg*.
- L. annotinum** L.—In woods and thickets, commonly in dry soil. MONROE, Pocono, *Porter*; TIOGA, *Garber*; SULLIVAN, *C. E. Smith*; CENTRE, Bear Meadows and HUNTINGDON, Warrior's Bridge, *Porter*; CAMBRIA; SOMERSET, *Brown* and *Saunders*.
- L. clavatum** L.—In woods. TIOGA and LUZERNE, *Garber*; MONROE, *Porter*; BUCKS, *Moyer*; CHESTER; DELAWARE, *Smith*; HUNTINGDON, *Bucher*; BLAIR and CAMBRIA, *Porter*; ELK, *McMinn*; LANCASTER, *Heller*.
- L. complanatum** L.—In woods and thickets. LACKAWANNA, Moosic Lake, *Dudley*; MONROE and NORTHAMPTON, *Porter*; BUCKS, *Moyer*; DELAWARE, *B. H. Smith*; CHESTER; LANCASTER, *Porter*; SOMERSET, *Brown* and *Saunders*; ALLEGHENY, *Shafer*; ERIE, *Clinton*.
- L. inundatum** L.—In sandy bogs. LACKAWANNA, Moosic Lake, and MONROE, Naomi Pines, CARBON and SCHUYLKILL, Broad Mountain, *Porter*; LUZERNE, *Heller*; LYCOMING, *McMinn*.

- L. inundatum Bigelovii** Tuckerm.—In low grounds. DELAWARE, Tinicum, *Porter*.
- L. lucidulum** Michx.—In cold, damp woods. MONROE, *Porter*; LUZERNE, *Heller*; NORTHAMPTON, Easton, *Porter*; BUCKS, *Moyer*; DELAWARE, (Smith's Catalogue); CHESTER; LEBANON, *Porter*; YORK, York Furnace, *MacElwee*; FRANKLIN and HUNTINGDON, *Porter*; BLAIR, *Lowrie*; SOMERSET, *Brown and Saunders*; BUTLER, *Shafer*.
- L. obscurum** L.—In moist woods. LACKAWANNA, *Dudley*; MONROE; LUZERNE, *Heller*; NORTHAMPTON, *Porter*; BUCKS, *Moyer*; DELAWARE, (Smith's Catalogue); CHESTER; LANCASTER; LEBANON, *Porter*; FRANKLIN; HUNTINGDON and CAMBRIA, *Porter*; SOMERSET, *Brown and Saunders*; ERIE, *Shafer*.
- L. Selago** L.—On rocks. MONROE, Water Gap, at the summit of the mountain. Elevation 1600 feet, *Knipe*.
- L. tristachyum** Pursh.—In woods. MONROE, Tobyhanna Mills, *Britton*; HUNTINGDON, *Lowrie*.

SELAGINELLACEAE.

Selaginella Beauv.

- S. apus** (L.) Spring.—In moist shaded places, often among grass. MONROE and NORTHAMPTON, Easton, *Porter*; BUCKS, *Moyer*; MONTGOMERY, *Saunders*; DELAWARE; CHESTER; FRANKLIN, Mercersburg, and HUNTINGDON, *Porter*.
- S. rupestris** (L.) Spring.—On dry rocks. PIKE, *Brown and Saunders*; MONROE; NORTHAMPTON, Easton, and BUCKS, Nockamixon Cliffs, *Porter*; BERKS; CHESTER; LANCASTER, *Porter*.

ISOETACEAE.

Isoetes L.

- I. Dodgei** A. A. Eaton.—In mud flats. BUCKS, Mount Pleasant, *Fretz*.

Isoetes echinospora Durieu.—Represented in our range by the following subspecies :

- I. **echinospora Braunii** (Durieu) Engelm.—WAYNE, *Saunders*; LACKAWANNA, Moosic Lake, and CARBON, Great Lake, *Porter*; CRAWFORD, Conneaut Lake, and ERIE, Presque Isle, *Garber*.
- I. **echinospora robusta** Engelm.—BUCKS, near Riegelsville, *Ruth*.
- I. **Engelmannii** A. Br.—In mud, chiefly about ponds and ditches, and on river shores. MONROE, Tannersville and Water Gap, *Porter*; LEHIGH, near Bethlehem, *Rau*; BUCKS, *Fretz*.
- I. **Engelmannii gracilis** Engelm.—DELAWARE, Tinicum; BUCKS.
- I. **Engelmannii valida** Engelm.—LANCASTER, Smithville, (original station), LEBANON, near Cornwall; HUNTINGDON, in a pond near Warrior's Mark, *Porter*.
- I. **riparia** Engelm.—Along rivers. BUCKS, near Tullytown, *Fretz*; PHILADELPHIA, *C. E. Smith* and *Leidy*; DELAWARE, *G. Smith*.

